STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	1	101

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT

BUTLER COUNTY

K-900

PROJ. NO. 900-8 KA-6474-01
FED. PROJ. NO. ACSTP-A647(401)

GRADING & SURFACING (ASPHALT)
BRIDGE
SEEDING
SIGNING
PAVEMENT MARKING

INDEX OF SHEETS

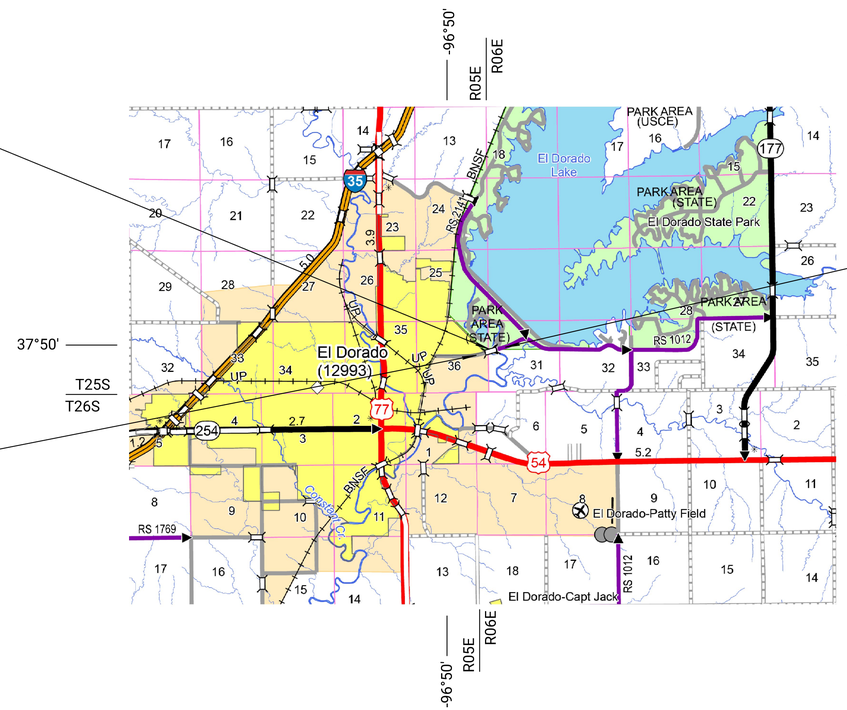
1	TITLE
2	SIGNATURE SEAL SHEET
3	TYPICAL SECTIONS
4	FOUNDATION TREATMENT & COMPACTION DETAIL
5	SALVAGED TOPSOIL
6	GENERAL NOTE SHEET
7	MAINLINE PLAN SHEET
8	MAINLINE PROFILE SHEET
9	FIELD ENTRANCE PLAN-PROFILE SHEET
10	SECTION CORNER MONUMENTATION DETAIL
11-13	PAVEMENT DETAILS
14	FLUME INLET & SLOPE DRAIN DETAILS
15-22	GUARDRAIL
23	CONCRETE END SECTIONS
24	PIPE CULVERT SUMMARY
25-48	BRIDGE NO. 900-8-2.00 (197)
49	BRIDGE EXCAVATION
50	STANDARD PILE DETAILS
51	SUPPORTS & SPACERS FOR REINFORCING STEEL
52	SUMMARY OF QUANTITIES
53	PROJECT SURFACING
54-63	TEMPORARY EROSION & POLLUTION CONTROL
64	SEEDING
65-74	SIGNING
75-77	PAVEMENT MARKING
78-89	TRAFFIC CONTROL
90-97	MAINLINE CROSS SECTIONS
98-101	FIELD ENTRANCE CROSS SECTIONS

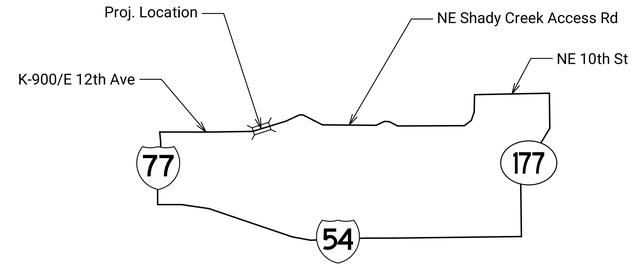
Scale: 1" = 1 Mile

℄ Sta. 100+66.50 CONSTRUCT
Br. No. 900-8-2.00 (197)
100' - 101' - 100' Prestressed Conc. Beam Continuous (PBMC)
36'-0" Roadway
w/ 10' Shared Use Path

Sta. 98+00.00 BEGIN
Proj. No. 900-8 KA-6474-01 =
Sta. 98+00.00 on Proj. No.
13-8 K5109(2) (1961)

Sta. 104+50.00 END
Proj. No. 900-8 KA-6474-01 =
Sta. 104+50.00 on Proj. No.
13-8 K5109(2) (1961)





PROJECT DETOUR

NOTE: TRAFFIC SHALL BE CARRIED ON STATE ROUTES DURING CONSTRUCTION AS SHOWN ON THE SKETCH

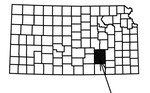
DESIGN DESIGNATION

AADT	1900 (2025)
AADT	2400 (2045)
DHV	12%
D	60/40
T	2%
V	50 MPH
C of A	NONE
Clear Zone	20 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	1172.18
RAILROADS		STREAM or CREEK	

GROSS LENGTH OF PROJECT	650 FT. (Includes Equations)	
EXCEPTIONS		
NET LENGTH OF PROJECT	650 FT.	0.123 MILES
NET LENGTH OF BRIDGES	304 FT.	0.058 MILES
NET LENGTH OF ROAD	346 FT.	0.065 MILES



Approved: Jul 22, 2025
Date

State Transportation Engineer

By:

Chief, Bureau of Road Design

KANSAS DEPARTMENT OF TRANSPORTATION

	BY	DATE
SURVEY	R. FELDKAMP	2022
CADD TECHNICIAN	J. SANDERS / W. FEHR	2025
DESIGNERS	J. SANDERS (ROAD) / W. FEHR (BRIDGE)	2025
SQUAD	L. SMITH (ROAD) / D. SHANNON (BRIDGE)	2025

Plotted by : Jay.Sanders@ks.gov 2-MAY-2025 12:43
File : ka647401rt-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	2	101

LUCAS C. SMITH LICENSED 29848 KANSAS PROFESSIONAL ENGINEER Jul 22, 2025 Name: Lucas Smith, P.E. Co. Name: KDOT - Bureau of Road Design Plan Section: Road	NATHAN T. JEFFRIES LICENSED 25390 KANSAS PROFESSIONAL ENGINEER Apr 24, 2025 Name: Nathan Jeffries, PE Co. Name: KDOT - Bureau of Traffic Engineering Plan Section: Permanent Signing	NICHOLAS ROGERS LICENSED 19805 KANSAS PROFESSIONAL ENGINEER Apr 24, 2025 Name: Nicholas Rogers. P.E. Co. Name: KDOT - Bureau of Traffic Engineering Plan Section: Traffic Control	KAREN M.S. PETERSON LICENSED 17957 KANSAS PROFESSIONAL ENGINEER Jul 20, 2025 Name: Karen Peterson, PE Co. Name: KDOT - BSGS Plan Section: Bridge				

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.

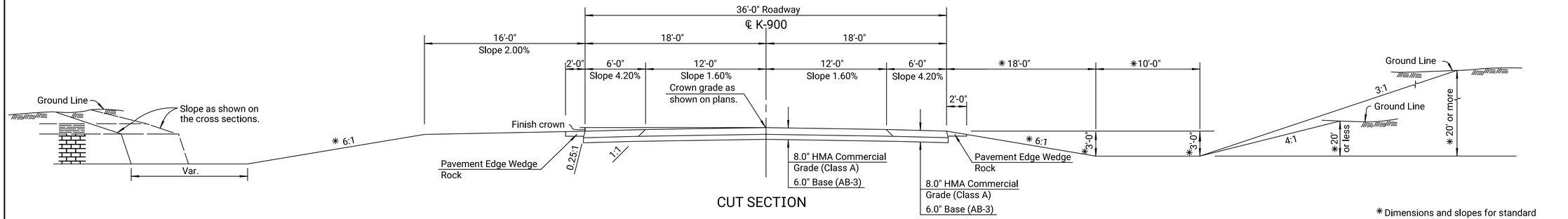
KDOT Graphics Certified 04-18-2022 Sh. No. 2

KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 21:33
File : rd048.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	3	101

Guide to designer: Use this sheet when subgrading in rock or shale is not required.
See Soils and Geology Reports for additional plan notes.

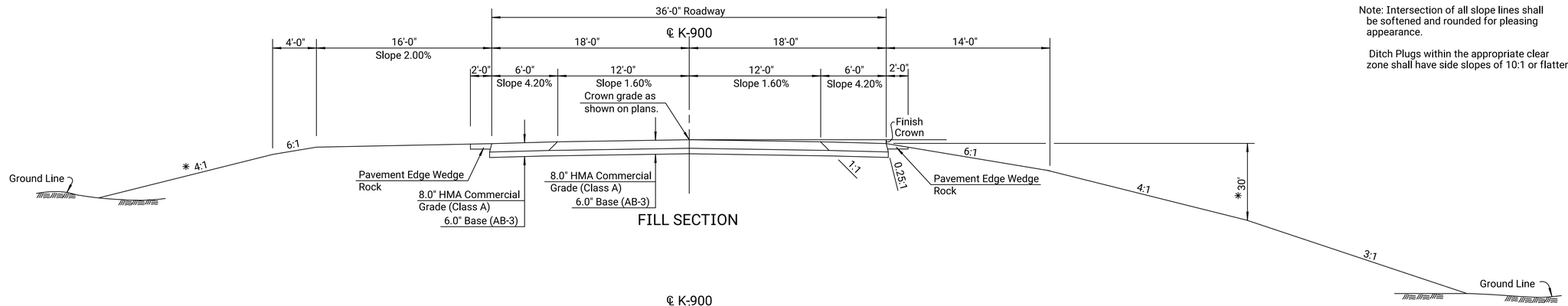


CUT SECTION

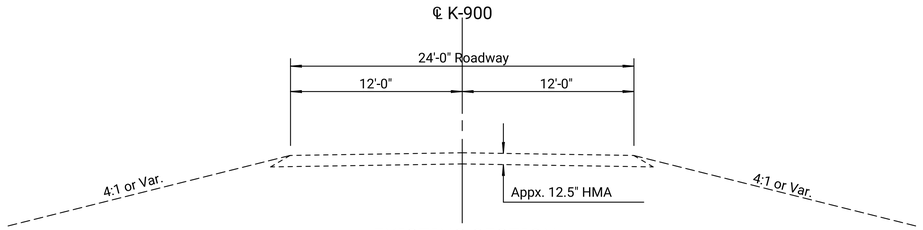
✳Dimensions and slopes for standard ditches and fills. See plan and cross-sections for variations.

Note: Intersection of all slope lines shall be softened and rounded for pleasing appearance.

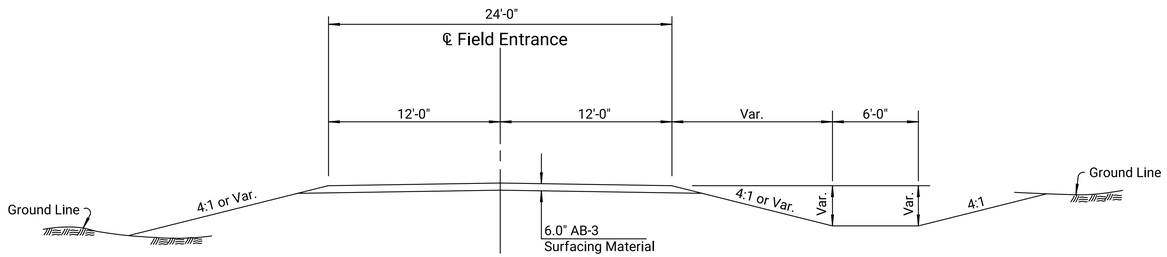
Ditch Plugs within the appropriate clear zone shall have side slopes of 10:1 or flatter.



FILL SECTION



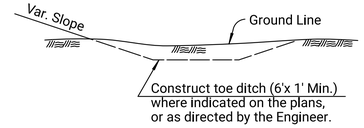
EXISTING SECTION
(FOR INFORMATION ONLY)



FILL SECTION

FIELD ENTRANCE
K-900 STA. 97+50

CUT SECTION



NO.	DATE	REVISIONS	BY	APP'D
21	01-25-13	Removed Slope, Pvmt. Edge	S.W.K.	J.O.B.
20	05-20-09	8:1/6:1 over 10' fill mound ent./sd.rd.	S.W.K.	J.O.B.
19	11-10-04	Changed slope labels to percent	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS GRADING & SURFACING

~~RD600~~

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

CADconform Certify This File

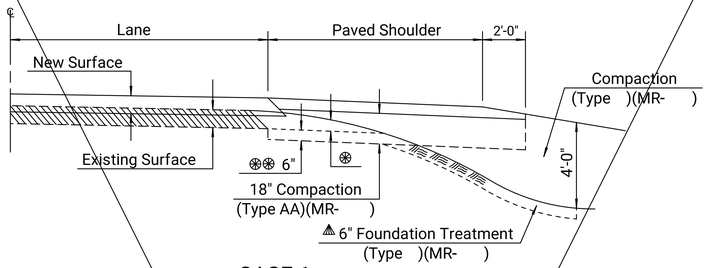
Sh. No. 3

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Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:54
File : KA647401rts-01.dgn

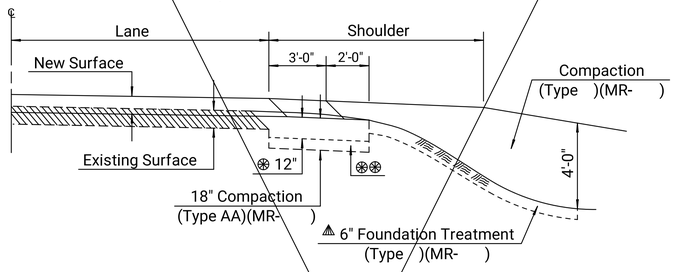
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	4	101

REHABILITATION



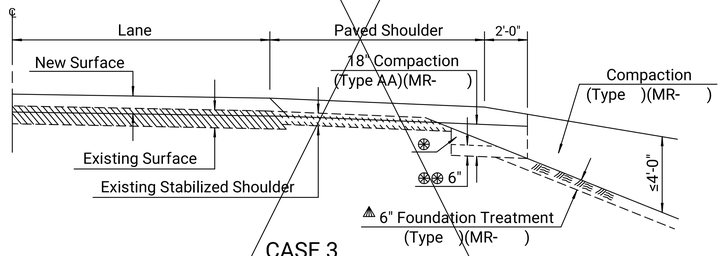
CASE 1

Overlay with Paved Shoulder



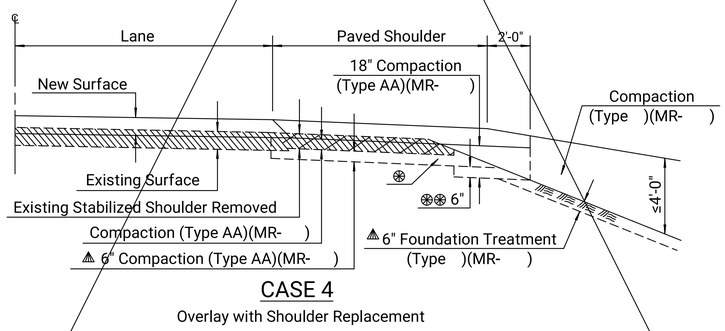
CASE 2

Overlay with Composite Shoulder



CASE 3

Overlay with Existing Paved Shoulder



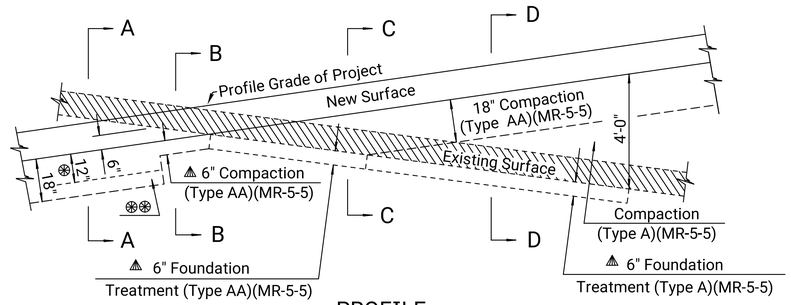
CASE 4

Overlay with Shoulder Replacement

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

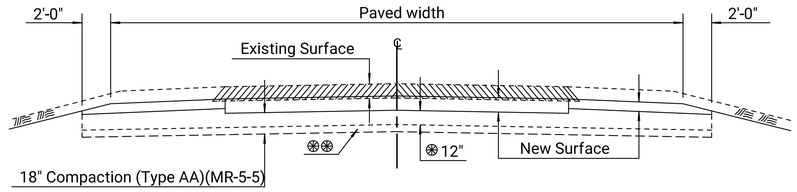
Note: These are 4 general cases. Specific compaction requirements are determined on a project-by-project basis.

RECONSTRUCTION

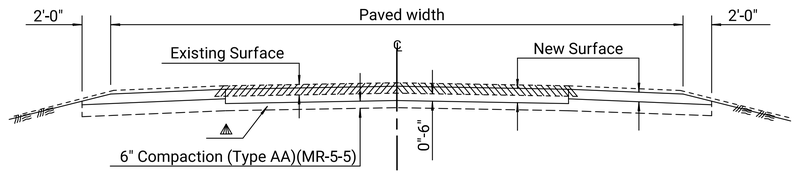


PROFILE

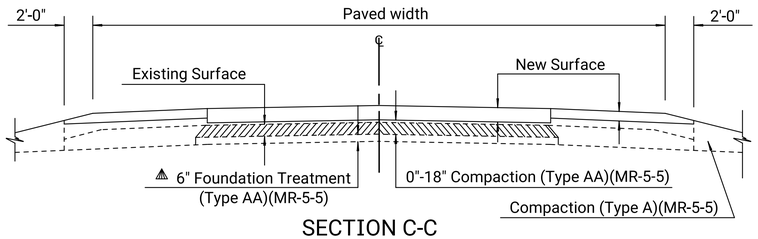
⊛ Excavation thru Cuts not Subgraded
⊛⊛ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



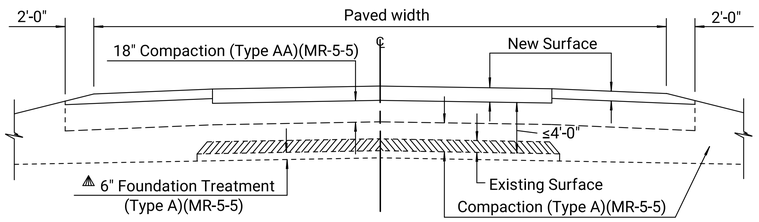
SECTION A-A



SECTION B-B

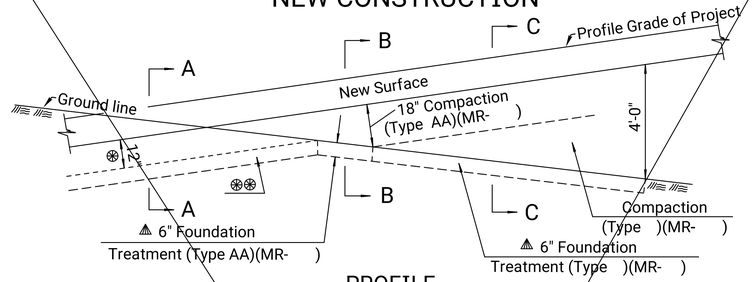


SECTION C-C



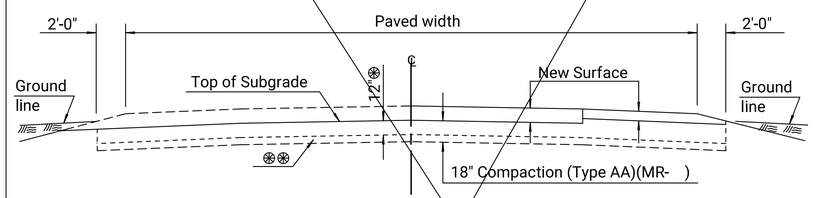
SECTION D-D

NEW CONSTRUCTION

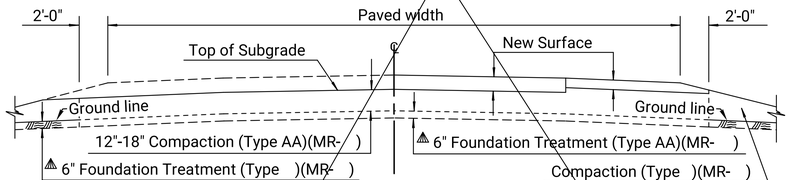


PROFILE

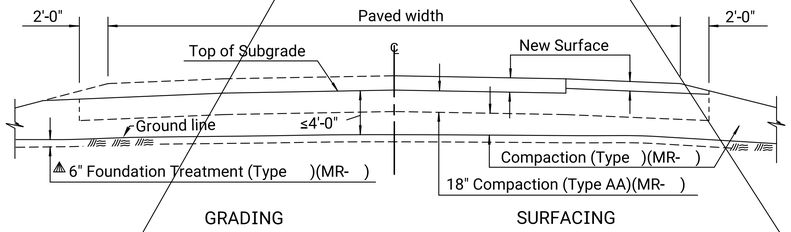
⊛ Excavation thru Cuts not Subgraded
⊛⊛ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



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.

CADconform Certify This File

Sh. No. 4

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:54
File : rd605.dgn

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	5	101

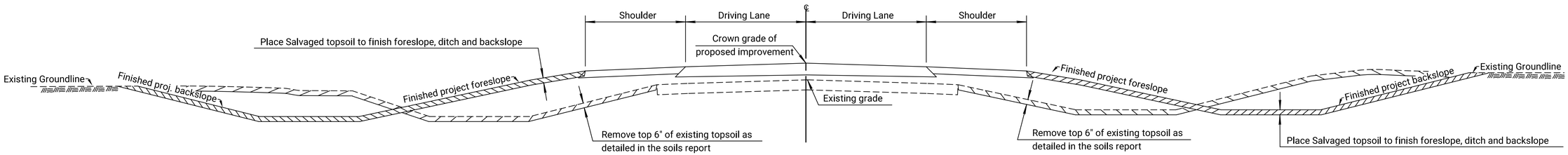
Note to Designer: Acceptable Topsoil locations on a project will be detailed in the Soils Report. The locations will be used in conjunction with the plans to measure a horizontal area in Sq. Yds of "Salvaged Topsoil" within the R/W limits.

GENERAL NOTE

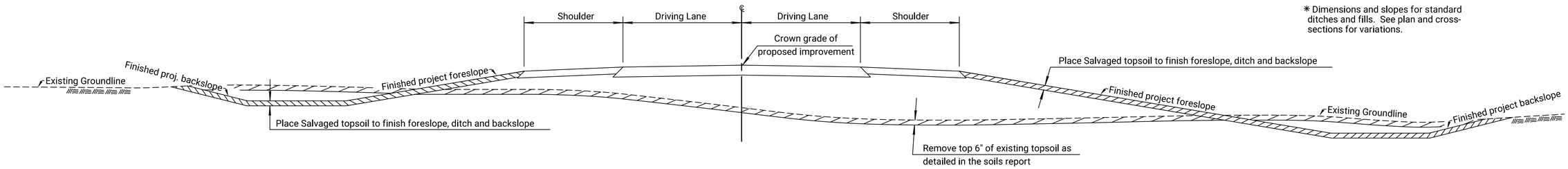
Adjust the cut and fill sections to accommodate the placement of the salvaged topsoil such that after placement the cross section will be at the final grade as shown on the plans.

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.

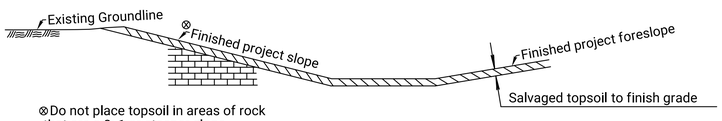
LEGEND

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

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:53
File : rd599a.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	6	101

DATE	BY	
2023	J. SANDERS	REFERENCES NOTED
2024	L. SMITH	REFERENCES CHECKED

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, SHELTER BELTS, 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.

A GROSS VMF OF 0.80 WAS USED TO COMPUTE EARTHWORK QUANTITIES FOR THIS PROJECT. THIS FACTOR INCLUDES QUANTITIES FOR INITIAL CONSOLIDATION AND SETTLEMENT.

ALL SAWCUTS SHALL BE FULL DEPTH OR AS APPROVED BY THE ENGINEER AND SHALL NOT BE PAID FOR DIRECTLY; BUT SHALL BE SUBSIDIARY TO OTHER BID ITEMS ON THE CONTRACT.

SOIL FOR EMBANKMENT CONSTRUCTION: ALL SOIL USED IN THE TOP 18" INCHES OF THE EMBANKMENT SHOULD CONFORM TO THE FOLLOWING REQUIREMENTS: 10 ≤ PI ≤ 30 AND 20 ≤ LL ≤ 50. SOILS WHICH CONTAIN SUBSTANTIAL ORGANIC MATERIAL, SUCH AS THOSE CLASSIFIED AS OL OR OH ACCORDING TO THE UNIFIED SOIL 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.

PROJECT SURVEY CONTROL

HORIZONTAL

Kansas Regional Coordinate System Zone 17 (Wichita)
NAD83 (2011)

VERTICAL

North American Vertical Datum (NAVD) 1988
GEOID 12A
Datum Benchmark = CP #10
Elevation = 1295.086'

UTILITY OWNERS

AT&T Distribution
Phone: 785-567-4281

Butler County Rural Water District #3
591 SE Rosalia Rd
Rosalia, KS 67132
Phone: 620-476-2288

Cox Communications
101 East 12th Ave
El Dorado, KS 67042
Jason Patty - Director of Public Utilities
Phone: 316-619-9609

KDWP
1020 S Kansas Avenue
Topeka, KS 66612
Brett Blackburn
Phone: 785-296-8404

Evergy
700 North Star Street
El Dorado, KS 67042
Phone: 800-383-1183

Kansas Gas Service
PO Box 219046
Kansas City, MO 64121-9046
Phone: 800-794-4780

NOTE: Sewer line, power pole, rectifier, and tornado siren adjacent to field entrance on the south side of K-900 not to be disturbed with construction.

PROPERTY OWNERS

(7) *Robbie A. & Megan S. Beggs, Joint Revocable Trust*
Lot 1, Block 4
Criss Fourth Add.

(8) *Reginald J. & Denna Rice*
Lot 2, Block 4
Criss Fourth Add.

(9) *Stephen L. & Adah E. Walker*
Lot 3, Block 4
Criss Fourth Add.

(10) *Daniel Thomas*
Lot 4, Block 4
Criss Fourth Add.

(11) *Willy R. Vinson*
Lot 5, Block 4
Criss Fourth Add.

(12) *Nancy A. Kile, TOD*
Lot 6, Block 4
Criss Fourth Add.

(13) *Nicholas Allen & Kimberley A. Poe*
Lot 7, Block 4
Criss Fourth Add.

(14) *Jessica L. & Christopher M. Eck*
Lot 20, Block 4
Criss Fourth Add.

(15) *David G. & Victoria S. Wiebe, TOD*
Lot 19, Block 4
Criss Fourth Add.

(16) *Sarah C. & Derek K. Richardson*
Lot 18, Block 4
Criss Fourth Add.

(17) *Francis E. & Dixie R. Young*
Lot 17, Block 4
Criss Fourth Add.

KANSAS DEPARTMENT OF TRANSPORTATION

GENERAL NOTE

CADconform Certify This File

Sh. No. 6

Plotted by: Jay.Sanders@ks.gov 6-MAY-2025 19:27
File: ka647401rgn-01.dgn

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	7	101

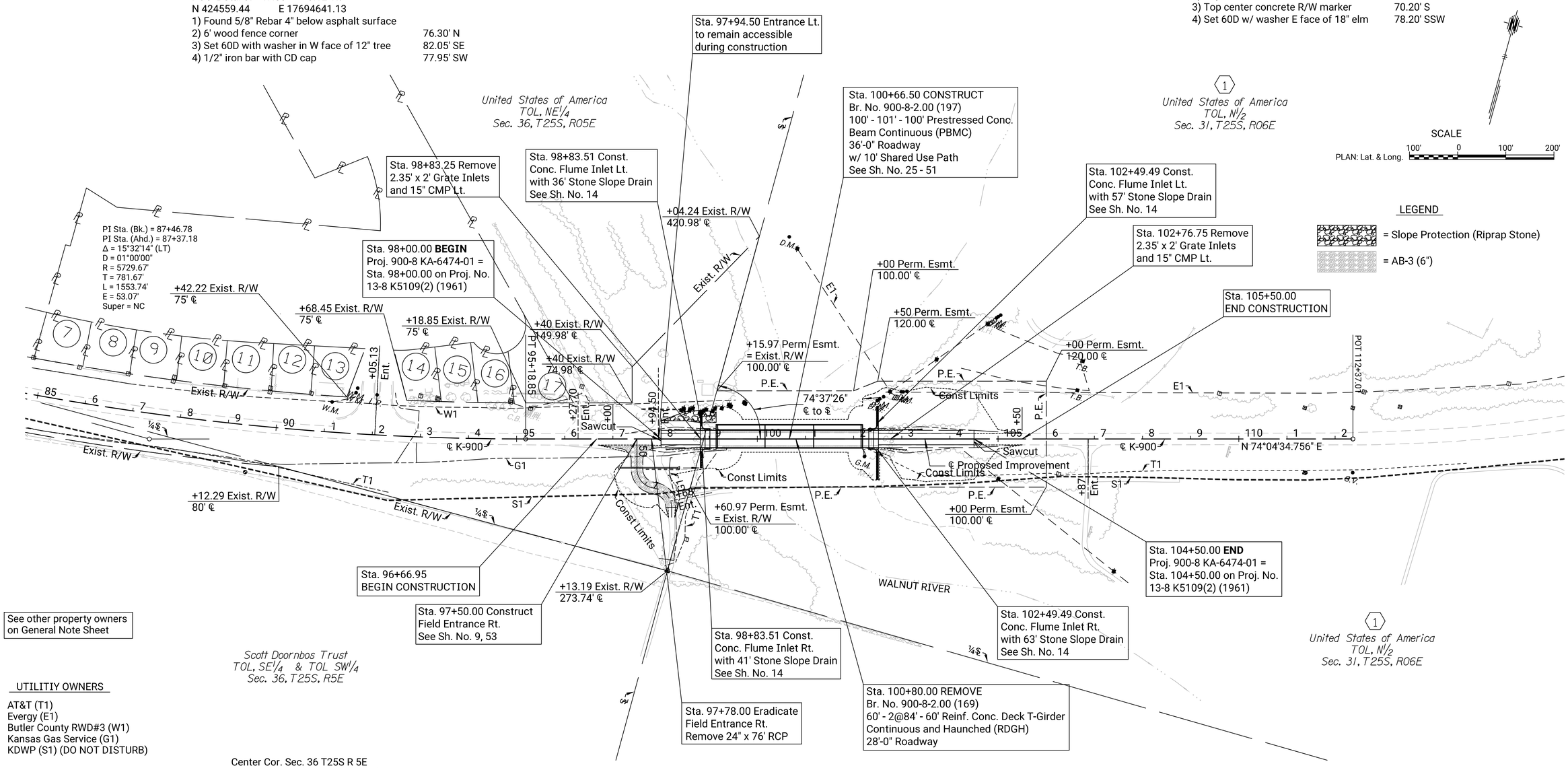
PI ℄ Sta. 87+41.09 51.01' Rt
N 424504.85 E 17694640.11
1) Found 3/4" Rebar 18" below asphalt surface
2) Set 60D with washer in W face of 12" tree 44.00' ESE
3) Top center 2 3/4" metal fence post welded to T-post 82.00' WSW
4) 1/2" iron bar with CD cap 72.88' WNW

POT ℄ Sta. 95+20.96
N 424720.83 E 17695394.19
1) Found 5/8" rebar 4" below asphalt surface
2) SW corner of concrete water pit cover 61.70' N
3) SE corner of concrete water pit cover 63.90' N
4) S face of power pole #TS304799 76.25' NNW

POT ℄ Sta. 98+00.00 0.17' Lt.
N 424797.66 E 17695662.86
1) Found 1/2" rebar 6" below asphalt surface
2) S face metal gate post 44.55' N
3) End of guardrail 33.00' NE
4) Set mag nail w/ washer in N face tornado siren pole 46.50' SSE

POT ℄ Sta. 111+36.85
N 425164.27 E 17696948.46
1) Found 5/8" rebar 12" below asphalt surface
2) Top center concrete R/W marker 65.00' N
3) Top center concrete R/W marker 70.20' S
4) Set 60D w/ washer E face of 18" elm 78.20' SSW

POC ℄ Sta. 87+49.83 0.12' Rt
N 424559.44 E 17694641.13
1) Found 5/8" Rebar 4" below asphalt surface
2) 6' wood fence corner 76.30' N
3) Set 60D with washer in W face of 12" tree 82.05' SE
4) 1/2" iron bar with CD cap 77.95' SW



UTILITIY OWNERS

AT&T (T1)
Evergy (E1)
Butler County RWD#3 (W1)
Kansas Gas Service (G1)
KDWP (S1) (DO NOT DISTURB)

Center Cor. Sec. 36 T25S R 5E
N 424495.53 E 17693103.06
Found 3/4" iron bar 1.3' below surface at intersection of 12th St. and Sharpsville Rd.
1) Found mag nail in E face power pole 80.10' NE
2) Top center steel fence corner post 94.40' SE
3) Top W end 36" CMP 85.50' SSW
4) Found mag nail in E face power pole 79.00' NW
5) Apparent ℄ of E 12th St.

East Quarter Cor. Sec. 36 T25S R 5E
N 424537.88 E 17695750.69
Found chiseled "+" in concrete field entrance
1) Found spike and washer in top fence post 42.85' NE
2) Found spike and washer in N face gate post 11.70' E
3) Found spike and washer in NE face gate post 8.15' W
4) In center of field entrance between gate post
5) 283.91' S of ℄ Sta. 98+88.47, ℄ to ℄ >) N 74°37'26" E

Northeast Cor. Sec. 36 T25S R 5E
N 427134.05 E 17695725.88
Set survey marker in asphalt at surface
1) Found NE corner of El Dorado swimming beach bath house 80.03' SSW
2) Found SE corner of El Dorado swimming beach bath house 87.39' SSE
3) Found N face metal light pole 72.69' SSE
4) Found E face metal light pole 61.51' SSW
5) 2312.39' N of ℄ Sta. 98+88.47, ℄ to ℄ >) N 74°37'26" E

BM #1 Found "□" cut in SW corner hdwl. 8'x10' RCB
27.20' Rt. ℄ Sta. 79+84.58 Elev. 1297.386

BM #2 Set "T" post 1' N of 5" pipeline set in barb wire fence
97.86' Rt. ℄ Sta. 89+44.99 Elev. 1289.596

BM #4 Found "□" cut in N bridge rail in NE corner of bridge
19.11' Lt. ℄ Sta. 102+34.18 Elev. 1303.466

BM #5 Set "T" post 2' east of found 4"x4" Conc. R/W Marker
69.88' Lt. ℄ Sta. 111+38.61 Elev. 1290.586

KANSAS DEPARTMENT OF TRANSPORTATION

K-900 PLAN

STA. 85+00.00 TO STA. 112+37.01

DATE	2023	2024
BY	J. SANDERS	L. SMITH
REFERENCES NOTED		
REFERENCES CHECKED		

Plotted by : Jay.Sanders@ks.gov 16-JUL-2025 19:01
File : ka647401rpl-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	8	101

	BY	DATE
REFERENCES NOTED	J. SANDERS	2023
REFERENCES CHECKED	L. SMITH	2024

SCALE
PLAN: Lat. & Long. 100' 0 100' 200'
PROFILE: Horiz. same as above
Vert. 10' 0

+00.00 — Earthwork Balances — +50.00

Balance 1 (Field Entrance Realignment)

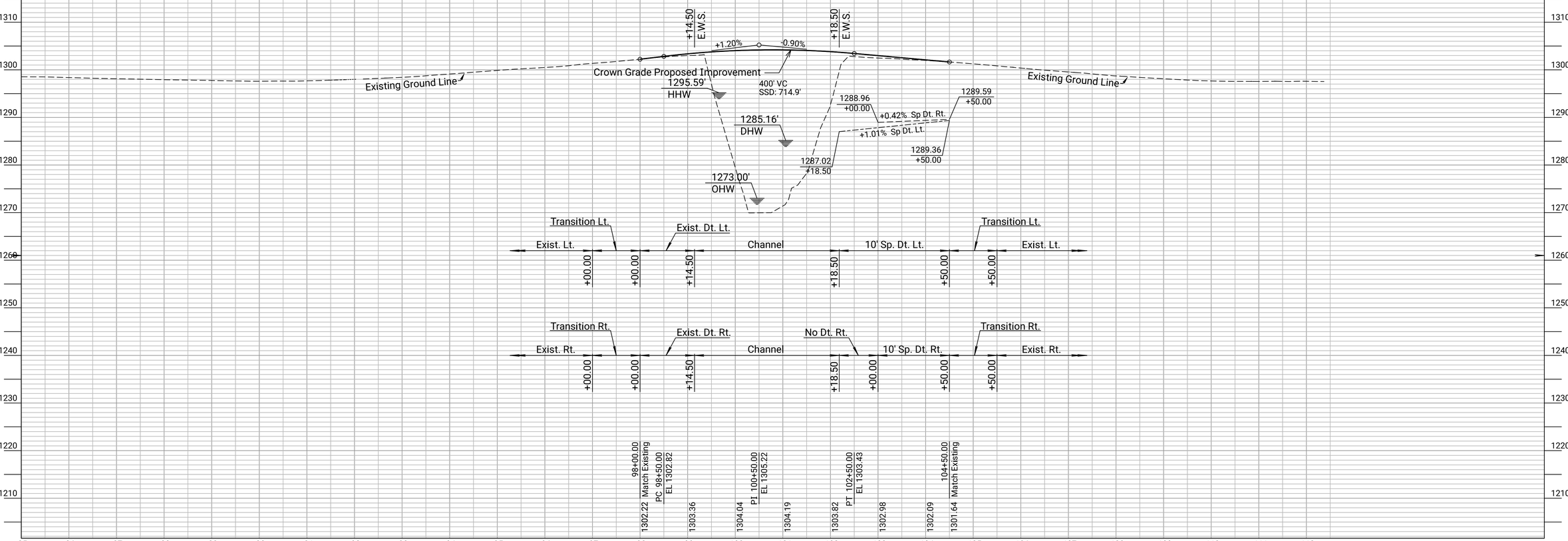
110 Cu. Yds. Common Excavation
1068 Cu. Yds. Common Excavation (Cont. Furn.) (VMF = 0.8)
942 Cu. Yds. Embankment

Balance 2 (Mainline Sta. 97+00 to 99+14.50)

76 Cu. Yds. Common Excavation
245 Cu. Yds. Common Excavation (Cont. Furn.) (VMF = 0.8)
117 Cu. Yds. Rock Excavation (Exist. Pavement) (VMF = 1.0)
257 Cu. Yds. Embankment

Balance 3 (Mainline Sta. 102+18.50 to 105+50)

591 Cu. Yds. Common Excavation
2833 Cu. Yds. Common Excavation (Cont. Furn.) (VMF = 0.8)
195 Cu. Yds. Rock Excavation (Exist. Pavement) (VMF = 1.0)
2739 Cu. Yds. Embankment



Plotted by : Jay.Sanders@ks.gov 24-APR-2025 15:31
File : ka647401rpr-01.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

K-900 PROFILE

STA. 85+00.00 TO STA. 112+37.01

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	9	101

Office Location
Field Ent.
POT Sta. 50+00.00
N 424783.776 E 17695614.823
1. Not Set
2. 50+00.00 = ℄ Sta. 97+50.00

Office Location
Field Ent.
PC Sta. 50+62.18
N 424723.985 E 17695631.882
1. Not Set

Office Location
Field Ent.
PC Sta. 51+25.98
N 424695.566 E 17695682.422
1. Not Set

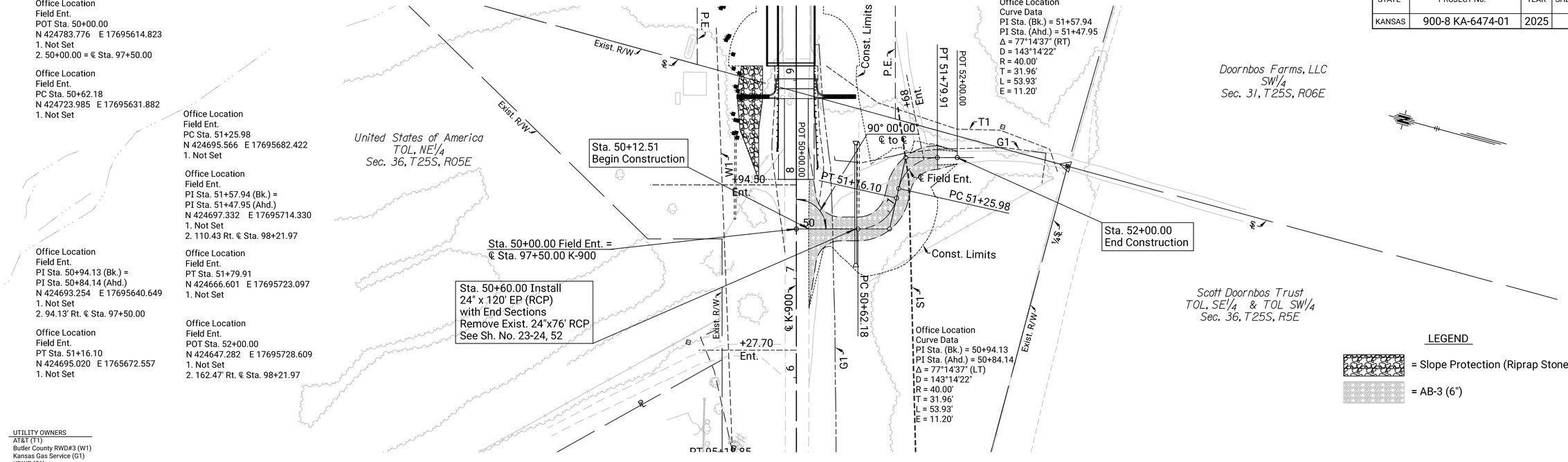
Office Location
Field Ent.
PI Sta. 51+57.94 (Bk.) =
PI Sta. 51+47.95 (Ahd.)
N 424697.332 E 17695714.330
1. Not Set
2. 110.43 Rt. ℄ Sta. 98+21.97

Office Location
Field Ent.
PI Sta. 50+94.13 (Bk.) =
PI Sta. 50+84.14 (Ahd.)
N 424693.254 E 17695640.649
1. Not Set
2. 94.13' Rt. ℄ Sta. 97+50.00

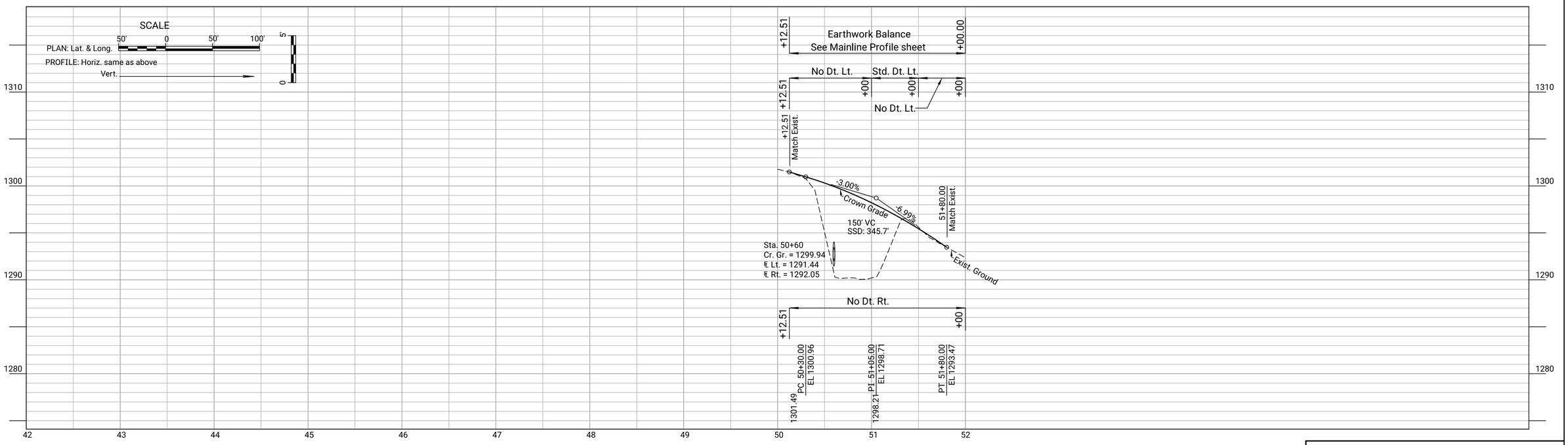
Office Location
Field Ent.
PT Sta. 51+16.10
N 424695.020 E 1765672.557
1. Not Set

Office Location
Field Ent.
PT Sta. 51+79.91
N 424666.601 E 17695723.097
1. Not Set

Office Location
Field Ent.
POT Sta. 52+00.00
N 424647.282 E 17695728.609
1. Not Set
2. 162.47' Rt. ℄ Sta. 98+21.97



UTILITY OWNERS
AT&T (T1)
Butler County RWD#3 (W1)
Kansas Gas Service (G1)
KDWP (S1)



DATE	BY	REFERENCES NOTED	REFERENCES CHECKED
2023	J. SANDERS		
2024	L. SMITH		

KANSAS DEPARTMENT OF TRANSPORTATION

FIELD ENTRANCE PLAN AND PROFILE

STA. 50+12.51 TO STA. 52+00.00

Sh. No. 9

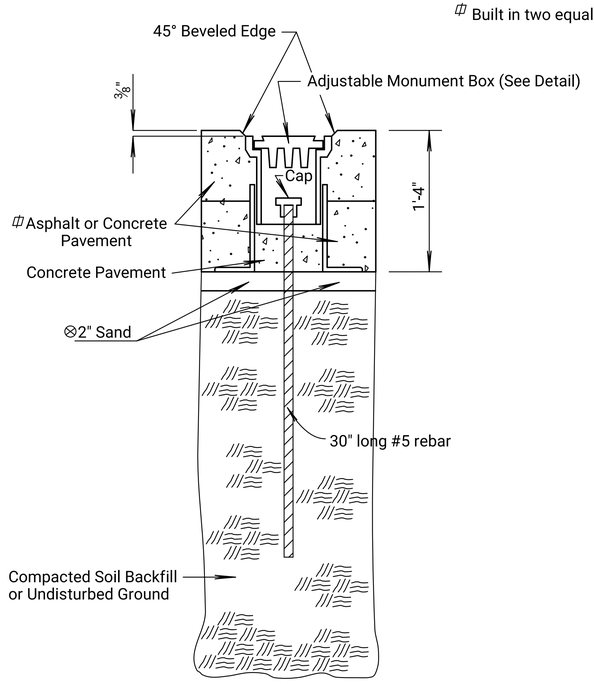
Plotted by : Jay.Sanders@ks.gov 24-APR-2025 15:29
File : ka647401rpp-02.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	10	101

EXHIBIT

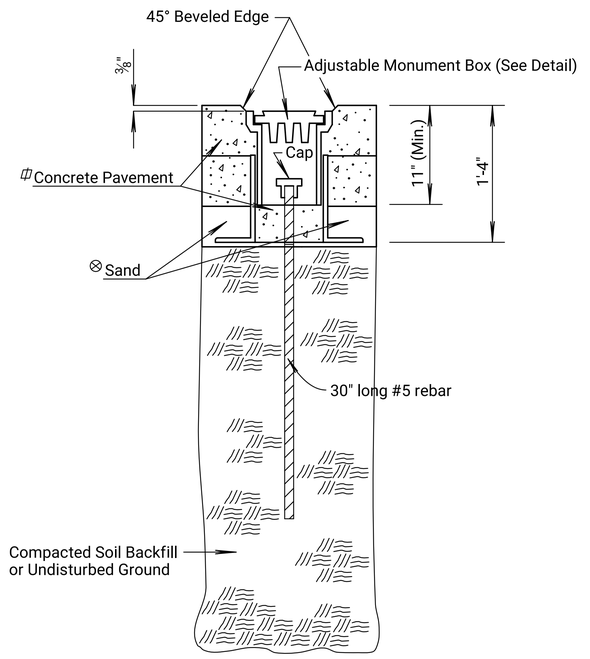
2" DIA. PRE-STAMPED ALUMINUM CAPS

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



TYPE A-1

(Standard Land Corner Monument Box)



TYPE A-2

(Standard Land Corner Monument Box)

GENERAL NOTES

Use the proper identification cap for the party installing the monument, as shown on the exhibit.

Make all stampings, forgings, and impressions legible. The stampings, forgings, and impressions will properly identify the location of the monument within the Public Land Survey System (PLSS).

A "System of Marking" is available in the current "Manual of SURVEYING INSTRUCTION", which is published by the United States Department of the Interior, Bureau of Land Management.

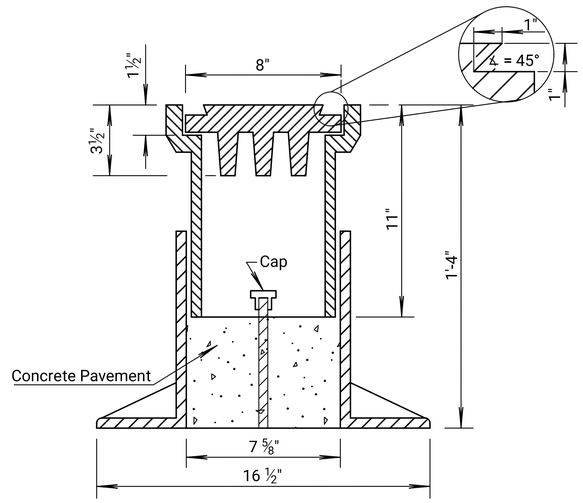
Reset all PLSS corners in accordance with KDOT's Standard Specifications.

In addition to monumentation of the PLSS corner, the Engineer may direct or select specific locations for offset monumentation, as shown.

Use Type A-1 or Type A-2 monuments as directed by the Surveyor or the Engineer.

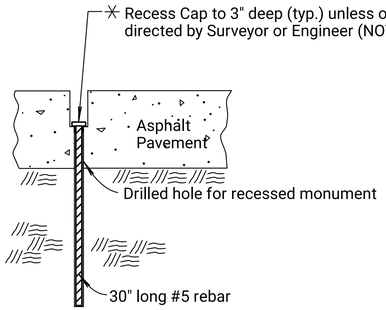
Type A monumentation may be used on a project as specified in the plans or as directed by the Engineer. Typically, Type A monuments are used on high traffic volume roadways, in urban areas, or as required by local governmental codes. Otherwise, use Types B-D monumentation. Avoid installing monument boxes in vehicle wheelpaths where practicable.

All work and materials required to install the Type A-1 and Type A-2 monument boxes will be paid under the bid item "Monument Box (Each)" and will be included in the plan quantities. All work and materials required to install Types B-D monumentation will be subsidiary to the bid item "Contractor Construction Staking (Lump Sum)". See KDOT's Standard Specifications for details.



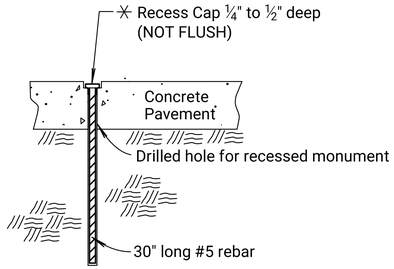
ADJUSTABLE MONUMENT BOX DETAIL

(Neenah R-1968 Type 36-B or approved equivalent)



Type B

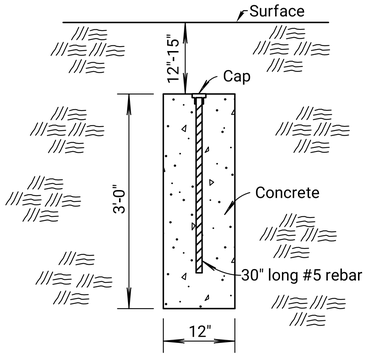
(Recessed Bar)



Type C

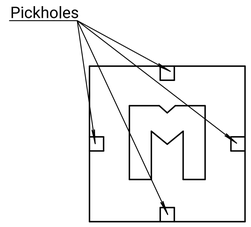
(Drilled Hole)

No Surface Monuments Allowed in Pavement



Type D

(Shoulder/Ditch Subsurface Monument)



MONUMENT BOX LID (PLAN VIEW)

Not to Scale

NO.	DATE	REVISIONS	BY	APP'D
04	08-24-18	Rev. Det. Mon. Box AND Rev. Gen. Note	A.L.R.	T.T.R.
03	01-15-16	Add. Det., Retrofit & Rev. Gen. Note	T.T.R.	S.W.K.
02	10-17-13	Revised Detail, Recessed Bar	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SECTION CORNER MONUMENTATION DETAIL SHEET

RD990

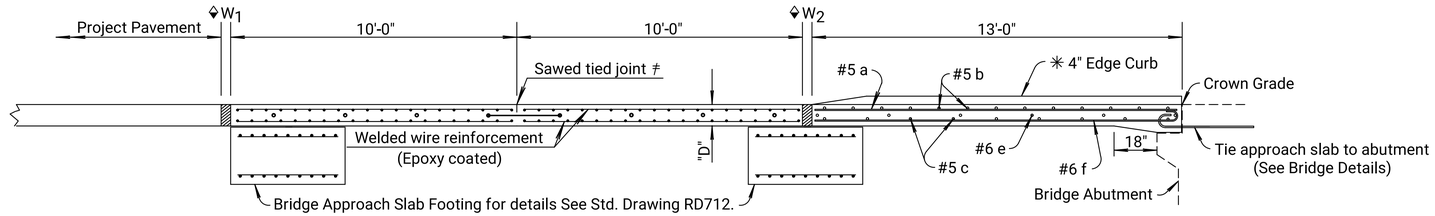
FHWA APPROVAL	08-07-19	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-18-2022 Sh. No. 10

KDOT Graphics Certified

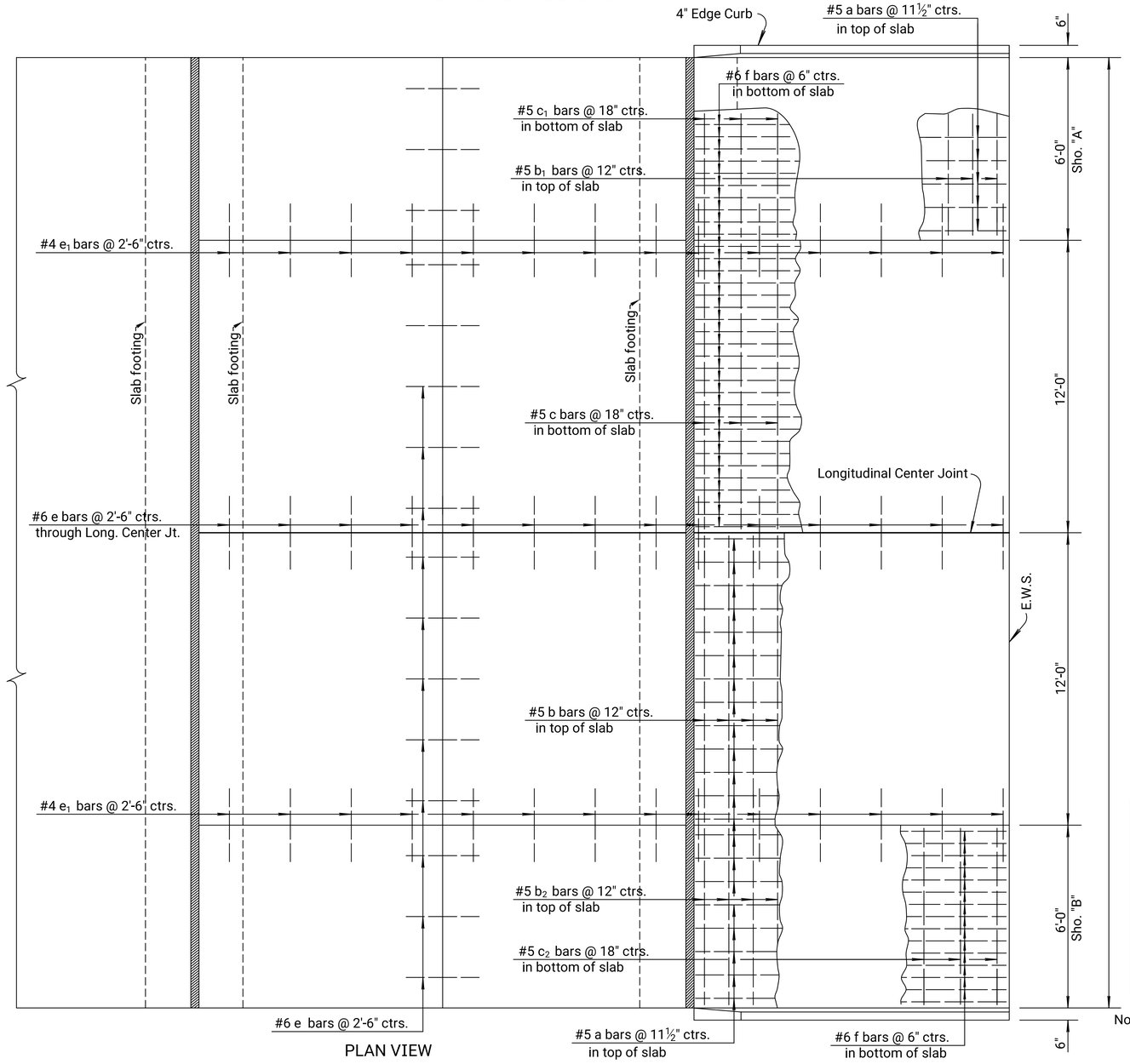
Plotted by : Jay.Sanders@ks.gov 23-APR-2025 23:30
File : rd990.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	11	101



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

LONGITUDINAL SECTION



PLAN VIEW

✳ For details of 4" Edge Curb, See Standard 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 (10" 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.

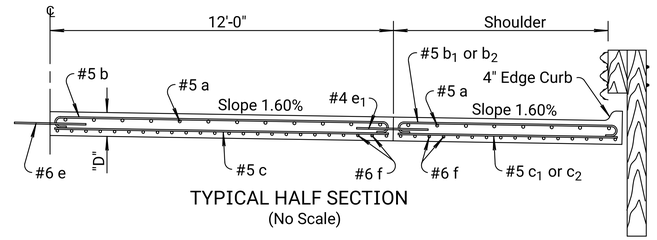
All reinforcing steel shall be epoxy coated.

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

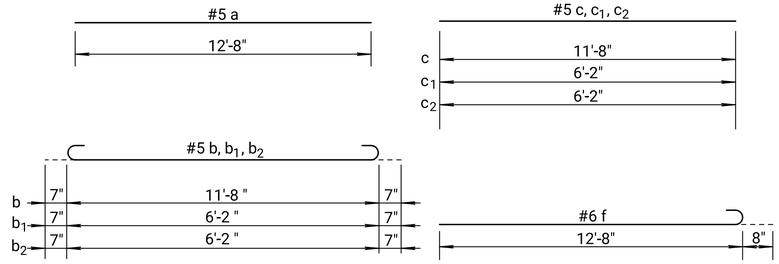
Clearance from the face of concrete for all reinforcing steel shall be 2 inches.

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

BILL OF MATERIALS

Bar Schedule

Bar	a	b	b_1	b_2	c	c_1	c_2	e	e_1	f	
No.	51	26	13	13	18	9	9	33	28	96	
Size	#5	#5	#5	#5	#5	#5	#5	#6	#4	#6	
Length	12'-8"	12'-10"	7'-4"	7'-4"	11'-8"	6'-2"	6'-2"	3'-0"	3'-0"	13'-4"	

Reinforcing Steel (Grade 60) (Epoxy Coated)	3079	lbs.
Concrete Pavement (10" Unif.)(AE)	133.4	Sq. Yds.
Expansion Jt. Membrane Sealant	36.0	Lin. Ft.
Pressure Relief Jt. Membrane Sealant	36.0	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
12	04-04-13	Rev. Exp./Pr. Relief Joint Dim.	S.W.K.	J.O.B.
11	09-09-09	Revised Reinforcing Steel listing	S.W.K.	J.O.B.
10	05-14-09	Revised pressure relief jt. material	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE APPROACH PAVEMENT NORMAL APPROACH

RD713

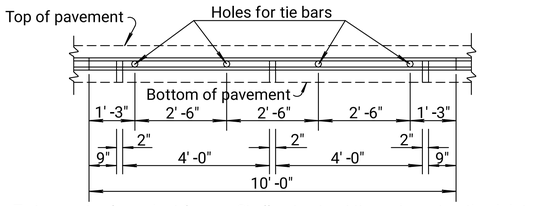
FHWA APPROVAL	05-21-13	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

Sh. No. 11

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.

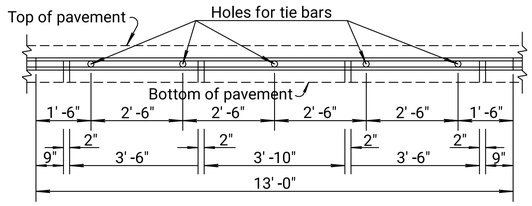
Plotted by : Jay.Sanders@ks.gov 10-JUL-2025 16:45
File : rd713.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	12	101



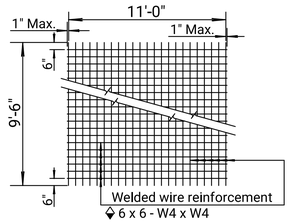
To be used only against forms. Shall not extend through contraction joints.

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



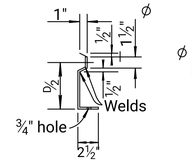
To be used only against forms. Shall not extend through contraction joints.

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

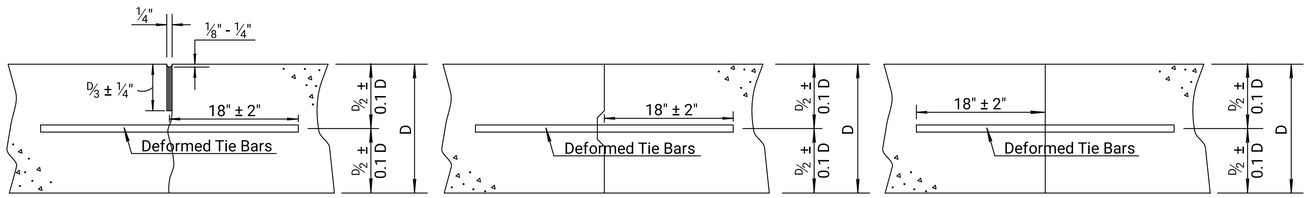
ϕ Snap-in leg or other approved designs may be used in lieu of welded leg.



DETAIL OF LAP FOR WELDED WIRE REINFORCEMENT

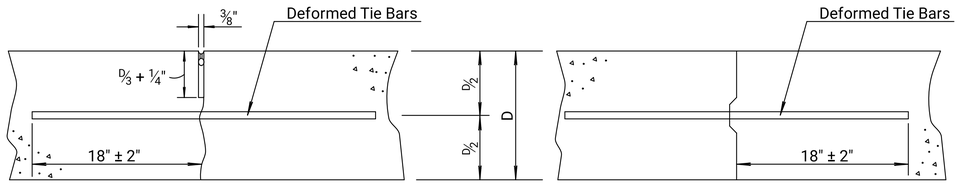
The lap shall extend beyond the first transverse or bag wire of each sheet.

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.



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.



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.

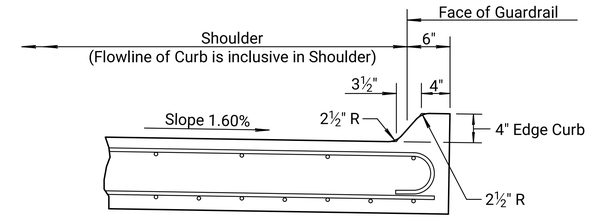
At each planned transverse joint location, a 4 to 6 inch wide strip of the pavement surface shall be protected from the texturing operation to provide a transverse textureless surface centered over the joint sawcut.

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

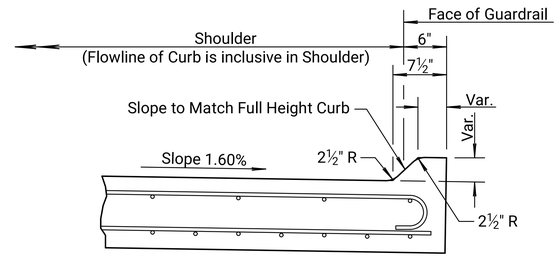
The 4 inch edge curb shall be constructed integral with the approach slab shoulder.

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.

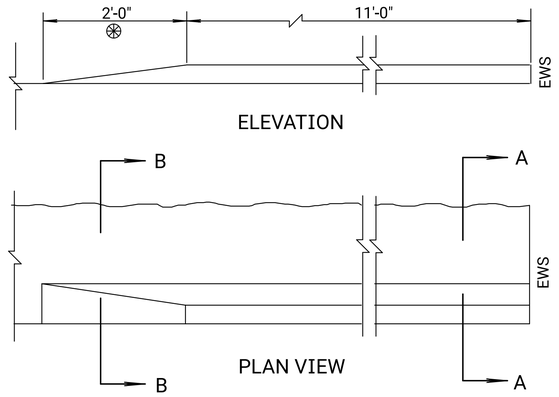


SECTION A-A



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.

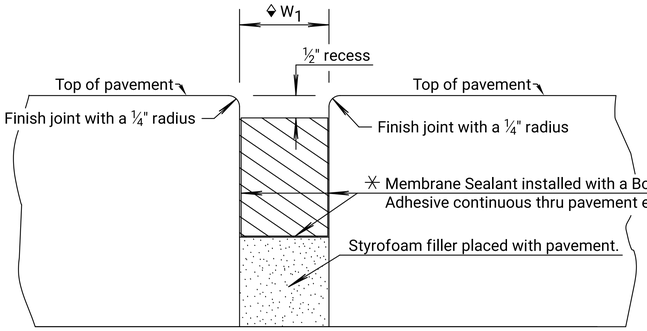
KDOT Graphics Certified 07-18-2022 Sh. No. 12

KDOT Graphics Certified

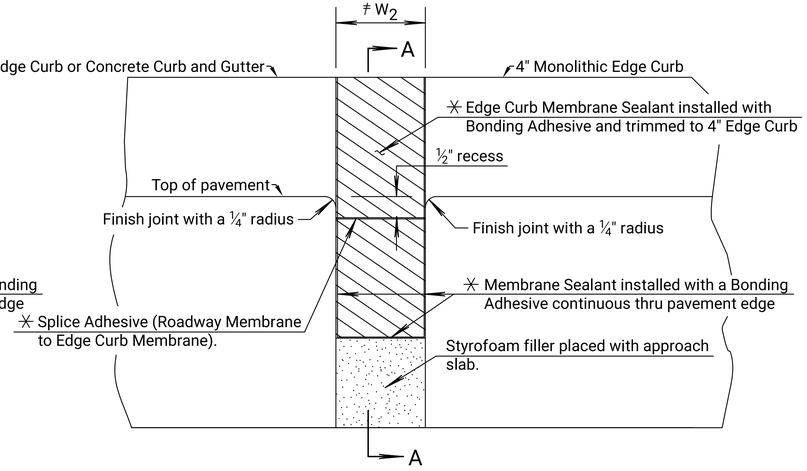
Plotted by : Jay.Sanders@ks.gov 23-APR-2025 23:31
File : rd711.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	13	101

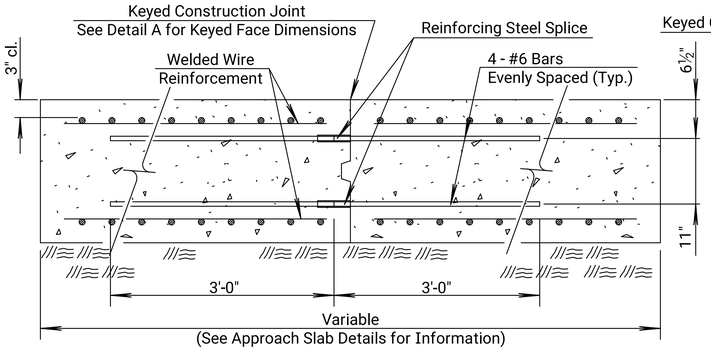
Note to Designer: For Membrane Sealant Expansion Joint on Non-skewed Bridges the maximum length of expansion is: 380' for Steel Bridges, 410' for Concrete Bridges.

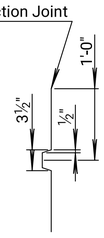


ELEVATION PRESSURE RELIEF JT.

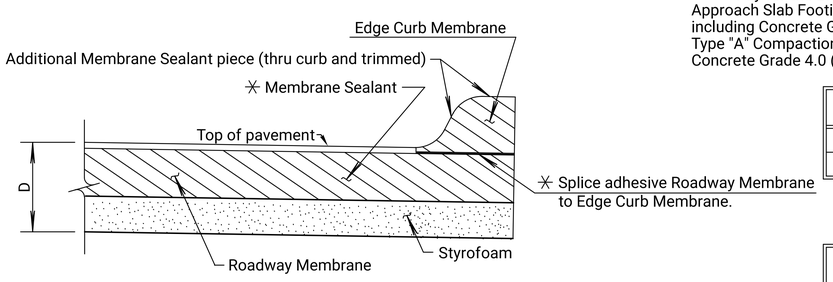


ELEVATION EXPANSION JT.





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 directly 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)

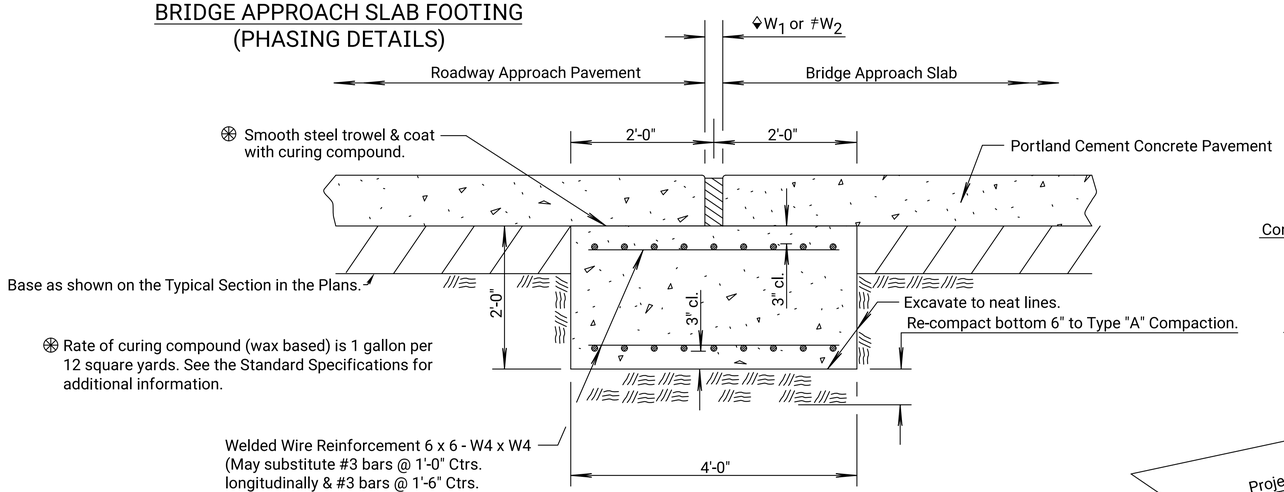
℉ Temperature (F°)	40°	50°	60°	70°	80°	90°	100°
Formed Concrete Opening Size	4.0"	3¾"	3½"	3¼"	3.0"	2¾"	2½"

℉ Average Ambient Temperature over previous 24 hours.

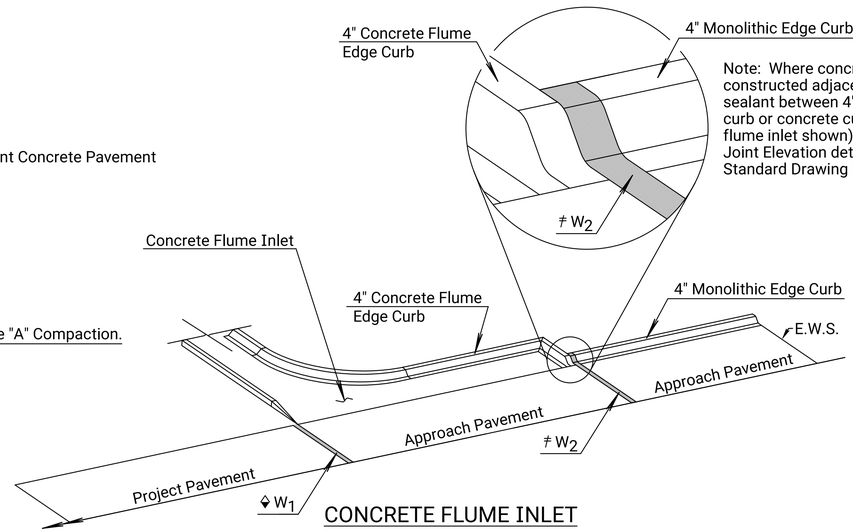
≠ EXPANSION JOINT WIDTH DETAILS (W_2)

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.

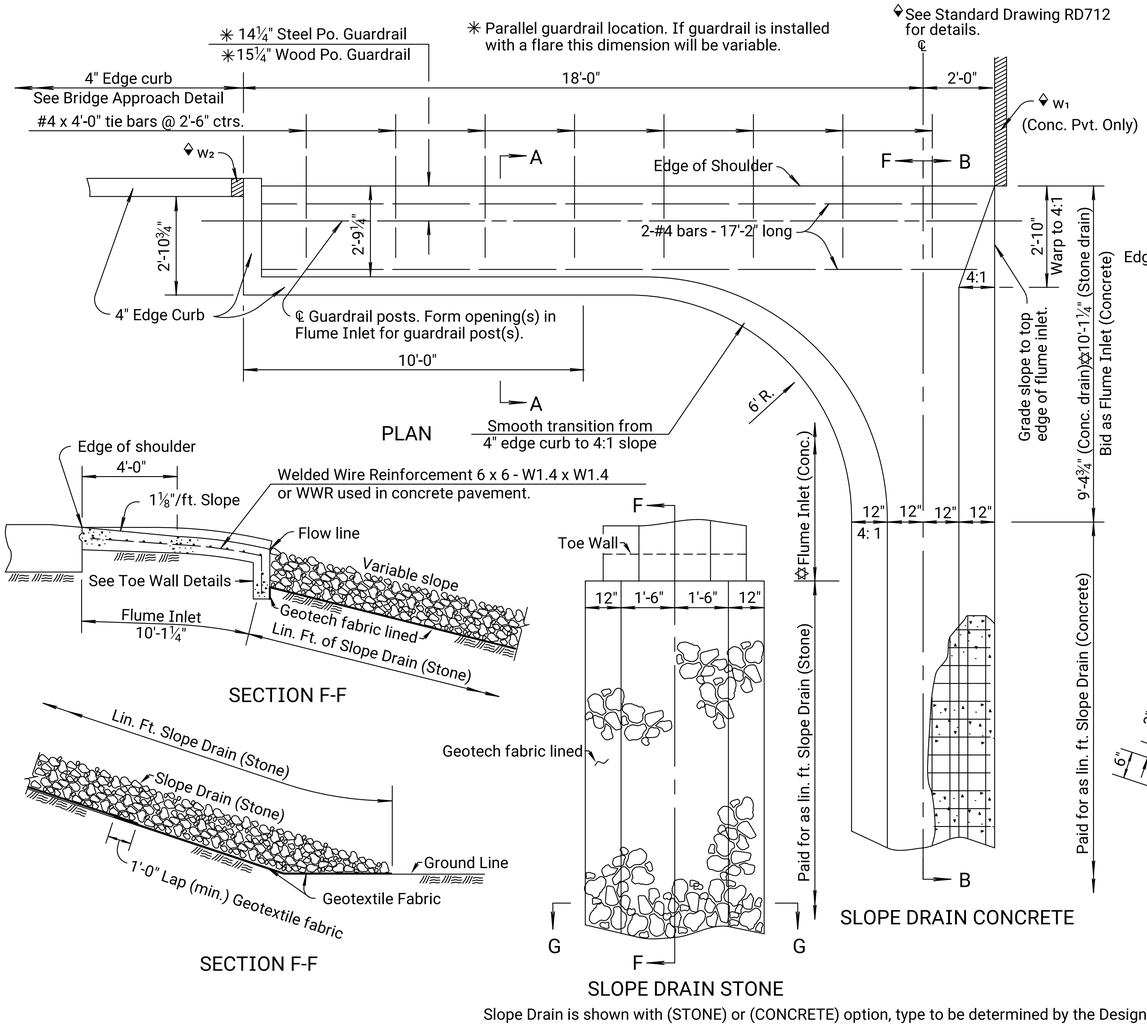
KDOT Graphics Certified 07-18-2022 Sh. No. 13

KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 23:31
File : rd712.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	14	101

Note to Designer: When concrete flume inlets are used on projects with asphalt pavment use a 33'-0" bridge approach.



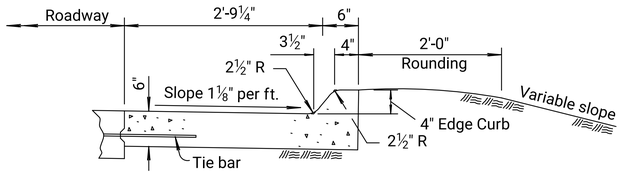
SECTION F-F

SECTION F-F

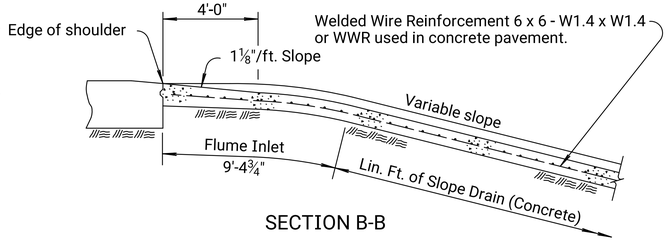
SLOPE DRAIN STONE

SLOPE DRAIN CONCRETE

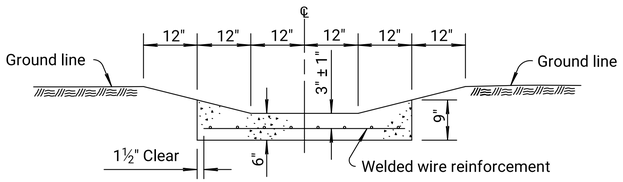
Slope Drain is shown with (STONE) or (CONCRETE) option, type to be determined by the Designer.



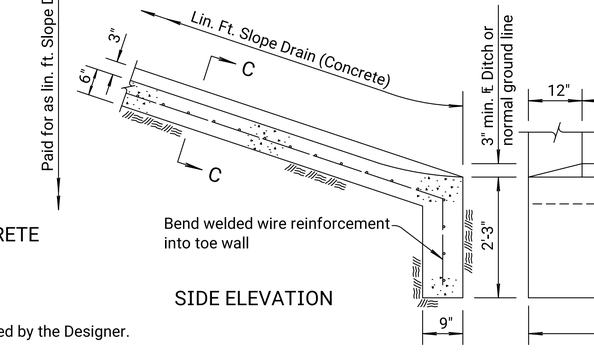
SECTION A-A



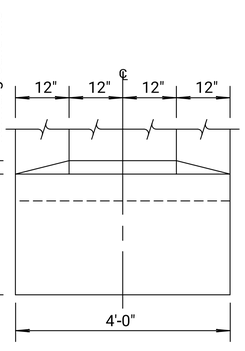
SECTION B-B



SECTION C-C



SIDE ELEVATION



END ELEVATION

SLOPE DRAIN & TOE WALL DETAILS

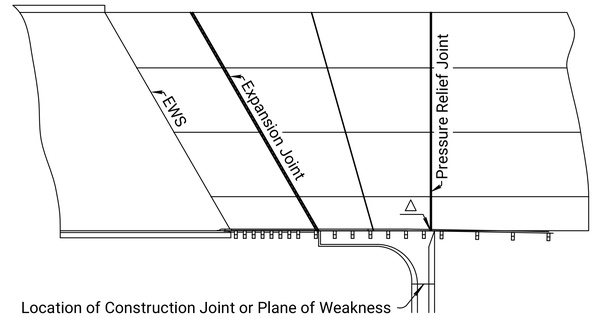
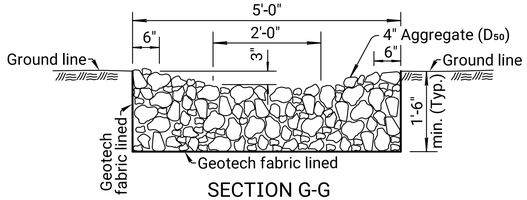
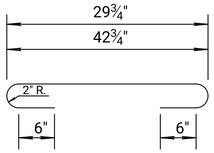


DIAGRAM of FLUME INLET at PRESSURE RELIEF JOINT

△ On projects with concrete paved shoulders where, due to skew of the bridge, the flume inlet extends beyond the 4" pressure relief joint of the special concrete bridge approach, the portion of inlet or gutter extending beyond the pressure relief joint shall not be tied to the concrete shoulder with tie bars.

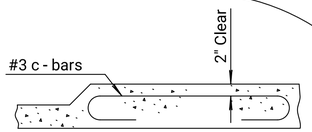


SECTION G-G

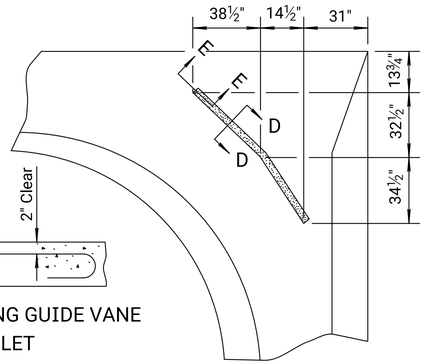


#3 c - bars

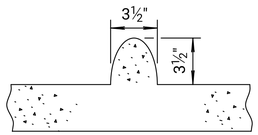
Bending Diagram
(Bend one bar each length)



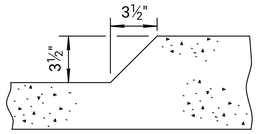
METHOD of CONNECTING GUIDE VANE to FLUME INLET



PARTIAL PLAN with GUIDE VANE



SECTION D-D
(Guide Vane formed monolithic)



SECTION E-E
(Typical both ends of vane)

GENERAL NOTE

Flume Inlets shall be paid for by unit price per each. Slope Drains (Stone or Concrete) shall be paid for by unit price per linear foot. Reinforcing steel & welded wire reinforcement are subsidiary to Flume Inlet and Slope Drain.

Flume Inlets will be constructed without Guide Vanes except at locations noted in plans or as directed by the Engineer. Construction of guide vanes, when required, shall be subsidiary to the bid item "Flume Inlet ".

The entire area of the Flume Inlet & Slope Drain shall be placed monolithic and struck off with a uniform thickness of 6 inches.

Guide Vanes may be formed monolithic with the Flume Inlet or tied to the Flume Inlet in the manner shown if constructed separately. Alternate methods of constructing Guide Vanes may be used with approval of the Engineer.

Concrete Grade 3.0 (AE) shall be used in Flume Inlet and Slope Drain.

On concrete pavement projects, the contractor may substitute the mix used in concrete pavement.

Transverse expansion and contraction joints of same type in pavement are to extend through the flume inlet and 4" edge curb, omitting load transfer devices. The edge curb section will be made continuous through any expansion joint by using a filler material approved by the Engineer to fill the void to the full height of the curb.

Joints will not extend into the Slope Drain.

All exposed edges shall be finished with an edging tool.

For details of 4" edge curb see Standard Drawing RD711.

No adjustment of guardrail post spacing will be permitted.

Flume inlet shall only be constructed adjacent to concrete pavement. Flume inlet shall be tied to the pavement with #4 x 4'-0" tie bars at 2'-6" centers. Tie bars shall be subsidiary to the Flume Inlet.

Shape of guide vane shown is approximate and may be altered slightly to simplify construction. Height and width dimension shall be as shown regardless of shape.

Aggregate for the Slope Drain (STONE) shall meet the reqirements of stone for Aggregate Ditch Lining and have a D_{50} of 4" unless otherwise noted on the plans. The Contractor shall place stone from bottom to the top of slope to produce a well graded mass without segregation of material sizes. Placement, measurement, and payment shall conform to KDOT Standard Specifications.

Slope Drain (STONE) shall be underlain with geotextile fabric that meets the KDOT Standard Specification. All work and materials for the geotextile fabric shall be subsidiary to the Slope Drain (STONE).

QUANTITIES (For information only)

SLOPE DRAIN (CONCRETE)

Flume Inlet Concrete:
1.9 cu. yds. Concrete ⊛
42 lbs. reinf. steel and WWR
Slope Drain (CONCRETE):
0.0833 cu. yds. Concrete per lin. ft.
0.79 lbs. WWR per lin. ft.
Toe wall shall be paid for as 1.5 lin. ft. of Slope drain.

SLOPE DRAIN (STONE)

Flume Inlet & Toe Wall Concrete:
2.2 cu. yds. Concrete ⊛
44 lbs. reinf. steel and WWR
Slope Drain (STONE): 4" Aggregate (D50)
0.25 cu. yds. 4" Agg. (D50) per lin. ft.
0.90 sq. yds. Geotextile fabric per lin. ft.

⊛ Does not include guide vanes.

NO.	DATE	REVISIONS	BY	APP'D
06	01-25-16	Added Note to Designer	T.T.R.	S.W.K.
05	09-12-07	Reorg. sheet, add. slope drain stone	S.W.K.	J.O.B.
04	01-28-05	Chg. Class to Grade conc., reinf.	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

FLUME INLET and SLOPE DRAIN (CONCRETE/STONE)

RD628

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

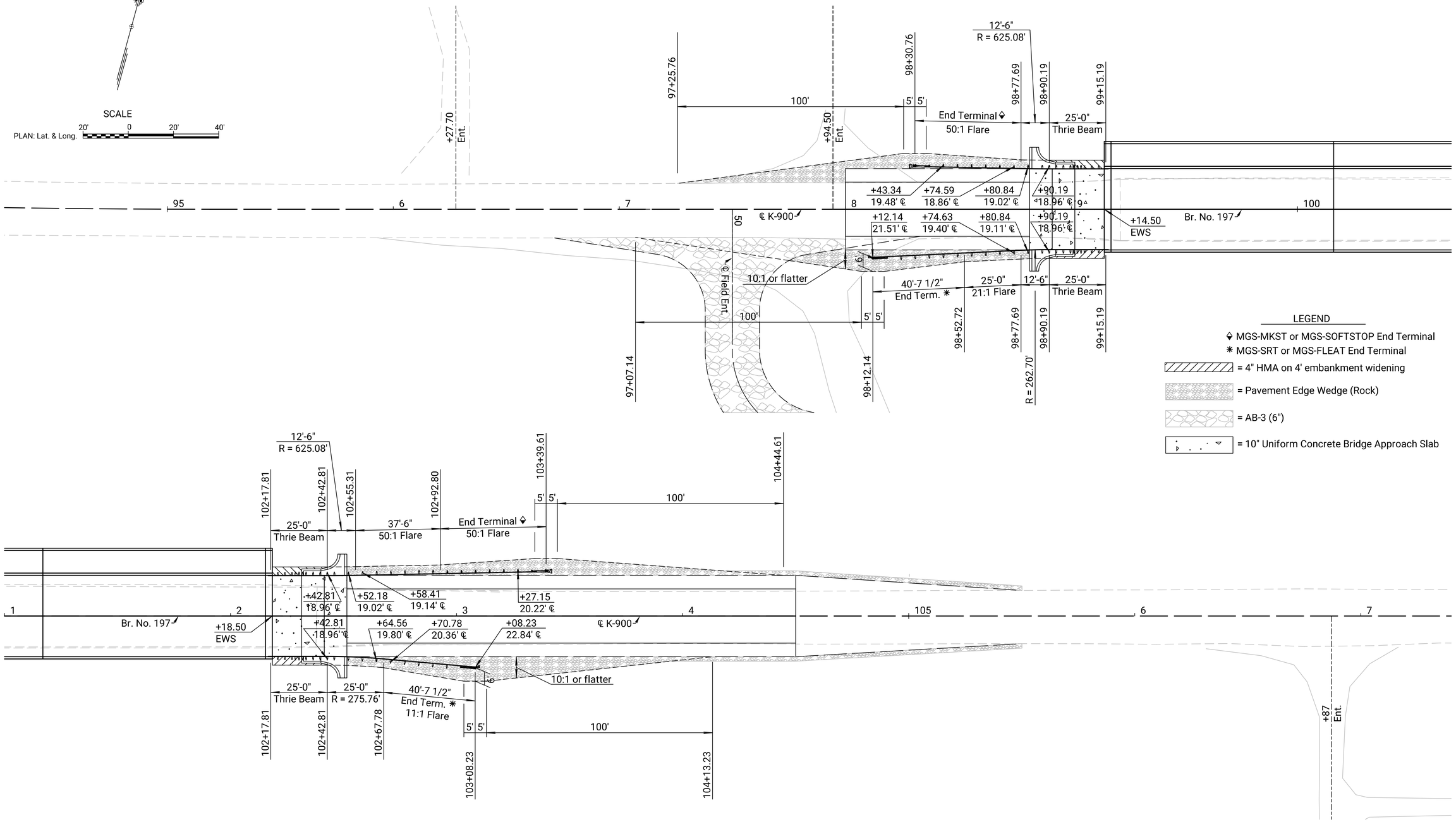
KDOT Graphics Certified 05-13-2022 Sh. No. 14

KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:51
File : rd628.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	15	101

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



LEGEND

⧫ MGS-MKST or MGS-SOFTSTOP End Terminal
✳ MGS-SRT or MGS-FLEAT End Terminal
= 4" HMA on 4' embankment widening
= Pavement Edge Wedge (Rock)
= AB-3 (6")
= 10" Uniform Concrete Bridge Approach Slab

KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL LAYOUT

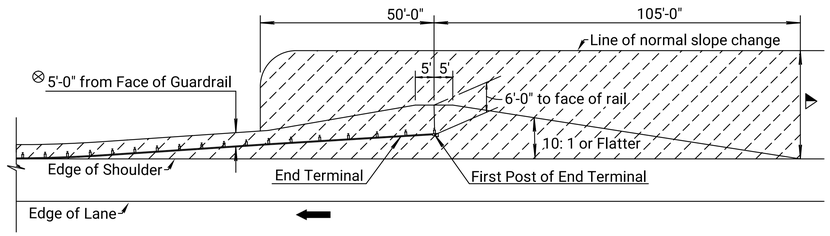
DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted by : Jay.Sanders@ks.gov 17-JUL-2025 16:39
File : ka647401rgr-01.dgn

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.



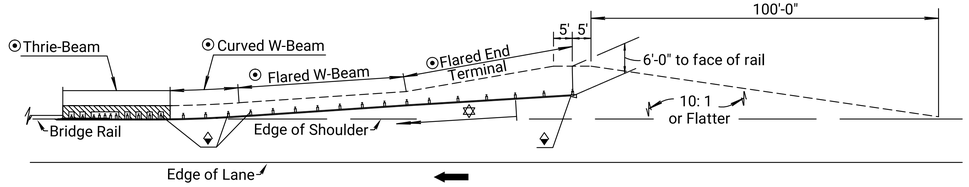
Keep Area Free of Stockpiled Material, Equipment, or Other Obstacles, Such as Temporary Signs, Regardless of Crash Worthiness. This Clear Area Extends 105 Feet in Advance of and 50 Feet behind the First Post of the Guardrail End Terminal and Then, in Order to Maintain Full Post Spacing, Continues 5 Feet 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

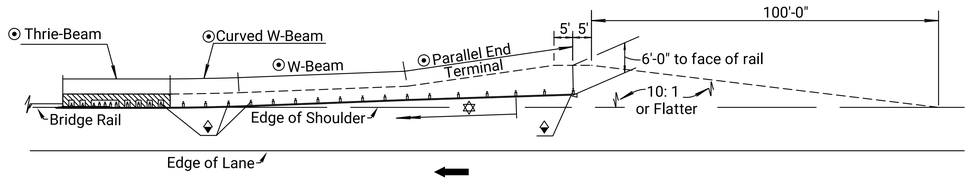
FLARED GUARDRAIL DETAIL

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	900-8 KA-6474-01	2025	16	101

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.

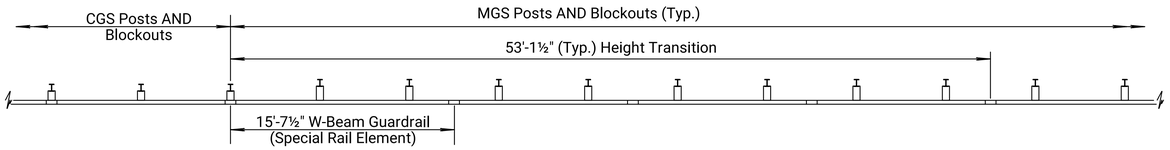
Lap w-beam and thrie-beam guardrail splices, in the direction of permanent traffic, even where temporary traffic may be carried in the opposite direction of the final traffic configuration. Lap end terminal splices per the Manufacturer's Installation Manual in the direction of permanent traffic, even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

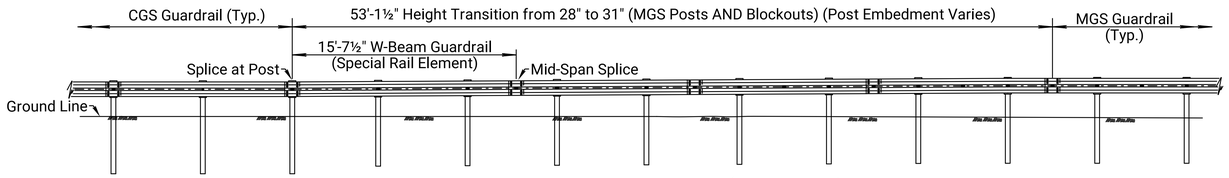
Where pavement with a thickness less than or equal to 8" is encountered during installation, use the details shown on KDOT's 'Guardrail Post Details' Standard Drawings to provide openings in the pavement for the guardrail posts. Where pavement with a thickness greater than 8" or geologic rock is encountered 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.

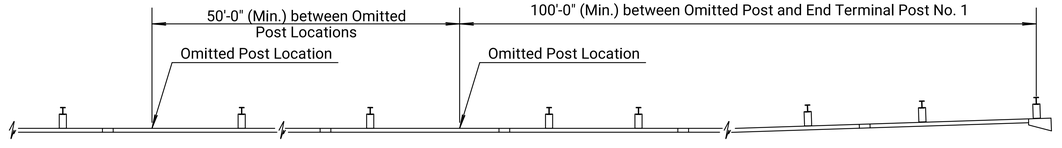
All work and materials required for guardrail end terminal installations are paid for under the bid item for the selected guardrail end terminal. See the table on this sheet for the appropriate end terminal bid item information.



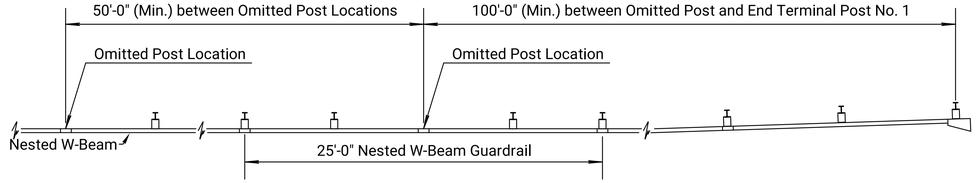
CGS TO MGS TRANSITION DETAILS (PLAN)



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	Valtir	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	Valtir	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	Valtir	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.

CADconform Certify This File

Sh. No. 16

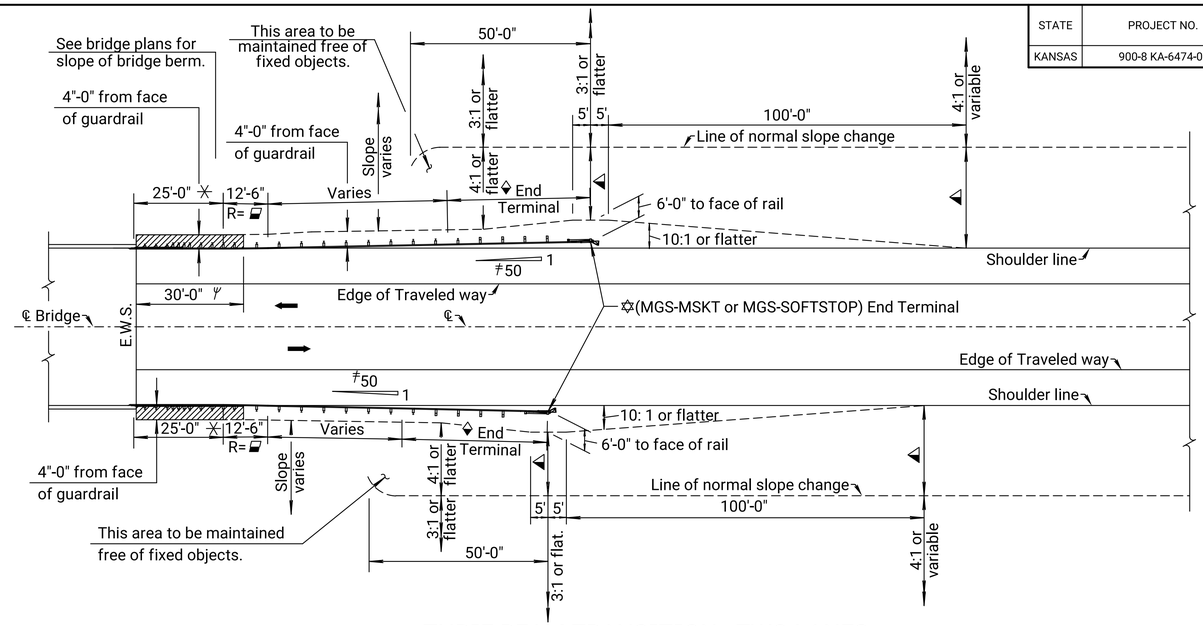
Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:50
File : rd606.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	17	101

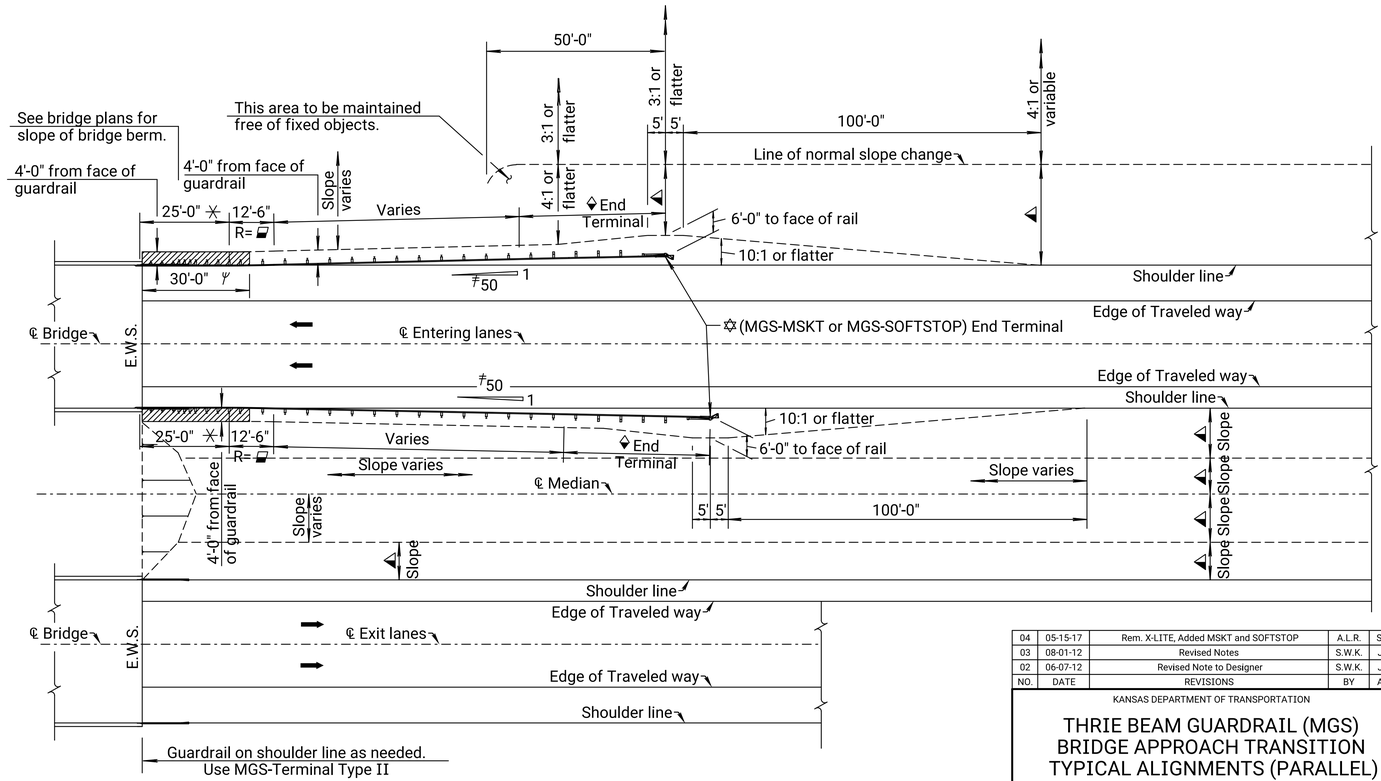
Notes to Designer: Determine the guardrail length of need using either KDOT's Length of Need Equation or a graphic design approach with an L_R distance measured from the edge of the area of concern to the P.I. of the curved guardrail section. Combine material for asphalt widening in the plan quantities.

"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



THRIE BEAM TRANSITION - FOUR LANES (DIVIDED)

NO.	DATE	REVISIONS	BY	APP'D
04	05-15-17	Rem. X-LITE, Added MSKT and SOFTSTOP	A.L.R.	S.W.K.
03	08-01-12	Revised Notes	S.W.K.	J.O.B.
02	06-07-12	Revised Note to Designer	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

THRIE BEAM GUARDRAIL (MGS) BRIDGE APPROACH TRANSITION TYPICAL ALIGNMENTS (PARALLEL)

RD612B

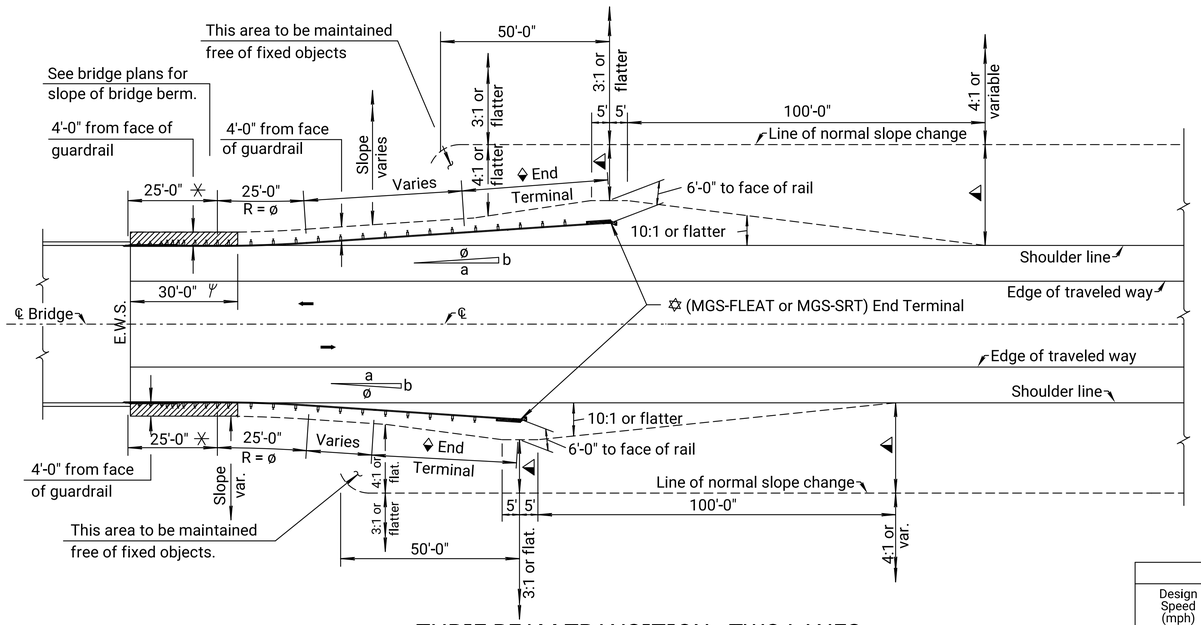
FHWA APPROVAL	10-12-17	APP'D.	Scott. W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-16-2022 Sh. No. 17

KDOT Graphics Certified

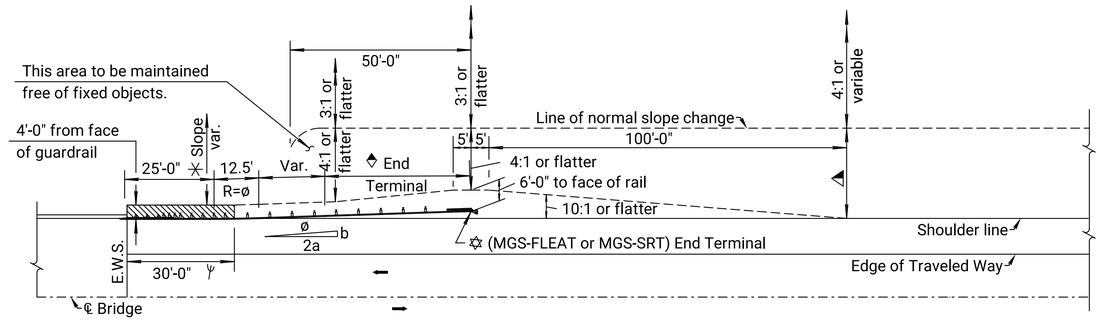
Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:50
File : rd612b.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	18	101



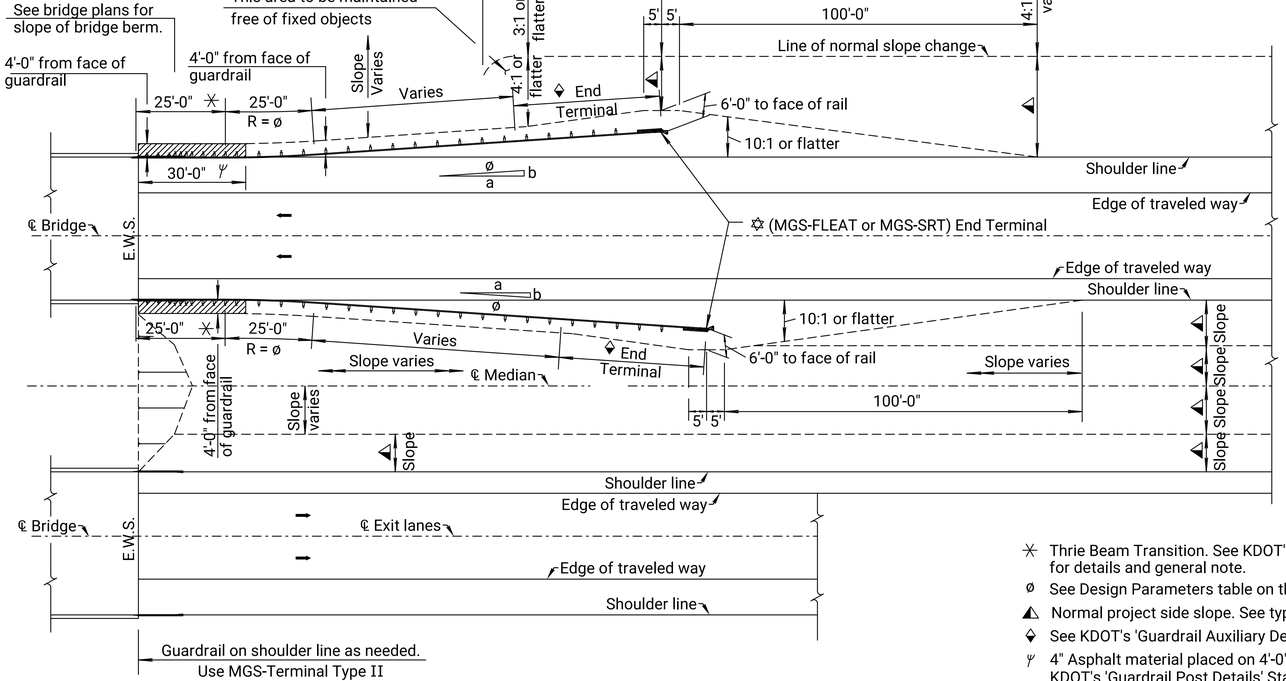
THRIE BEAM TRANSITION - TWO LANES

Note: Use flare rate of a:b and curve length of 25'-0" when guardrail is beyond shyline. Use flare rate of 2a:b and curve length of 12'-6" when guardrail is located inside the shy line.



ALTERNATE TREATMENT - TWO LANES (Flare Rate = 2a:b)

DESIGN PARAMETERS				
Design Speed (mph)	Flare Rate (a:b)	Radius (R)	Flare Rate (2a:b)	Radius (R)
70	15:1	375.55'	30:1	375.14'
60	14:1	350.59'	26:1	325.16'
55	12:1	300.69'	24:1	300.17'
50	11:1	275.76'	21:1	262.70'
45	10:1	250.83'	18:1	225.23'
40	8:1	201.04'	16:1	200.26'



THRIE BEAM TRANSITION - FOUR LANES (DIVIDED)

- Thrie Beam Transition. See KDOT's 'Thrie Beam Guardrail Transition Details' Standard Drawings for details and general note.
- ø See Design Parameters table on this sheet for radius, length of curve and flare rate information.
- 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 KDOT's 'Guardrail Post Details' Standard Drawings for "Post in Pavement" details.
- The minimum length of w-beam guardrail required between the guardrail end terminal and any transition section, including the thrie-beam transition, is 12'-6".

Notes to Designer: Determine guardrail length of need using either KDOT's Length of Need Equation or a graphic design approach with an L_1 distance measured from the edge of the area of concern to the P.I. of the curved guardrail section. Combine materials for asphalt widening in the plan quantities.

Optional: If approach side is within the shyline, use a flare rate of 2a:b for all quadrants.

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:51
File : rd612c.dgn

NO.	DATE	REVISIONS	BY	APP'D
04	06-05-18	Removed Flare-beyong-the-Flare	A.L.R.	T.T.R.
03	05-15-17	Removed X-LITE	A.L.R.	S.W.K.
02	06-07-12	Revised Note to Designer	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

THRIE BEAM GUARDRAIL (MGS) BRIDGE APPROACH TRANSITION TYPICAL ALIGNMENTS (FLARED)

RD612C

FHWA APPROVAL	06-19-18	APP'D.	Scott. W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

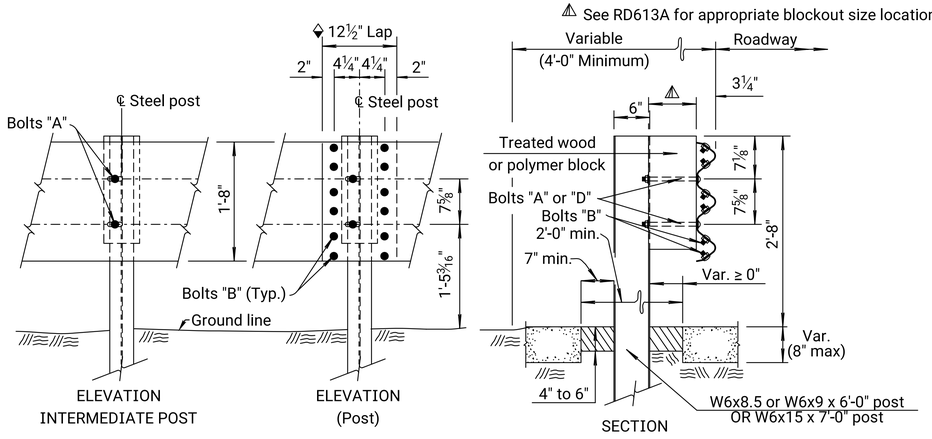
KDOT Graphics Certified 08-21-2022 Sh. No. 18

KDOT Graphics Certified

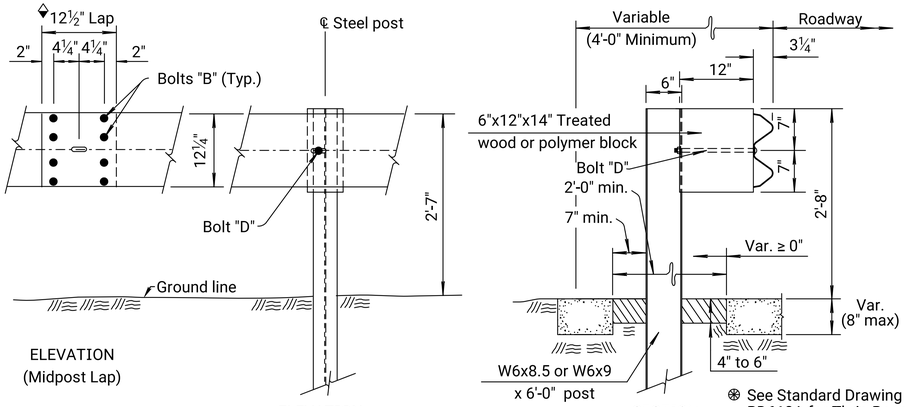
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	19	101

♦ 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

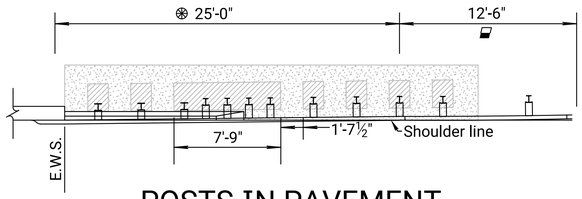


✻ See Standard Drawing RD613A for Thrie-Beam Transition Section Blockout hole pattern.

✡ Non-Metallic (Polymer) or Treated Wood Block

See Guardrail Layout Sheets for Details.

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



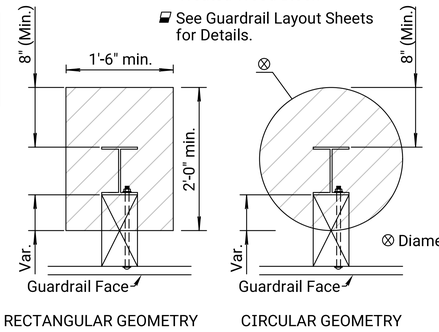
POSTS IN PAVEMENT

(Not to Scale)

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

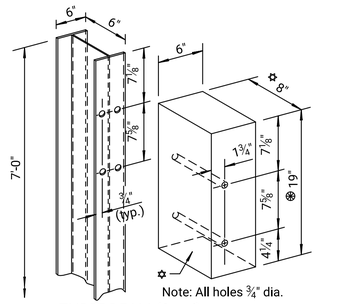
☐ Pavement (Concrete or Asphalt)

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.

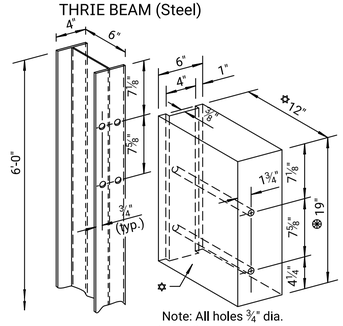


⊗ Diameter may vary from 1'-6" (min.) to 2'-0".

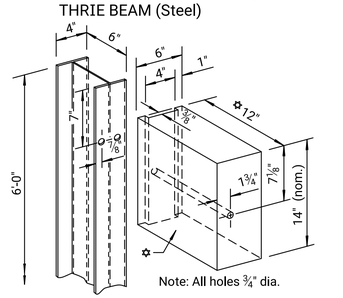
PLAN
(ALTERNATE GEOMETRIES)



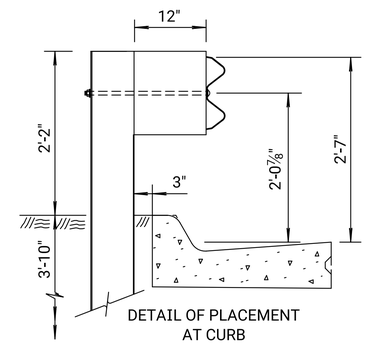
THRIE BEAM (Steel)



THRIE BEAM (Steel)



"W" BEAM (Steel)



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.

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.

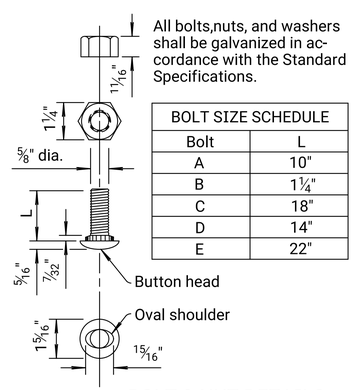
Wood blockouts may be used through the 25'-0" thrie-beam section with wood or polymer blockouts used throughout the remainder of the w-beam installation. The blockout size and material used in the guardrail end terminal may be independent from the remainder of the installation. For wood/polymer blockout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



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

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. 19

KDOT Graphics Certified

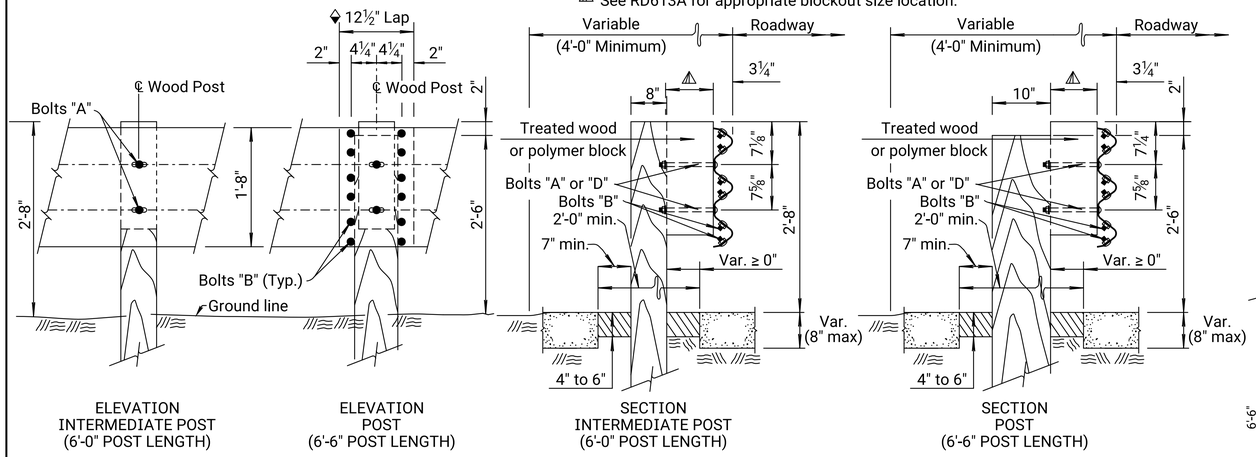
Notes to Designer: For posts installed in pavement thicker than 8" or posts installed in rock formations refer to AASHTO's Roadside Design Guide for details then revise this drawing and all supporting drawings appropriately.

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:51
File : rd611a.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	20	101

◈ 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)

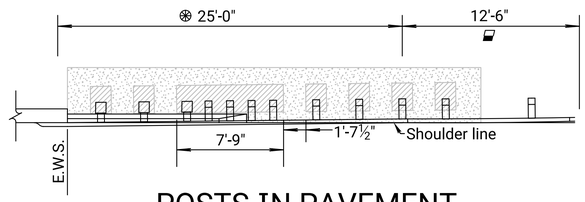
SECTION

⊛ 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



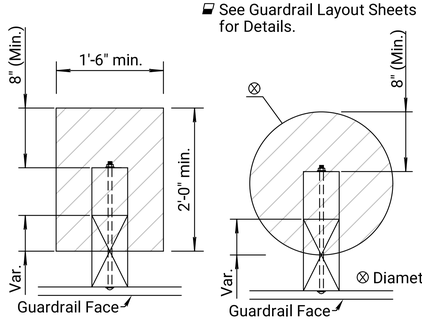
POSTS IN PAVEMENT

(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.

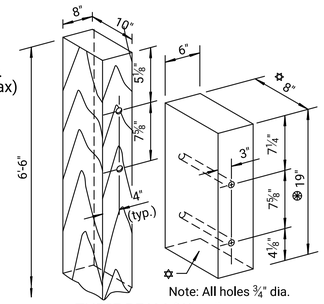


RECTANGULAR GEOMETRY

CIRCULAR GEOMETRY

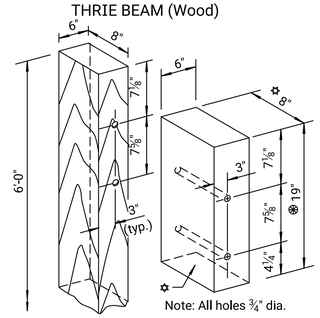
⊗ Diameter may vary from 1'-6" (min.) to 2'-0".

PLAN
(ALTERNATE GEOMETRIES)



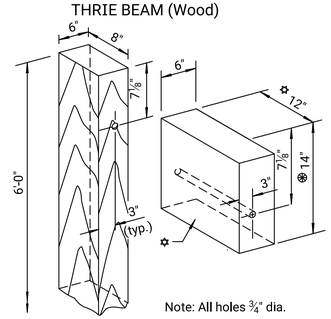
Note: All holes ¾" dia.

THRIE BEAM (Wood)



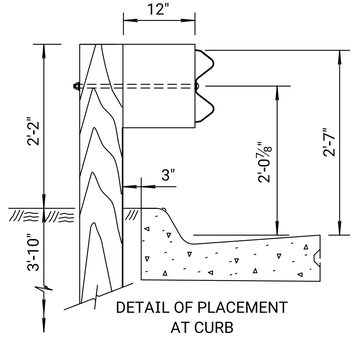
Note: All holes ¾" dia.

THRIE BEAM (Wood)



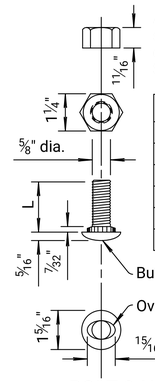
Note: All holes ¾" dia.

"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.

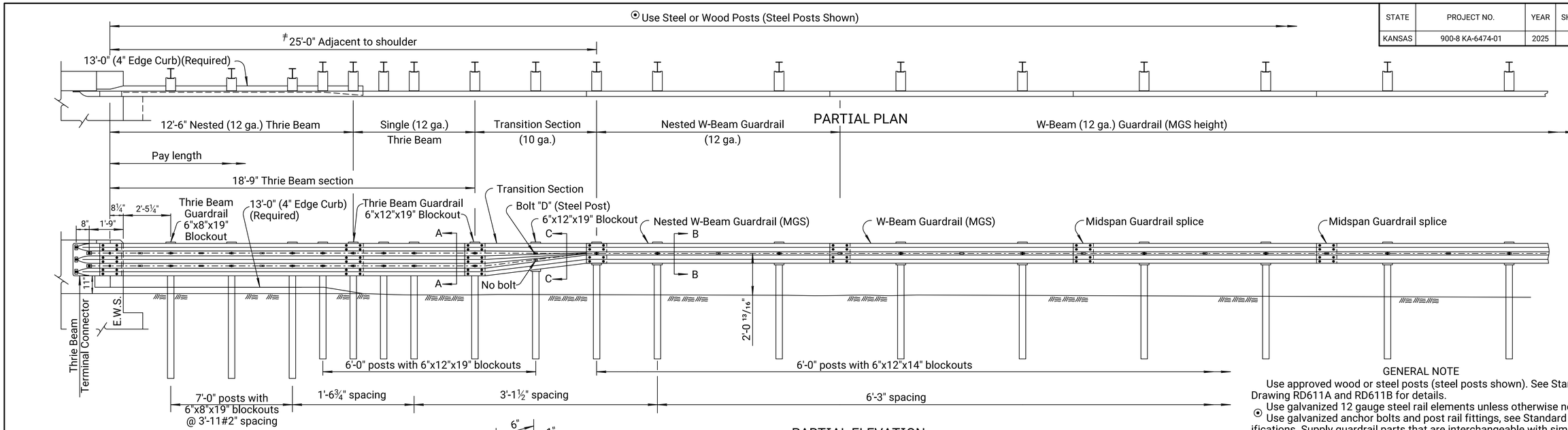
KDOT Graphics Certified 05-11-2022 Sh. No. 20

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.

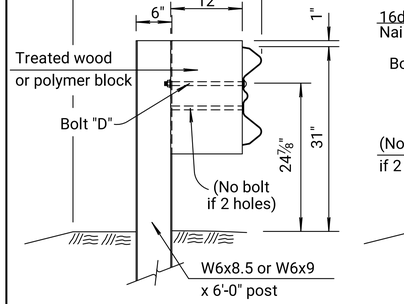
Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:51
File : rd611b.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	21	101

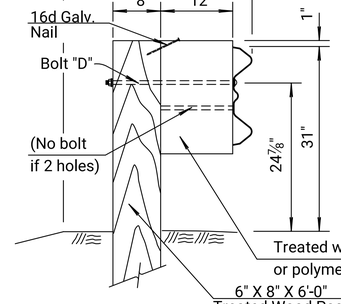


PARTIAL PLAN

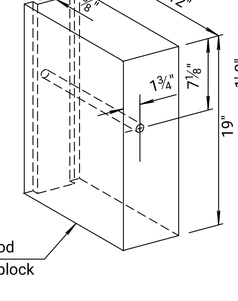
PARTIAL ELEVATION



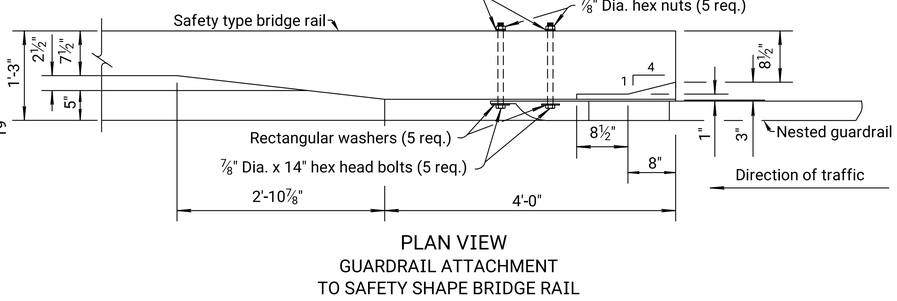
⊙ SECTION C-C (STEEL POST)



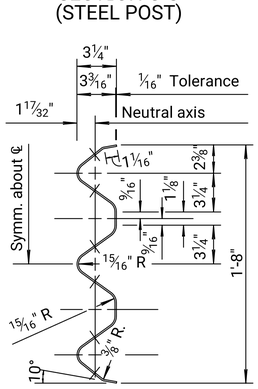
⊙ SECTION C-C (WOOD POST)



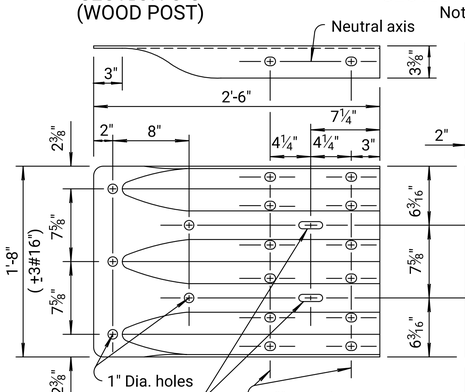
SECTION C-C (BLOCKOUTS)
Note: All holes ¾" dia.



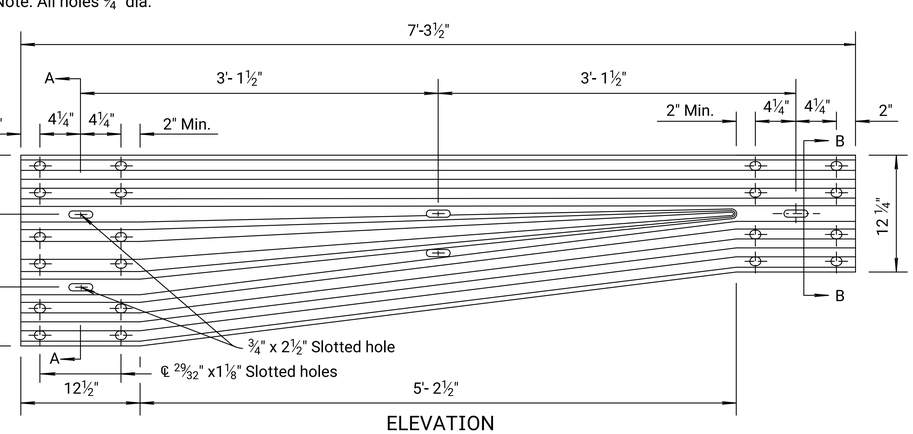
PLAN VIEW
GUARDRAIL ATTACHMENT
TO SAFETY SHAPE BRIDGE RAIL



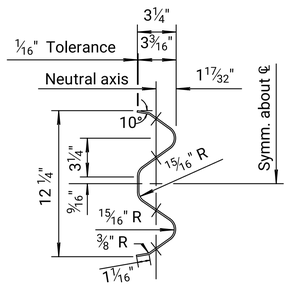
SECTION A-A
THRU RAIL ELEMENT
TYPICAL THRIE BEAM



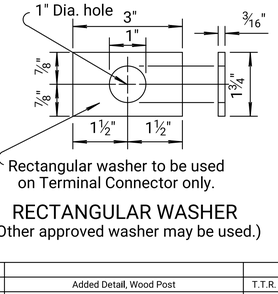
TERMINAL CONNECTOR
⊛ Optional 29/32" x 1¾" Slotted holes Rotated 50° (Typical) (12 req'd.)



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.)

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)".

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

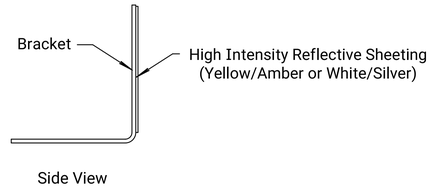
FHWA APPROVAL	04-21-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 11-18-2022 Sh. No. 21

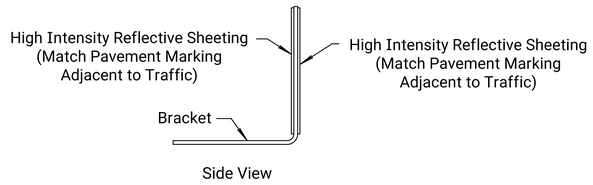
KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:51
File : rd613a.dgn

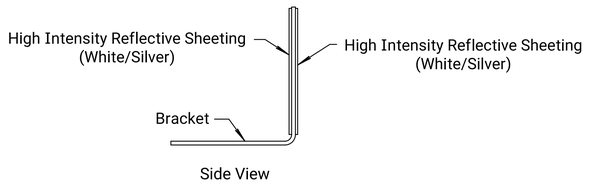
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	22	101



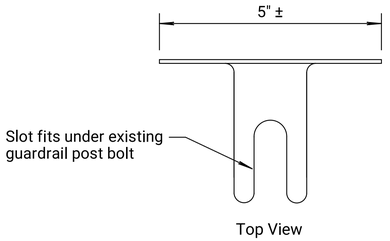
Flexible Marker
One-Way Traffic

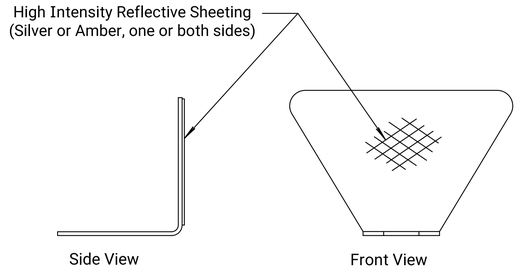


Flexible Marker
Median Locations



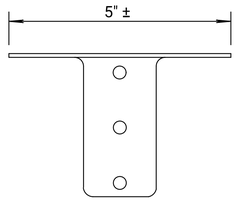
Flexible Marker
Two-Way Traffic



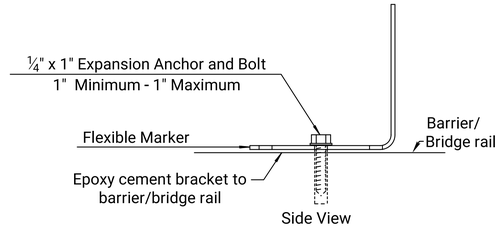


Flexible Guardrail Marker

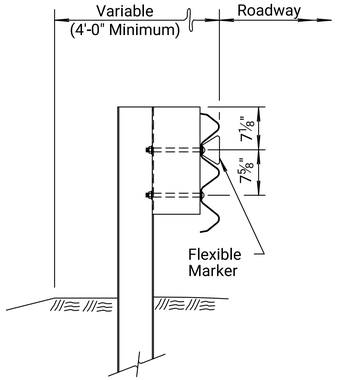
(High Impact Polycarbonate approx. .085" thick, 5¼" x 3")



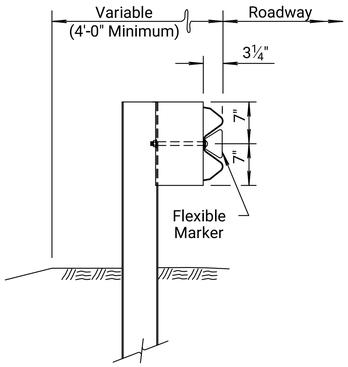
Barrier/Bridge Rail



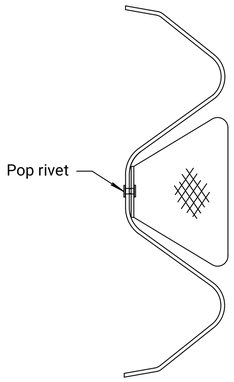
Method of Attaching Flexible
Marker to Barrier/Bridge Rail



THRIE-BEAM GUARDRAIL

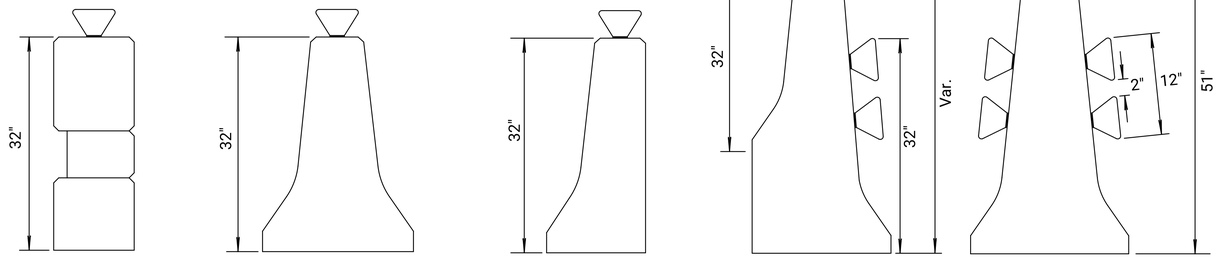


W-BEAM GUARDRAIL



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

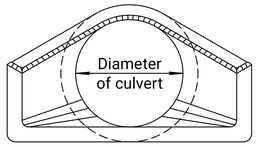
FHWA APPROVAL	03-15-18	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-11-2022 Sh. No. 22

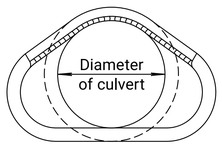
KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:50
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	23	101

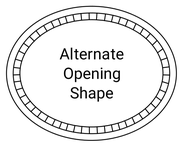


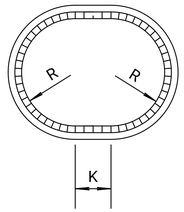
END ELEVATION (TYPE I)



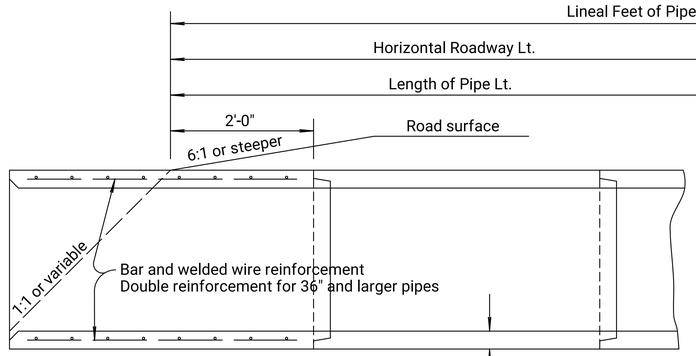
SECTION A-A

Showing rounding of inside edge of end section.

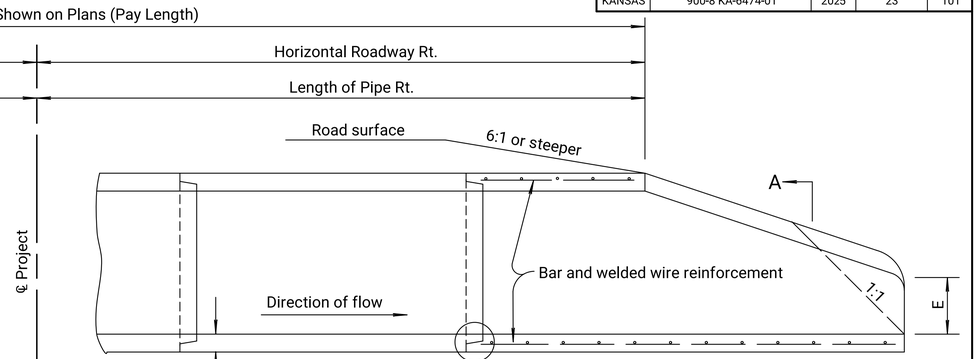




END ELEVATION
(TYPE III)



INLET END

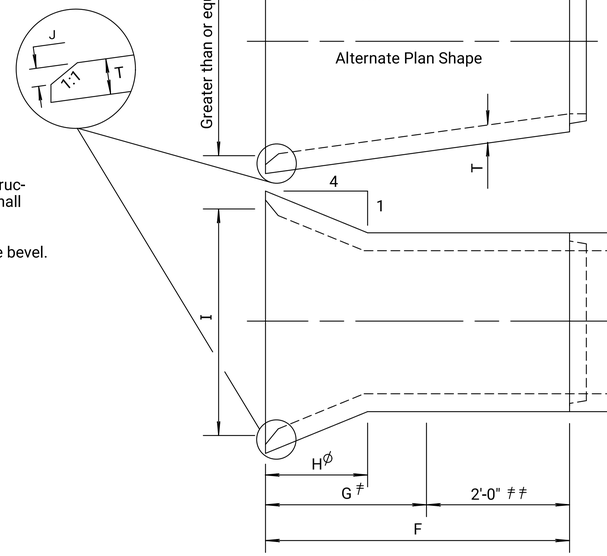


OUTLET END



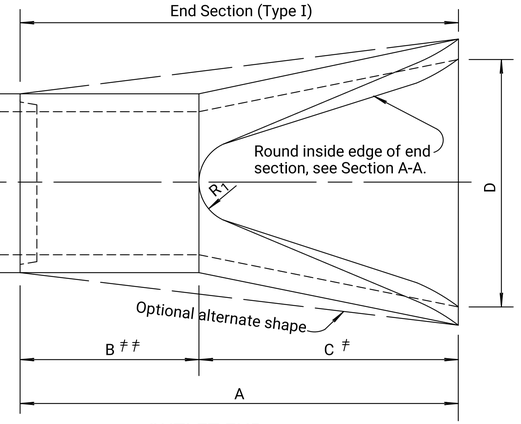
ELEVATION SECTION

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.

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.

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:54
File : rd662.dgn

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. 23

KDOT Graphics Certified

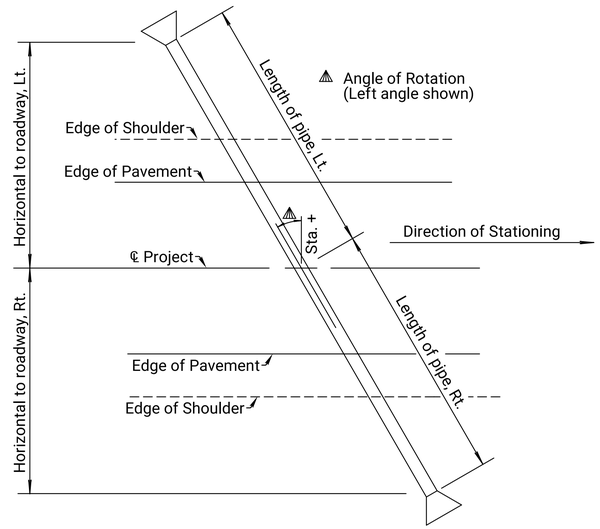
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	24	101

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
For Drainage Structures, See Sh. No. 52																				

◔ 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					
PEP					
PPP					
SRPE					
CSP					
ACSP					
CAP					
RCP			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.

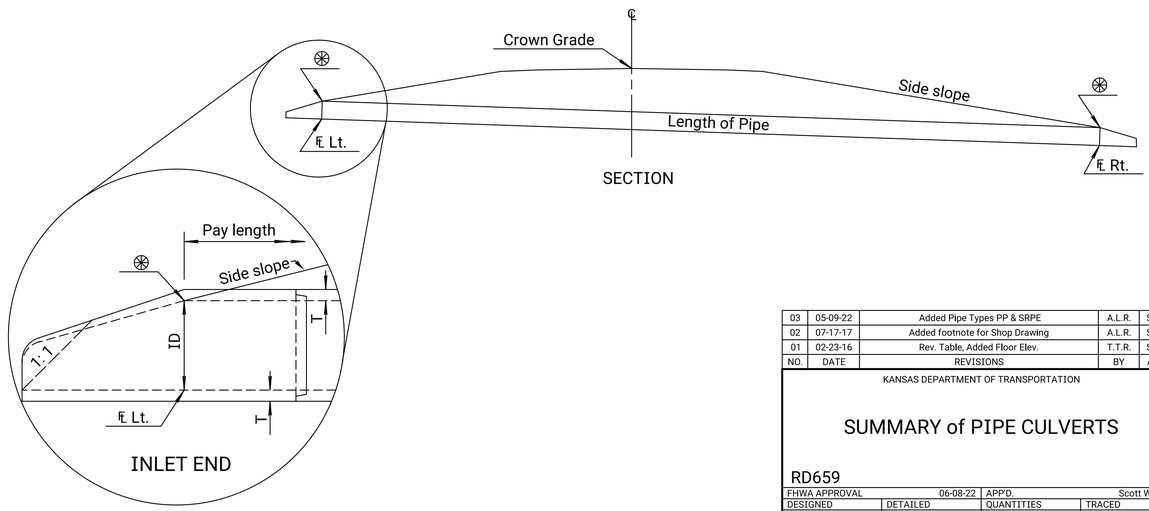
For inside diameter: ≥ 30"

Type	ALLOWABLE END SECTIONS ◆ CS	◆ ACS	CA	RC
PVCP				Ψ
PEP				
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.

Sh. No. 24

Note to Designer:
KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, PPP SRPE, 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.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	25	101

SUMMARY OF QUANTITIES

Item / Location	Excavation Class I Cu. Yds.	Excavation Class II Cu. Yds.	Concrete Grade 4.0 (AE)(SW) Cu. Yds.	Concrete Grade 4.0 (AE) Cu. Yds.	Reinforcing Steel Epoxy Coated (Grade 60) Lbs.	Reinforcing Steel Grade 60 Lbs.	Prestressed Concrete Beams (K4) Lin. Ft.	Piles (Steel) (HP10x42) Lin. Ft.	Test Piles (Special) (HP10x42) Lin. Ft.	Drilled Shaft (48") (Cased) Lin. Ft.	Core Hole (Investigative) Lin. Ft.	Sonic Test (Drilled Shaft) (Set Price) Each	Bridge Deck Grooving Sq. Yds.	Abutment Aggregate Drain Cu. Yds.	Bridge Backwall Prot. System Sq. Yds.	Slope Protection (Riprap Stone) Cu. Yds.	Fence (Chain Link) (6') (Special) Lin. Ft.	Bridge Handrail (Metal) (1'-0") Lin. Ft.
Abutment No. 1	123.5		**	27.2	**			336	52					104	65	487		
Pier No. 1			**	75.7		13,270				105	32							
Pier No. 2			**	75.7		13,270				106	32							
Abutment No. 2	123.5		**	27.2	**			378						104	65	408		
Substr. Total	247	0		205.8		26,540		714	52	211	64	1		208	130	895		
Superstr. Total			609.6		164,590		2,100						1,081				303	304
Total	247	0	609.6	205.8	164,590	26,540	2,100	714	52	211	64	1	1,081	208	130	895	303	304

** Included in the Superstr. Total Quantity.

NOTE: Use HP 10x42 piles at abutments

† Summary of piling
Abutment No. 1 8 @ 42 Ft. & 1 Test Pile @ 52 Ft.
Abutment No. 2 9 @ 42 Ft.

TRAFFIC DATA - (197)	
AADT (2025)	1,900
AADT (2045)	2,400
DHV	12%
D	60%
T	2%

INDEX TO BRIDGE DRAWINGS

Sheet No.	Drawing
25-26	General Notes and Quantities
27	Contour Map
28	Construction Layout
29	Engineering Geology
30-32	Abutment Details
33	Abutment Aggregate Drain
34	Drilled Shaft Details
35	Pier Details
36	Framing Plan
37	Standard Prestressed Beam Details
38	K4+3 Beam Details
39	Pier Diaphragm Details
40	Slab Details
41	Superstructure Details
42	Auxiliary Slab Details
43-44	Corral Rail Details
45-46	Pedestrian Fence and Light Support Details
47	Metal Handrail Details
48	Bill of Reinforcing
	Standards
49	Bridge Excavation
50	Standard Pile Details
51	Supports and Spacers for Reinforcing Steel

GENERAL NOTES

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

BRIDGE EXCAVATION: Elevation 1274.5 shall designate the Excavation Boundary Plane of Class I and Class II Excavation; Class I above the plane, Class II below the plane. See the Bridge Excavation sheet for the limits of pay excavation.

BACKFILL COMPACTION: Compact backfill at the abutments.

PILING: Drive all piling to bear upon the Florence Limestone Member or Blue Springs Shale Member. Driving shallstop 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. 1 112.4 Tons
Abutment No. 2 112.4 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.

PILING SPLICE LOCATION: Integral pile splice locations and weld testing criteria for, Abutments 1 & 2 will follow the "Standard Pile Details" Sheet (BR110).

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

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

REMOVAL OF EXISTING STRUCTURES: 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.

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 "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.

DRILLED SHAFT BACKFILL: Backfilling the annular space between the temporary casing and the permanent casing, as defined in the KDOT Specifications, is not required at this location.

PERMANENT CASING: See KDOT Specifications.

DESIGN DATA

DESIGN SPECIFICATIONS:
AASHTO Specifications, (2020)
Edition and latest Interim Specifications. Load and Resistance Factor Design

DESIGN LOADING:
HL-93

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

UNIT STRESSES:

Concrete (Grade 4.0)	f'c = 4 ksi
Concrete (Grade 4.0)(AE)	f'c = 4 ksi
Concrete (Grade 4.0)(AE)(SW)	f'c = 4 ksi
Prestressed Beam Concrete	f'c = 6 ksi
Reinforcing Steel (Grade 60)	fy = 60 ksi
Steel Piling (Gr. 50)	fy = 50 ksi
Prestressed Strands	0.6" ø Grade 270 uncoated 7-wire low-relaxation strand

LRFD DESIGN PILE LOAD:

Design Loading (Tons/Pile)	Strength I	Service I	Phi
Abutment 1 & 2	99.8	70.8	0.65

LRFD DESIGN DRILLED SHAFT LOAD:

Design Loading (tons/shaft)	Strength I	Service I	Phi
Pier 1 & 2	456.8	325.9	End Bearing 0.50 Side Friction 0.55

LFD & LRFR RATING FACTORS			
Truck	Rating Level	Inventory	Operating
HS-20	(36T)	1.07	1.38
Type HET	(110T)		1.01
2002 LFD Rating. 17th Edition AASHTO			
HL-93 Loading		1.26	2.10
2021 Manual for Bridge Evaluation			

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

General Notes and Quantitites
K-900 over Walnut River

Proj. 900-8 KA-6474-01 Butler Co.

DESIGNED	WDF	DETAILED	WDF	QUANTITIES	WDF	CADD	WDF
DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	26	101

GENERAL NOTES

CONCRETE: Superstructure concrete is bid as Concrete (Grade 4.0)(AE)(SW). Substructure concrete is bid as Concrete (Grade 4.0)(SW). The Contractor may use Concrete (Grade 4.0) in the footings. Bevel all exposed edges of all concrete with a ¾" triangular molding, except as otherwise noted on the plans. Construction joints are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615, Grade 60. Spiral bars may meet the requirements of either ASTM A615 (Gr. 40 or 60) or AASHTO M32, and are included in the bid item "Reinforcing Steel (Gr. 60)".

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

CAMBER: Construct the finished deck to plan grade by varying the depth of the fillet over the beam to provide for prestress camber, concrete dead load deflection and, if necessary, vertical curvature. After the prestressed beams are erected measure the camber in the field by taking a profile of each beam. Correct any variation between the actual camber and concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the beam so that the finished floor is constructed to the theoretical grade. The minimum depth of the slab over the beam shall be 8½" inches. Prior to shipping, the camber shall be no greater than the design camber plus ½". The design camber is equal to the 50 day camber shown in the plans.

The theoretical amount of concrete required for the fillets is 27.4 C.Y. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

PRESTRESSED BEAM CONCRETE: Use air entrained concrete with select coarse aggregate as specified in the KDOT Specifications. The release strength and 28 day strength requirements shall be as noted on the plans. Submit mix designs to the Bureau of Materials and Research for approval.

ERECTION ELEVATION CHECKS: After the abutment and pier concrete has cured and before setting any prestressed beams, present verification to the Engineer that the elevations at the bearings match plan elevation (±¼").

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

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.

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.

DEMOLITION PLANS: This is a Category A Demolition. Submit detailed Demolition Plans to the Field Engineer per KDOT Specifications. No Demolition work will begin without approved Demolition Plans. A Licensed Professional Engineer is not required.

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.

CAUSEWAY: If the Contractor chooses to build a causeway for bridge construction purposes, the Contractor shall obtain any required U.S. Army Corps of Engineers Section 404 Permit, Kansas Department of Agriculture permit, Kansas Department of Health and Environment Section 401 Permit, Kansas Department of Wildlife Parks, and Tourism Permit, or any other permit required by law for causeway construction. Obtain the permit in a timely manner so as not to delay the completion of the project.

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

FALSEWORK INSPECTION: This project has falsework plan requirements which are considered "Category 2" by KDOT specifications. If falsework deficiencies or variations from the approved and sealed plans are found, the falsework design Engineer of Record will provide written approval of the changes. If for the convenience of the Contractor the falsework becomes "Category 1" by the use of non-typical supports; then the inspection and review requirement of "Category 1" will be fully enforced, but at no cost to the State. "Category 2" falsework inspection is not paid for directly, but is subsidiary to other bid items.

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)(SW)". 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 pier diaphragms and the abutments above the construction joints to the bottom of the deck just prior to the normal paving train operations. Do this work in a manner to avoid a cold joint in either the abutments or in the diaphragms.

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

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

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.

ERECTION PLANS: This is a Category A Structure. Submit detailed Erection Plans to the Field Engineer per KDOT Specifications. A Licensed Professional Engineer is not required.

SLOPE PROTECTION (Riprap Stone): Place Slope Protection (Riprap Stone) to the limits and thicknesses shown on the plans or as directed by the Engineer. Use Light Series 200# Gradation as described in Division 1100 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

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%
Utility Ducts 0%

Date of Report Jan. 17, 2023

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

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

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

COLUMN CONSTRUCTION: Cure the drilled shaft footing as required by the KDOT Specifications before beginning the column construction (placing resteel ir formwork). Do not 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.

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

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

General Notes
K-900 over Walnut River

Proj. 900-8 KA-6474-01 Butler Co.

DESIGNED	WDF	DETAILED	WDF	QUANTITIES	WDF	CADD	WDF
DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	27	101

PC ℄ Sta. 87+41.09 51.01' Rt
N 424504.85 E 17694640.11
1) Found 3/4" rebar 18" below asphalt surface
2) Set 60D with washer in W face of 12" tree 44.00' ESE
3) Top center 2 3/4" metal fence post welded to T- post 82.00' WSW
4) 1/2" iron bar with CD cap 72.88' WNW

POT ℄ Sta. 95+20.96
N 424720.83 E 17695394.19
1) Found 5/8" rebar 4" below asphalt surface
2) SW corner of concrete water pit cover 61.70' N
3) SE corner of concrete water pit cover 63.90' N
4) S face of power pole #TS304799 76.25' NNW

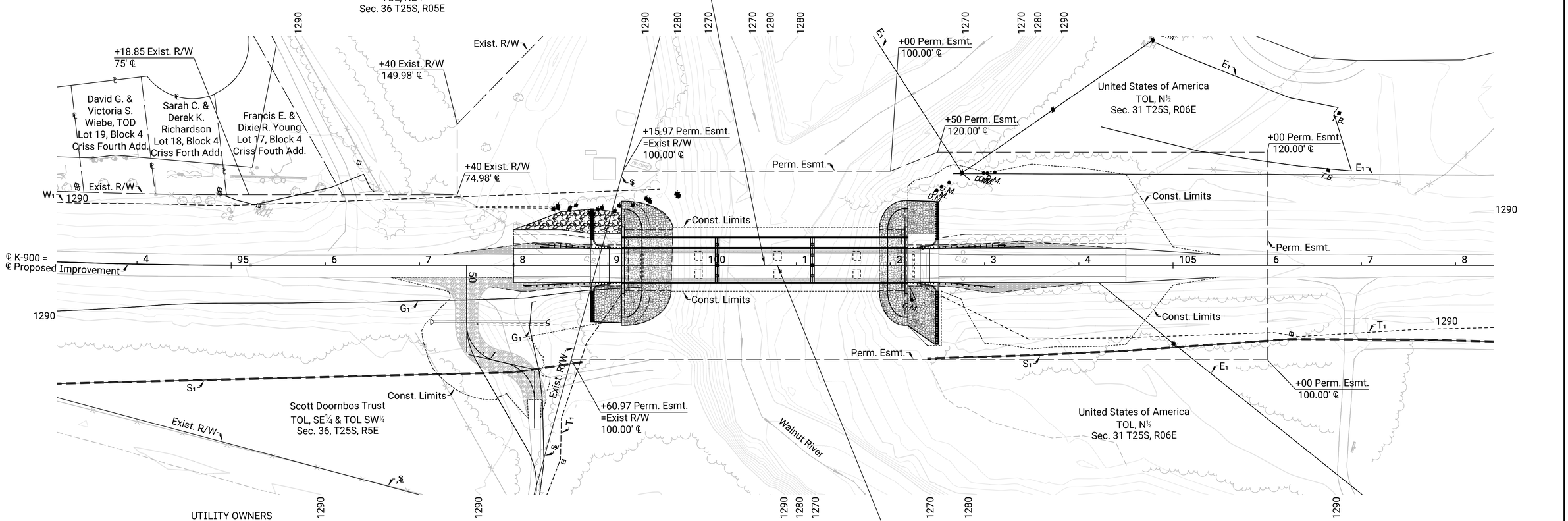
POT ℄ Sta. 98+00.00 0.17' Lt.
N 424797.66E 17695662.86
1) Found 1/2" rebar 6" below asphalt surface
2) S face metal gate post 44.55' N
3) End of guardrail 33.00' NE
4) Set mag nail w/ washer in N face tornado siren pole 46.50' SSE

POC ℄ Sta. 87+49.83 0.12' Rt
N 424559.44 E 17694641.13
1) Found 5/8" rebar 4" below asphalt surface
2) 6' wood fence corner 76.30' N
3) Set 60D with washer in W face of 12' tree 82.05' SE
4) 1/2" iron bar with CD cap 77.95' SW

Sta. 100+66.50 Construct
Br. No. 900-8-2.00 (197)
100-101-100 ft. Prestressed Conc.
Beam Continuous (PBMC)
36 ft. Roadway with 10 ft. Sidewalk Lt.

POT ℄ Sta. 111+36.85
N 425164.27E 17696948.46
1) Found 5/8" rebar 12" below asphalt surface
2) Top center concrete R/W marker 65.00' N
3) Top center concrete R/W marker 70.20' S
4) Set 60D w/ washer E face of 18" elm 78.20' SSW

Scale: 1" = 50'



UTILITY OWNERS

T₁ AT&T Distribution
785-567-4281

W₁ Butler County Rural Water District #3
591 SE Rosalia Rd
Rosalia, KS 67132
620-476-2288

G₁ Kansas Gas Service
PO Box 219046
Kansas City, MO 64121-9046
800-794-4780

S₁ KDWP
1020 S Kansas Avenue
Topeka, KS 66612
Bret t Blackburn
Phone: 785-296-8404

E₁ Evergy
700 North Star Street
El Dorado, KS 67042
800-383-1183

Note: Sewer line, power pole, rectifier, and tornado siren adjacent to field entrance on the south side of K-900 not to be disturbed with construction.

HISTORIC HIGHWATER INFORMATION

KDOT Area 2 Office stated that the water has never overtopped the road. Historic high water information based on 1953 plans. Elev. = 1295.18

Sta. 100+80.00 Remove
Br. No. 900-8-2.00 (169)
60-2@84-60 ft. Reinf. Conc. Deck T-Girder
Continuous and Haunched (RDGH)
28 ft. Roadway

Sea Level Datum NAVD88

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Contour Map
K-900 over Walnut River

Proj. 900-8 KA-6474-01 Butler Co.

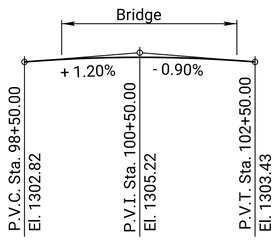
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DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

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KDOT Graphics Certified

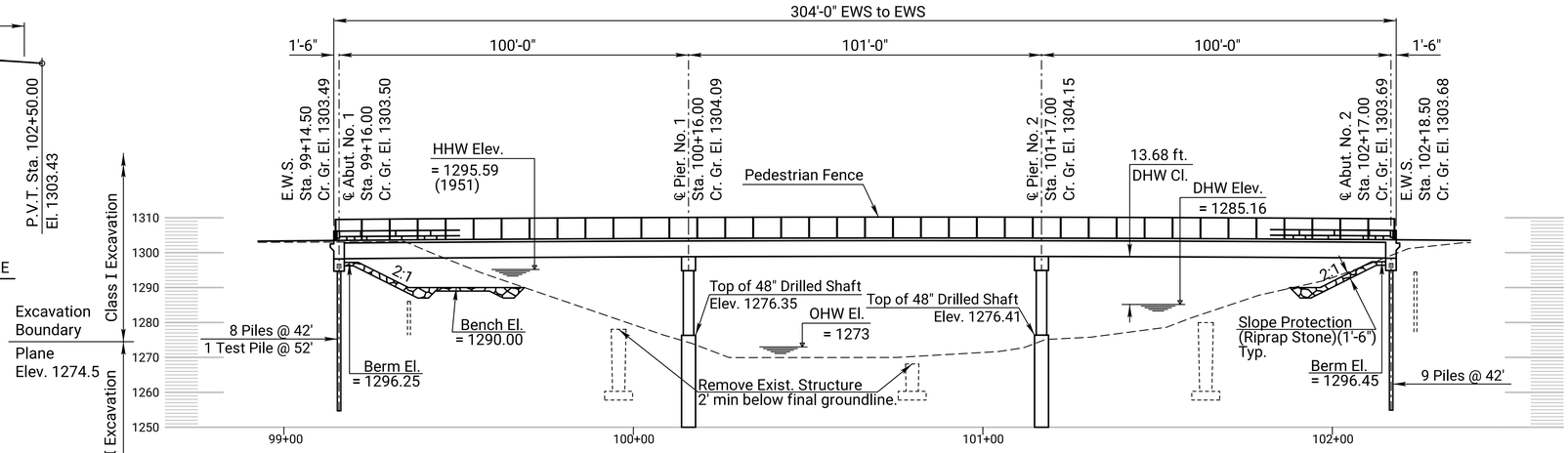
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	28	101



PROPOSED PROFILE
400' V.C.





ELEVATION

Br. No. 900-8-2.00 (197)
Prestressed Conc. Beam Cont. (PBMC)
36'-0" Roadway with 10'-0" Sidewalk

BM #2 Set "T" post 1' N of 5" pipeline set in barb wire fence
97.86' Rt.℄ Sta. 89+44.99 Elev. 1289.596

BM #4 Found "□" cut in N bridge rail in NE corner of bridge
19.11' Lt.℄ Sta. 102+34.18 Elev. 1303.466

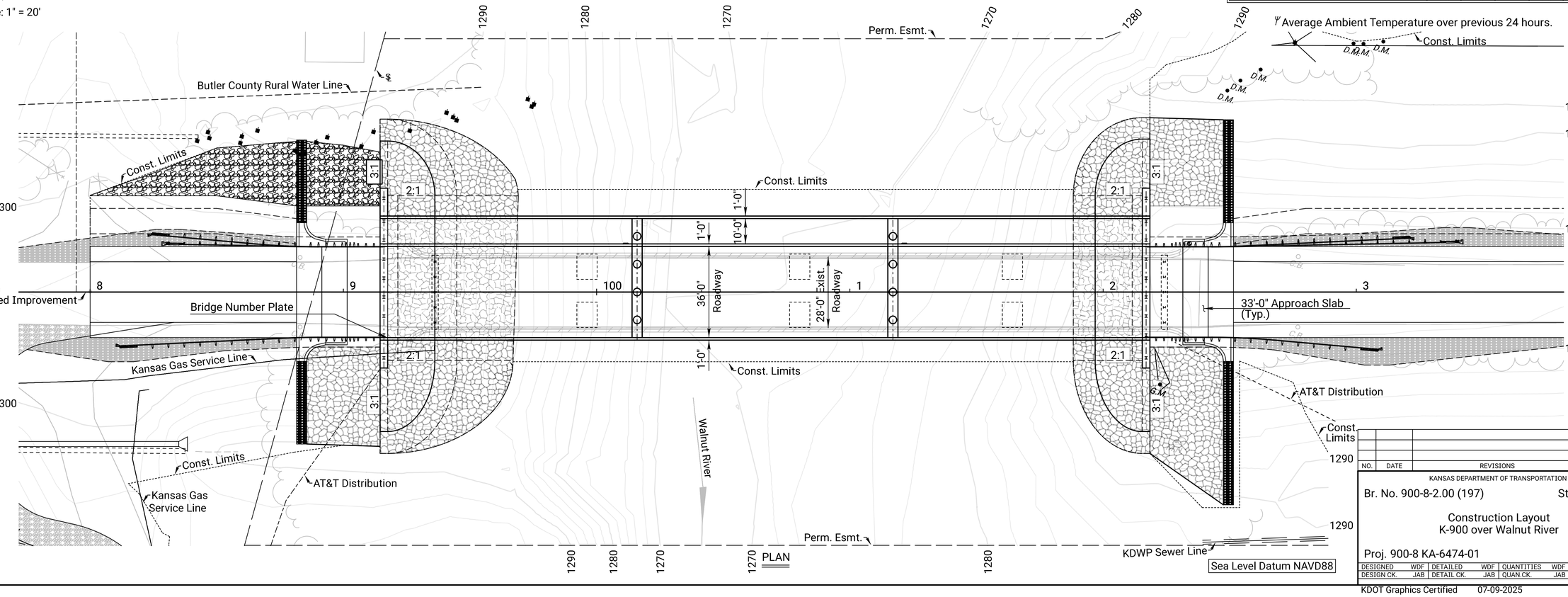
DRAINAGE DATA

Drainage Area*	244.5	sq. mi.
Design Frequency	50	yrs
Design Discharge (Q50)*	4,500	cfs
Design High Water Elevation	1285.16	ft.
Change In Design Backwater	+0.00	ft.
Design Backwater Elevation	1285.34	ft.
Overtopping Elevation (Sta. 73+60)	1291.02	ft.
Overtopping Discharge	12,000	cfs
Overtopping Frequency	>200	yrs
Discharge at Q100*	7,000	cfs
Change in Backwater at Q100	+ 0.00	ft.
Backwater Elevation at Q100	1292.05	ft.
Historic High Water Elevation	1,295.18	ft.
Ordinary High Water Elevation	1,273.00	ft.
Total Waterway Provided	5,265	sq. ft.
Design Waterway Provided	1,929	sq. ft.
Estimated Ordinary High Water Discharge	250	cfs
Change in Waterway Opening	+ 382	sq. ft.

*243.5 sq. mi. of drainage area is controlled by upstream El Dorado Reservoir releases. 1 sq. mi. is unregulated.

EXPANSION JOINT WIDTH DETAILS (W) 2

Temperature (F°)	40°	50°	60°	70°	80°	90°
Formed Concrete Opening Size	3 1/8"	3 1/8"	3"	2 7/8"	2 3/4"	2 5/8"



PLAN

Sea Level Datum NAVD88

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Construction Layout
K-900 over Walnut River

Proj. 900-8 KA-6474-01 Butler Co.

DESIGNED	WDF	DETAILED	WDF	QUANTITIES	WDF	CADD	WDF
DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

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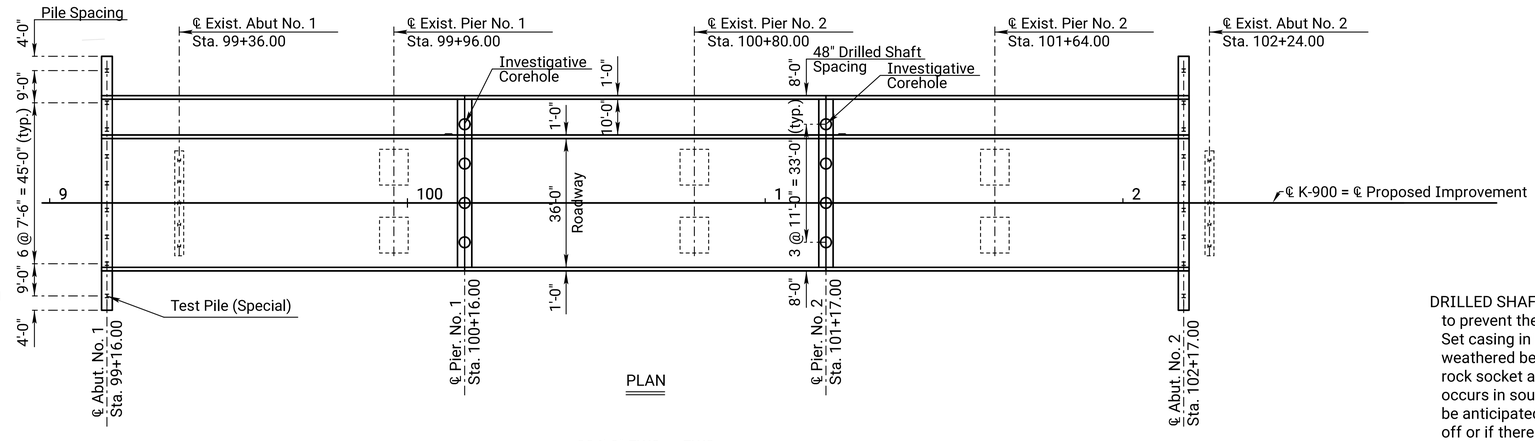
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	29	101

PILING: Once sufficient resistance is achieved, driving must cease to avoid damage to the pile. Final pile tip elevations should be determined in the field based on recommendations provided through the use of the Pile Driving Analyzer.

TEST PILE (SPECIAL): Please contact KDOT Geology in Topeka at (785)291-3861 when a schedule for pile driving has been established. A minimum of 5 working days is necessary to allow for proper scheduling.

Excavation to plan grade should be performed prior to PDA testing. At least 24 hours for each test should be allowed to account for possible restrikes.



PLAN

CH02

Scale: 1" = 20'

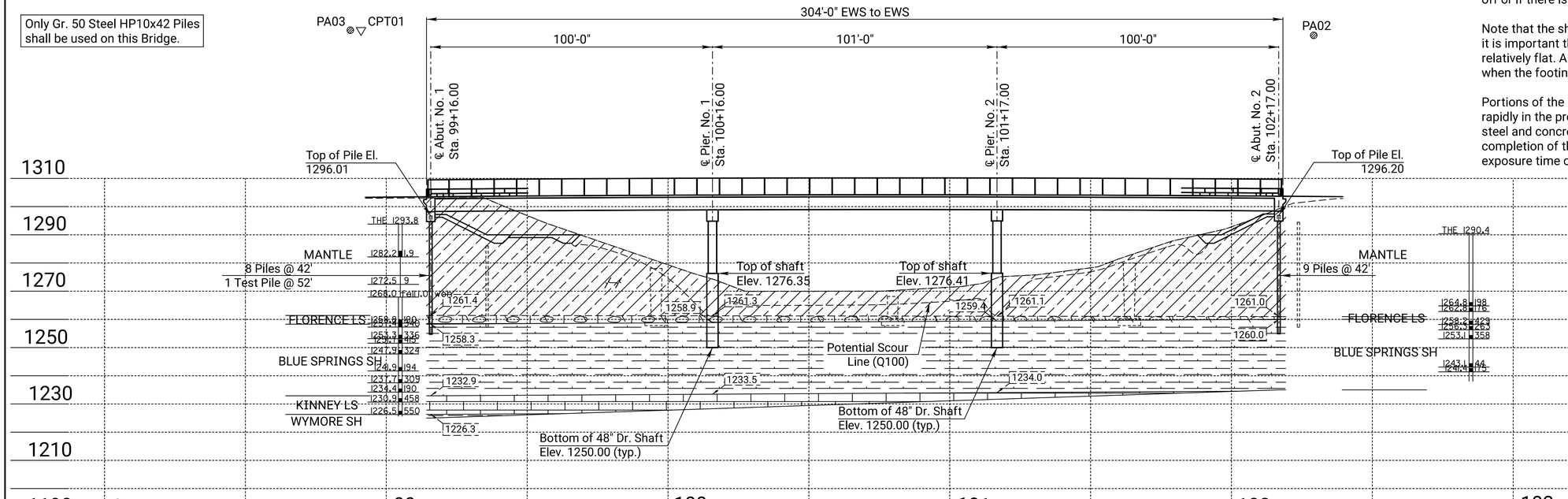
PA01

DRILLED SHAFTS: Casing will be required for drilled shafts to prevent the caving and collaspe of the excavation walls. Set casing in bedrock to reduce the risk of mantle, weathered bedrock, and groundwater from entering the rock socket and to ensure the rock socket of the shaft occurs in sound, unweathered bedrock. A wet pour may be anticipated if groundwater is not sufficiently sealed off or if there is water flowing into 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.

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

Only Gr. 50 Steel HP10x42 Piles shall be used on this Bridge.



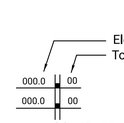
STANDARD GEOLOGIC SYMBOLS

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

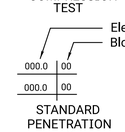
GEOLOGIC PROFILE

SOUNDINGS

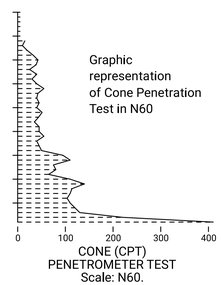
- Core drill
- Power auger
- Hand tools
- Cone (CPT) penetrometer
- Shelby tube
- Water level
- 000.0 Elevation interpolated or from adjacent soundings
- 000.0 Actual sounding elevation



UNCONFINED COMPRESSION TEST



STANDARD PENETRATION TEST



CONE (CPT) PENETROMETER TEST
Scale: N60.

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

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Engineering Geology

Proj. 900-8 KA-6474-01 Butler Co.

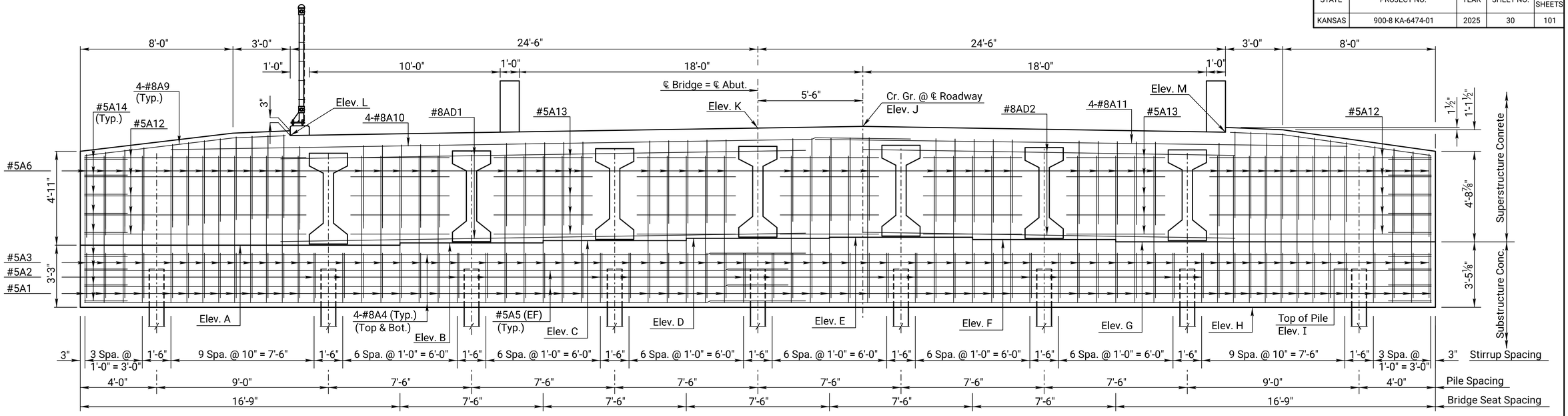
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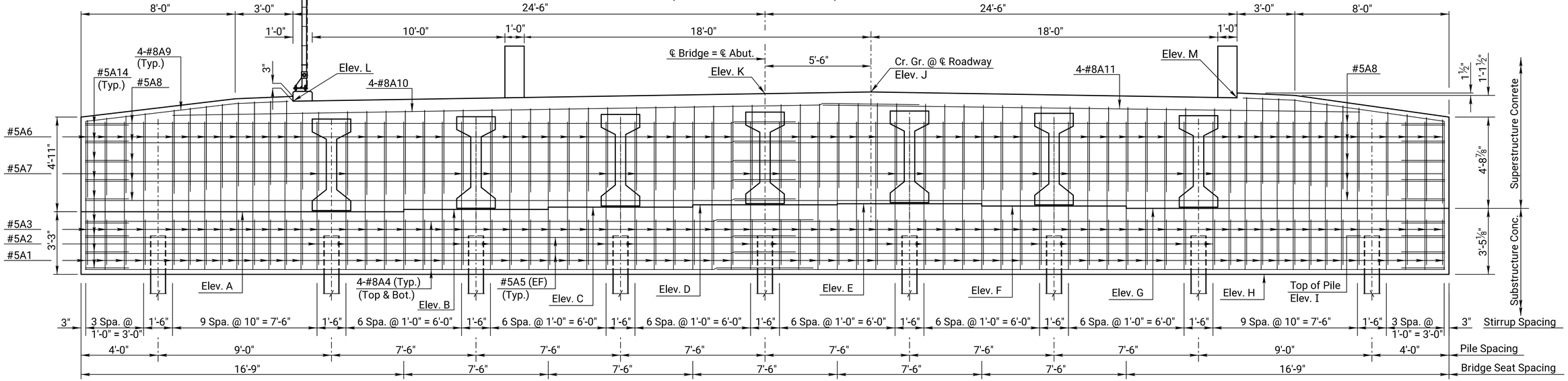
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	30	101



ABUTMENT ELEVATION (FRONT FACE)

(Abut.#1 shown, Abut.#2 Similar)



ABUTMENT ELEVATION (FRONT FACE)

(Abut.#1 shown, Abut.#2 Similar)

ABUTMENT ELEVATIONS														
	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G	Elev. H	Elev. I ◔	Elev. J	Elev. K	Elev. L	Elev. M
Abutment #1	1297.26	1297.38	1297.50	1297.62	1297.68	1297.56	1297.44	1294.01	1296.01	1303.50	1303.41	1303.02	1303.20
Abutment #2	1297.45	1297.57	1297.69	1297.81	1297.87	1297.75	1297.63	1294.20	1296.20	1303.69	1303.60	1303.21	1303.38

◔ Note: Top of pile elevations are based on the2'-0" maximum embedment. Minimum embedment is 1'-6".

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Abutment Details I

Proj. 900-8 KA-6474-01 Butler Co.

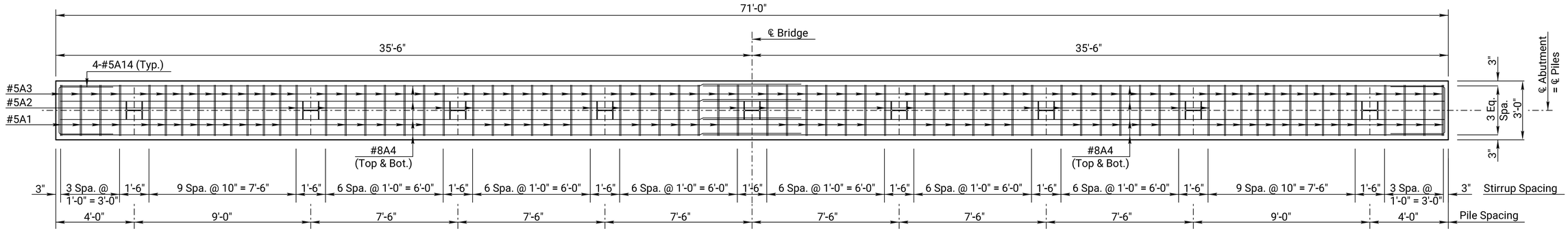
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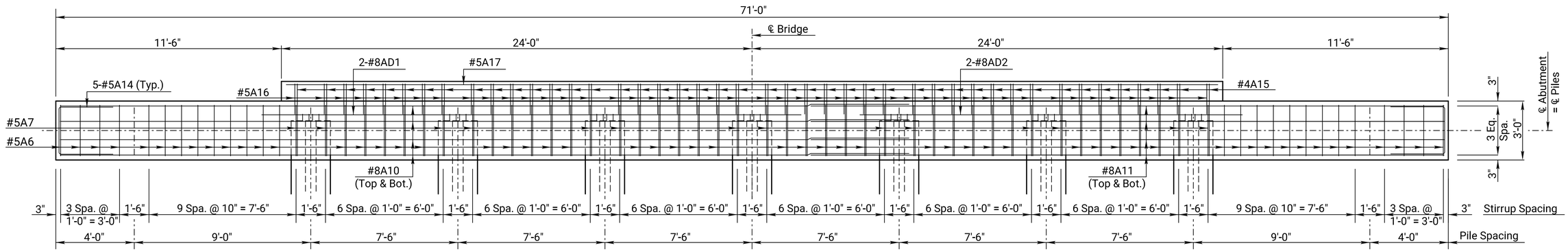
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	31	101



ABUTMENT PLAN

Abutment Beam



ABUTMENT PLAN

Abutment Diaphragm

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Abutment Details II

Proj. 900-8 KA-6474-01 Butler Co.

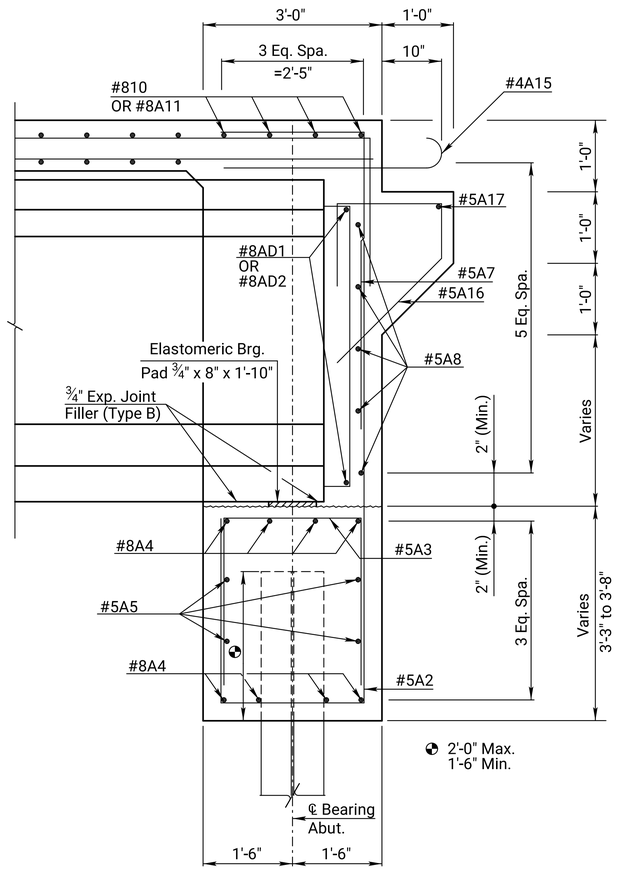
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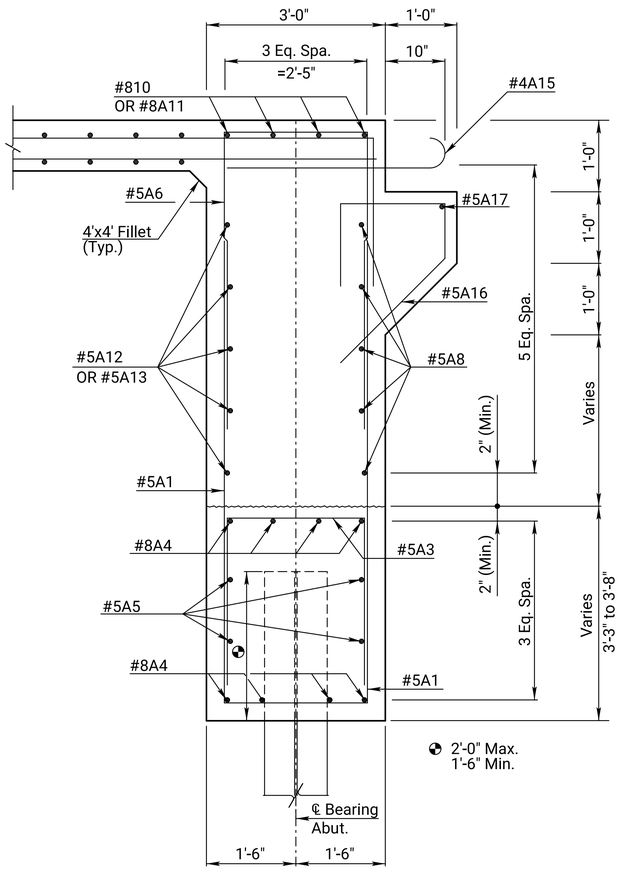
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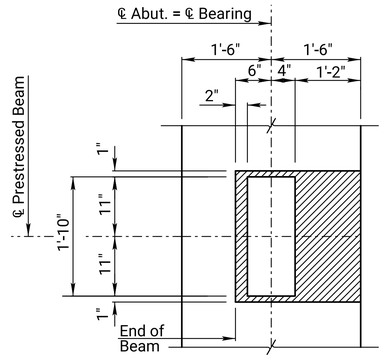
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	32	101



TYPICAL SECTION NEAR BEAM

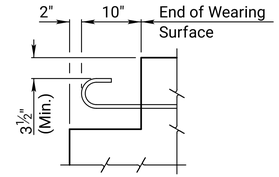


TYPICAL SECTION THRU ABUTMENT



PLAN OF BEARING PADS AT ABUTMENTS

Note: Elastomeric Bearing Pads (Durometer Hardness 60) and Preformed Expansion Joint Filler (Type B) shall be included in the unit price bid for "Prestressed Concrete Beams".



APPROACH SLAB TIE DETAIL

ERECTION ELEVATION CHECKS: After the abutment and pier concrete has cured and before setting any prestressed beams, present verification to the Engineer that the elevations at the bearings match plan elevation (±1/4").

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Abutment Details III

Proj. 900-8 KA-6474-01 Butler Co.

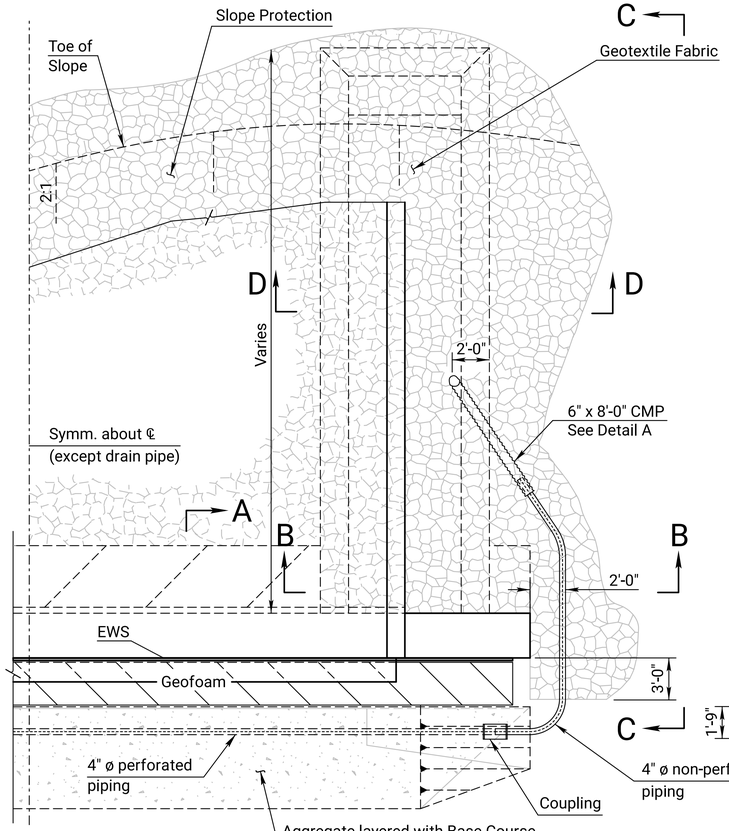
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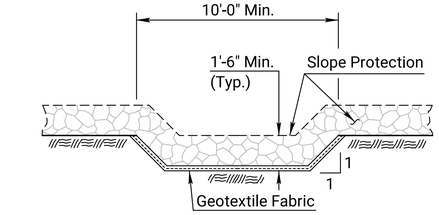
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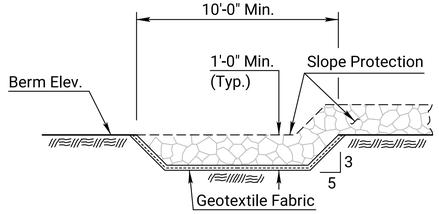
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	33	101



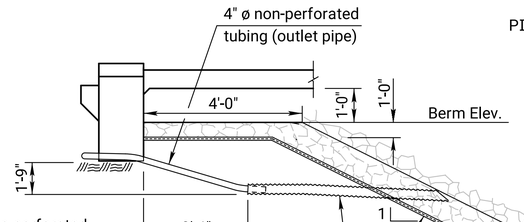
PLAN



SECTION D-D

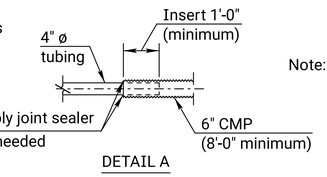


SECTION B-B



SECTION C-C

Note: The toe shall extend the entire width of the Slope Protection.



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. For stream crossings place outlet on downstream side of bridge.

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

ELEVATION

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 sides can be overlapped and that the ends fully separate the aggregate drain from the embankment soils. 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.

GEOTEXTILE FABRIC: Use "Geotextile Fabric" that conforms with KDOT Specification 1710 and found on the Prequalified Materials List.

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. Separate as shown the entire Abutment Aggregate Drain with the geotextile.

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 ¼" galvanized mesh screen to prevent the entrance of rodents. Seal the joint between the outlet pipe and the end section with a joint sealer.

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.

SUMMARY OF QUANTITIES (2 Abutments)	
Abutment Aggregate Drain	208.0 Cu. Yds.
Bridge Backwall Protection System	130.0 Sq. Yds.
Items subsidiary to Abutment Aggregate Drain	
4" ø Perforated Pipe	136.0 Lin. Ft.
4" ø Outlet Pipe	24.1 Lin. Ft.
6" ø CMP	16.0 Lin. Ft.
Geosynthetics (Class 2 Subsurface Drainage)	330.3 Sq. Yds.
Geosynthetics (Base Course Reinforcement)	450.4 Sq. Yds.
Geofoam	47.0 Cu. Yds.
Items subsidiary to Slope Protection	
Geotextile Fabric	205.9 Sq. Yds.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Abutment Drain Details

Proj. 900-8 KA-6474-01 Butler Co.

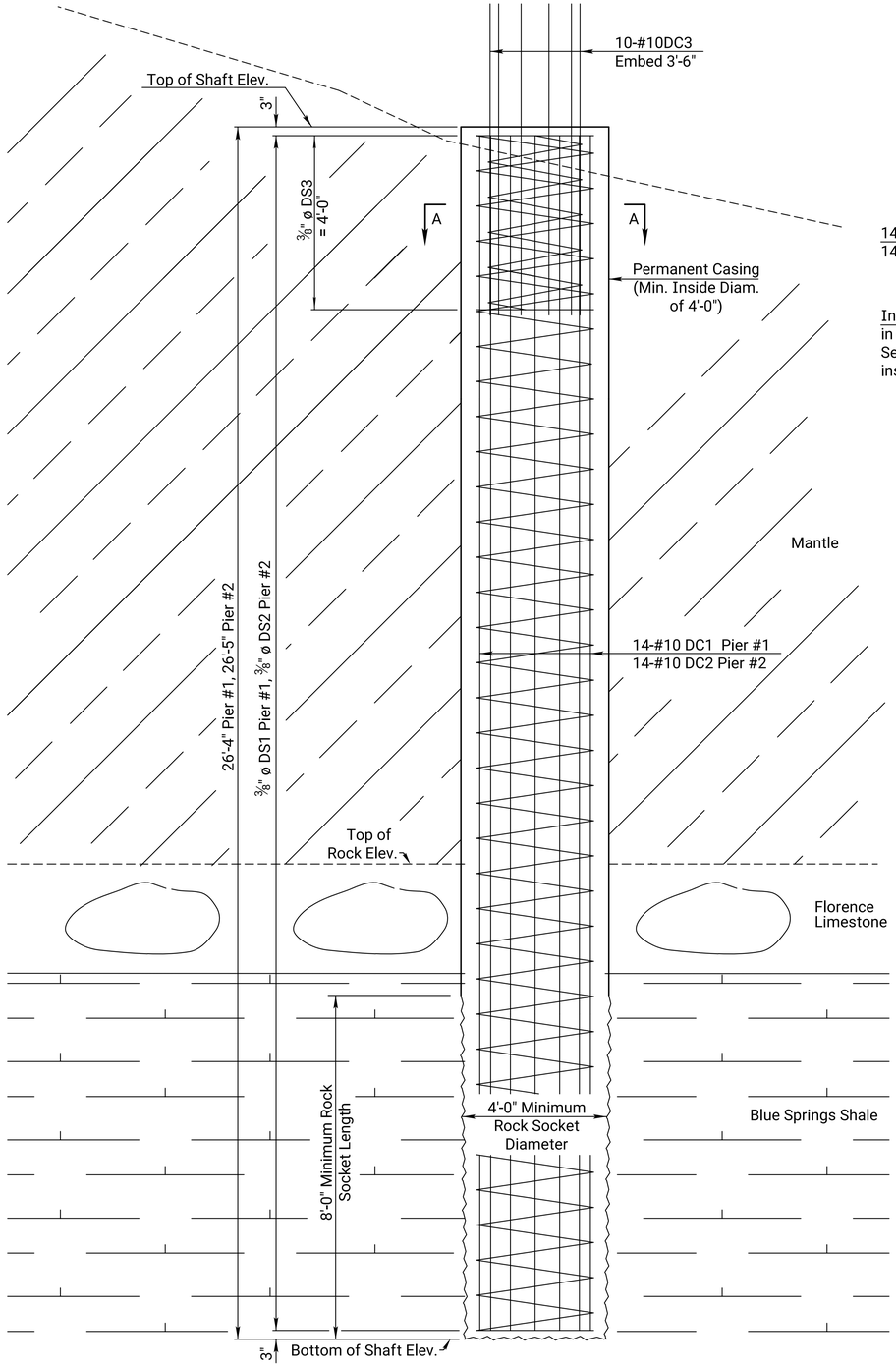
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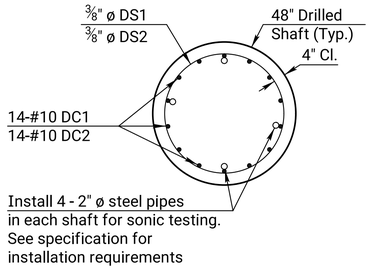
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KDOT Graphics Certified

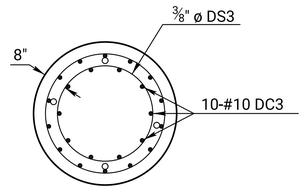
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	34	101

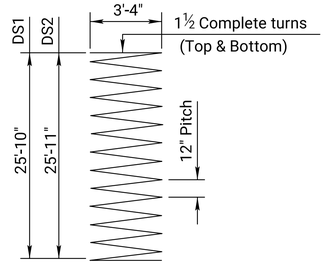




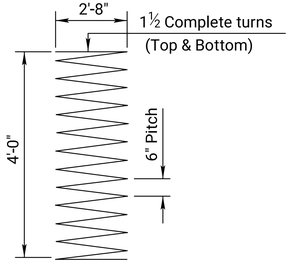
TYPICAL SECTION



SECTION A-A



DS1 & DS2



DS3

DRILLED SHAFTS: Casing will be required for drilled shafts to prevent the caving and collapse of the excavation walls. Set casing in bedrock to reduce the risk of mantle, weathered bedrock, and groundwater from entering the rock socket and to ensure the rock socket of the shafts occurs in sound, unweathered bedrock. A wet pour may be anticipated if groundwater is not sufficiently sealed off or if there is water flowing into 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.

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

ROCK SOCKET LENGTH: Provide a minimum Rock Socket length of 8'-0". Provide minimum Rock Socket Length below the bottom of temporary casing. Contact the KDOT Bridge Design Section if not able to provide the minimum Rock Socket Length.

(⅜" ø smooth or deformed bar)

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

Spiral Spacer Bars:

1) Are included in the mass of reinforcing steel.
2) Minimum section modulus = 0.008 in³
3) 4 required per spiral.

TABLE OF ELEVATIONS		
	Pier No. 1	Pier No. 2
Top of Shaft Elev.	1276.35	1276.41
Exist. Ground Line Elev.	1274.88 ±	1275.18 ±
Top of Rock Elev.	1261.3	1261.1
Bottom of Permanent Casing Elev.	1258.0	1258.0
Bottom of Shaft Elev.	1250.0	1250.0

BILL OF REINFORCING STEEL
Grade 60 Non-Epoxy
Total for Pier #1 and #2
Subsidiary to Drilled Shafts
Shown for Information Only

Mark	Size	Number	Length
DC1	10	56	25'-10"
DC2	10	56	25'-11"
DC3	10	80	8'-0"
DS1	⅜" ø	4	††
DS2	⅜" ø	4	††
DS3	⅜" ø	8	††

†† See Bending Diagram

Note: Use grade 4.0 Concrete in drilled shafts. See specifications for slump requirements. Subsidiary to Drilled Shafts.

Note: Contact the KDOT El Dorado Regional Geology Office prior to construction of the drilled shafts.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Drilled Shaft Details

Proj. 900-8 KA-6474-01 Butler Co.

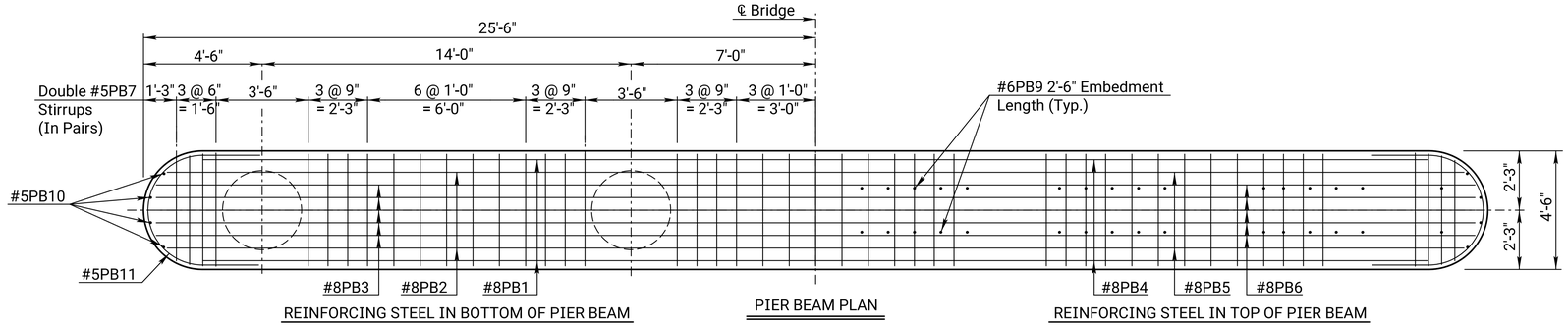
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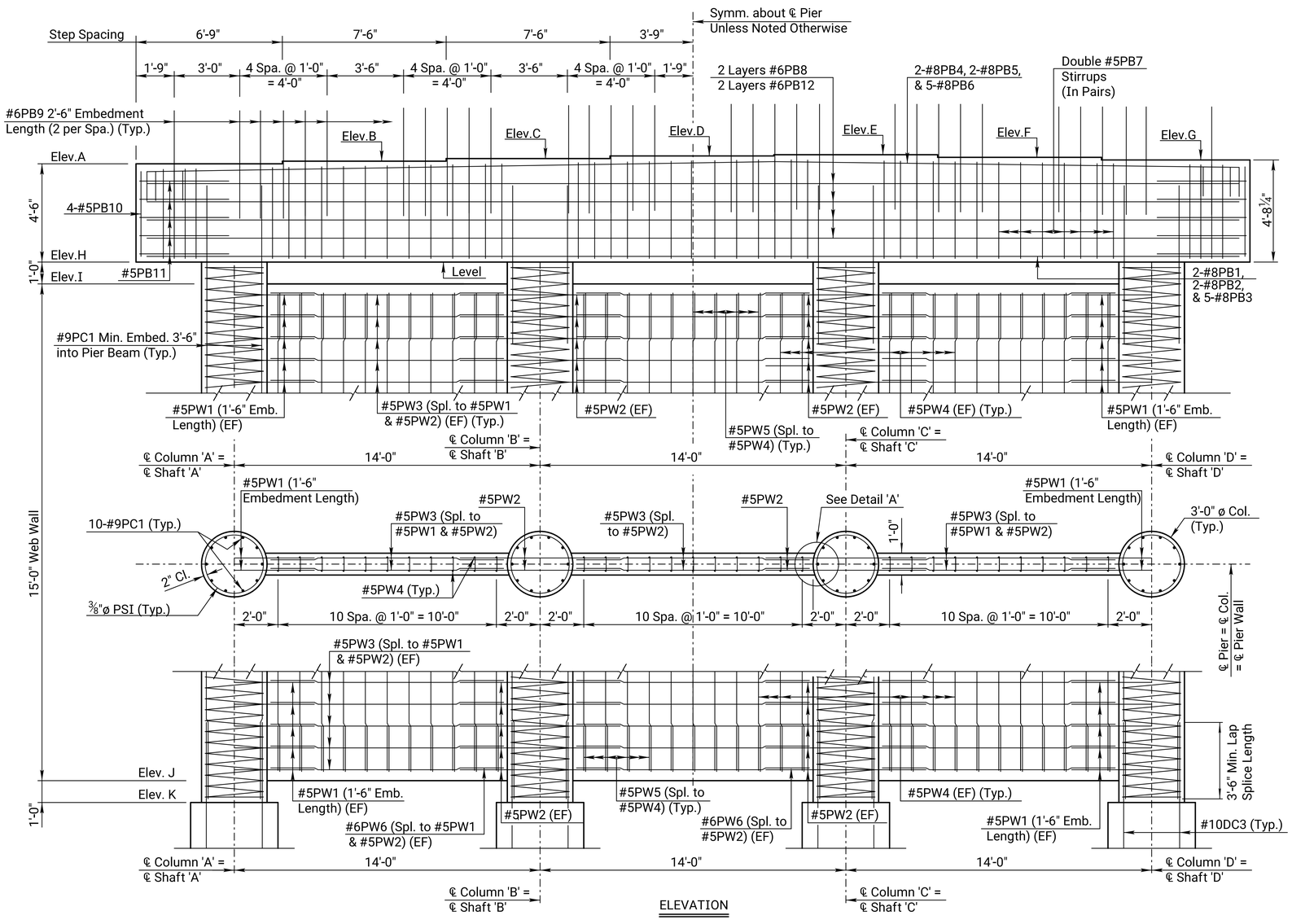
KDOT Graphics Certified 07-09-2025 Sh. No. 34

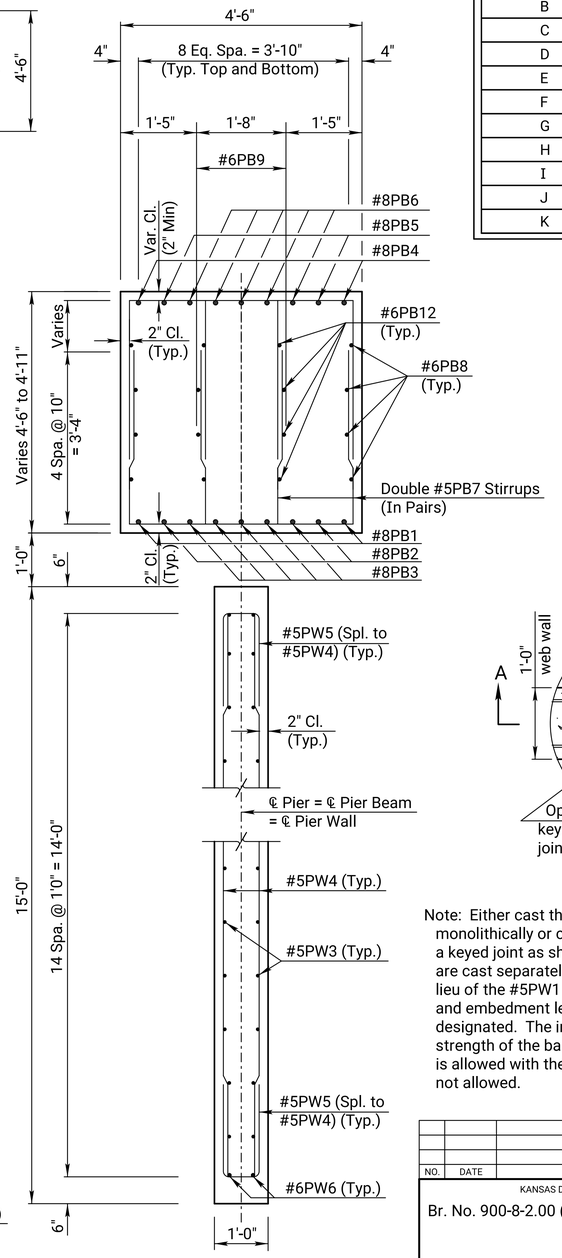
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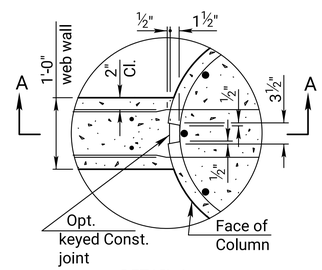
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	35	101







Elevation Location	Pier #1	Pier #2
A	1297.85	1297.91
B	1297.97	1298.03
C	1298.09	1298.15
D	1298.21	1298.27
E	1298.27	1298.33
F	1298.15	1298.21
G	1298.03	1298.09
H	1293.35	1293.41
I	1292.35	1292.41
J	1277.35	1277.41
K	1276.35	1276.41



DETAIL A

Note: Either cast the columns and pier web monolithically or cast the columns separately using a keyed joint as shown in Detail A. If the columns are cast separately, use threaded deformed bars in lieu of the #5PW1 & #5PW2 dowel bars. Bar diameter and embedment length into the web wall shall be as designated. The inserts shall develop the full yield strength of the bars. No change in compensation is allowed with the use of inserts. Coil inserts are not allowed.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Pier Details

Proj. 900-8 KA-6474-01 Butler Co.

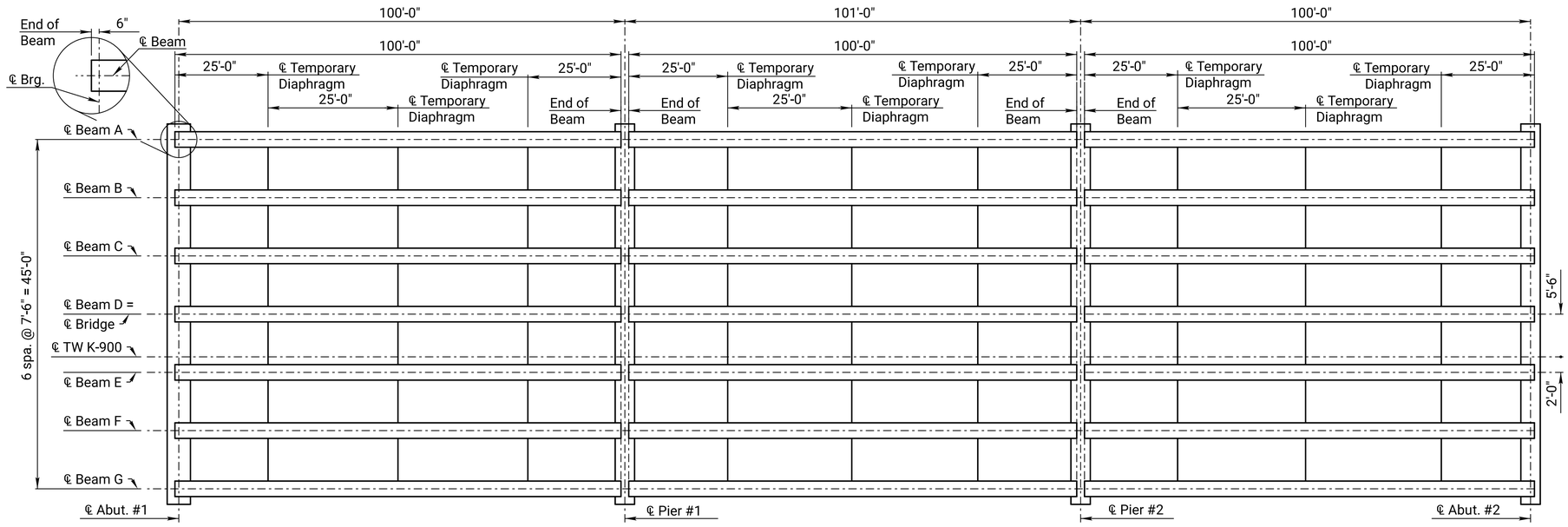
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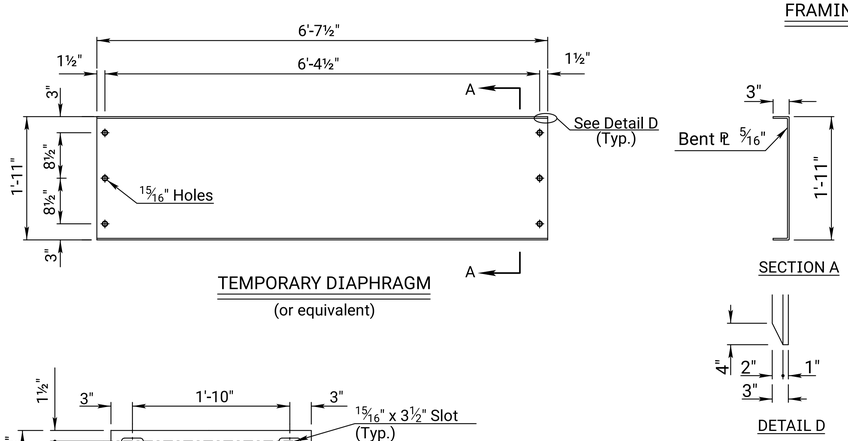
KDOT Graphics Certified

Plotted by : Will.Fehr@ks.gov 10-JUL-2025 16:00
File : ka647401bbr197-11.dgn

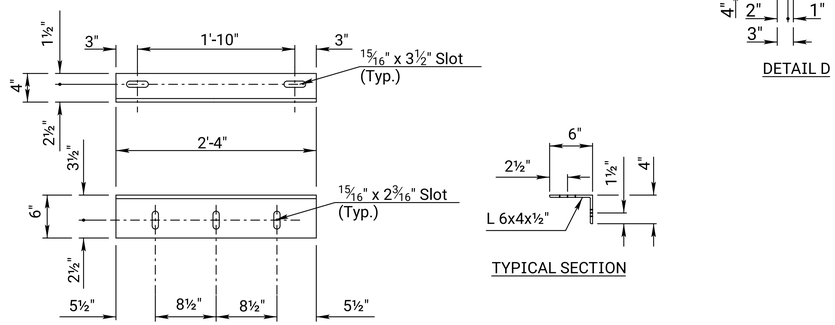
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	36	101



FRAMING PLAN



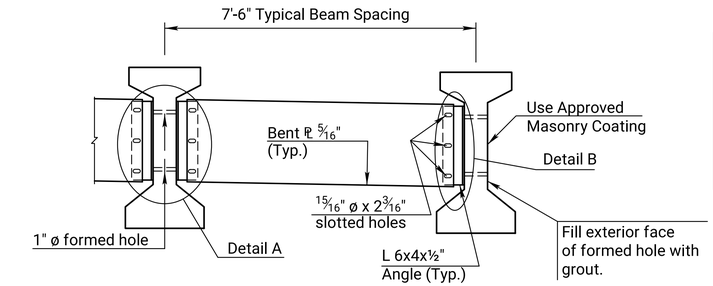
TEMPORARY DIAPHRAGM
(or equivalent)



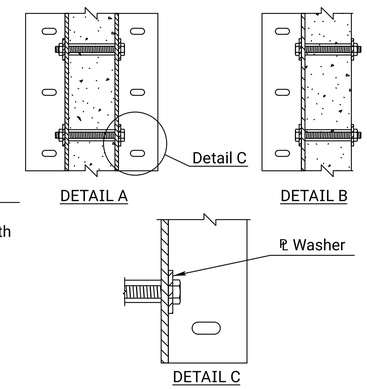
2' -4" CONNECTION ANGLE
(108 each Req'd.)
(Weight = 37.8 Lb. each)

TYPICAL SECTION

CONNECTION ANGLE DETAILS
(or equivalent)



ELEVATION OF TEMPORARY DIAPHRAGMS



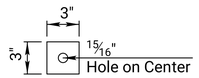


PLATE WASHER

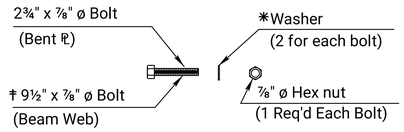


*Plate washers required for slotted holes.
‡ Verify per beam type.

FASTENER DETAILS

TEMPORARY DIAPHRAGMS: Use ASTM A709 Gr. 36 steel for all angles and bent plates for temporary diaphragms. All bolts, nuts, and washers for fasteners shall conform to the heavy hex structural requirements of ASTM F3125 Gr. A325, Type 1. Galvanize the angles, bolts, nuts, and washers in accordance with the KDOT Specifications. Use hardened steel washers over any oversized holes. Use 5⁄16" plate washers over any slotted holes along with hardened washers under the turned elements. Use the turn-of-the-nut tightening method. DTI's are not required. Install the temporary diaphragms, as shown in the details, prior to placing any superstructure concrete. Leave the temporary diaphragms in place until the concrete diaphragms and deck have cured. Remove the angles from the beams and fill the holes in the prestressed beams with an approved epoxy grout. The bent plate diaphragms, angles, nuts, bolts, and washers shall remain the property of the Contractor. Submit shop drawings of the temporary diaphragms to the KDOT Bridge Section for review and approval. The material, equipment, and labor necessary for the installation of the temporary diaphragms, including filling the bolt holes, shall not be paid for directly, but shall be subsidiary to the bid item "Prestressed Concrete Beams."

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Framing Plan

Proj. 900-8 KA-6474-01 Butler Co.

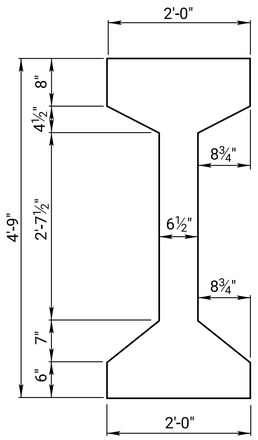
DESIGNED	WDF	DETAILED	WDF	QUANTITIES	WDF	CADD	WDF
DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

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File : ka647401bbr197-12.dgn

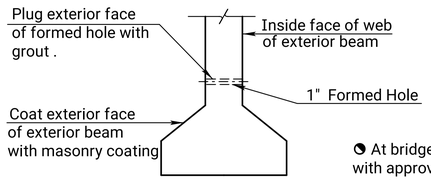
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	37	101

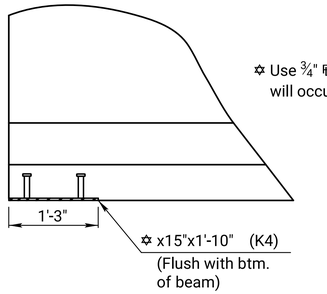


TYPE K4+3

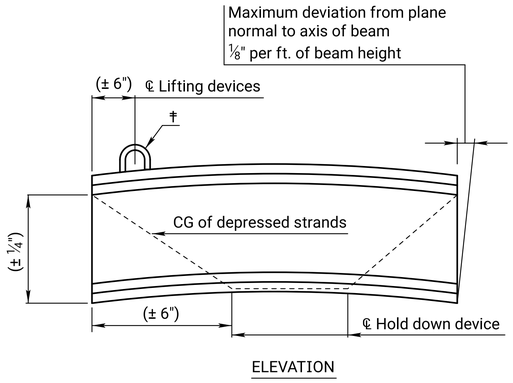
Area	716 in.²
IcG	292,923 in.⁴
Y Bot	28.87 in.
Vol./Surf. Area	3.96 in.
Wt./Ft.	745 lbs.

TYPICAL BEAM SECTIONS

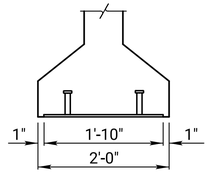




ELEVATION



ELEVATION



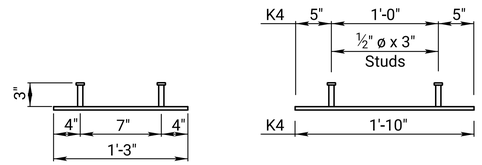
END VIEW
(K4 Beam)

Note: Stud welding will be in accordance with the latest edition of AWS D1.1.

Use plate conforming to the requirements of ASTM A709 Grade 36. The stud anchors will be made of material as specified for Shear Connector Studs in the KDOT Specifications.

The exposed surface of the bearing plates shall be galvanized.

All work and material to install the bearing plates shall be subsidiary to the bid item "Prestressed Concrete Beam".



ELEV. OF BRG. PLATE

TYPICAL SECTION

BEARING PLATE DETAILS

◔ At bridge deck drain locations coat beam with approved epoxy substructure waterproofing membrane.

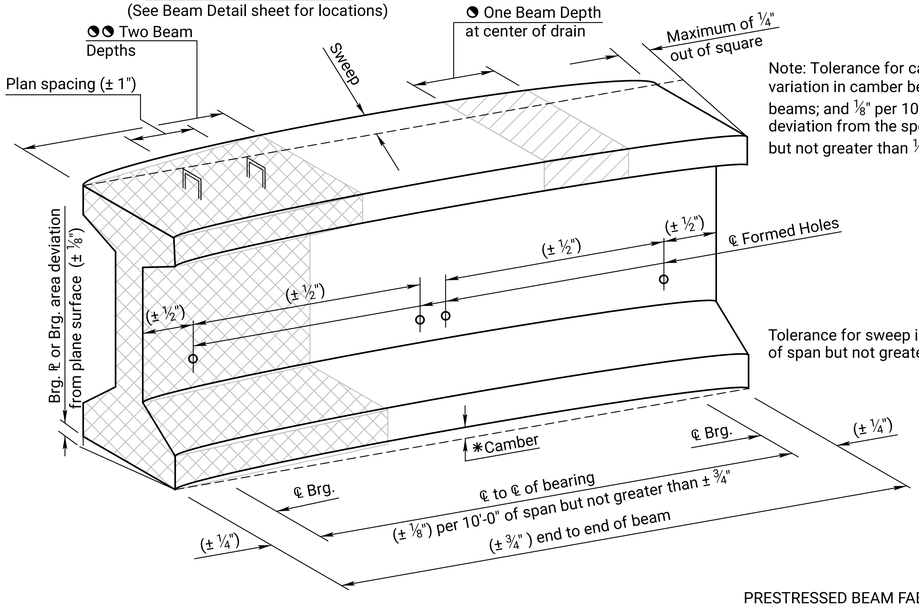
◔◔ At expansion joint locations coat beam with approved epoxy substructure waterproofing membrane.

Note: Dimensions shown in parentheses are tolerances only.

CG = Center of Gravity

✱Prior to shipping, the camber shall be no greater than the design camber + ½". The design camber is equal to the 50 day camber shown in the plans.

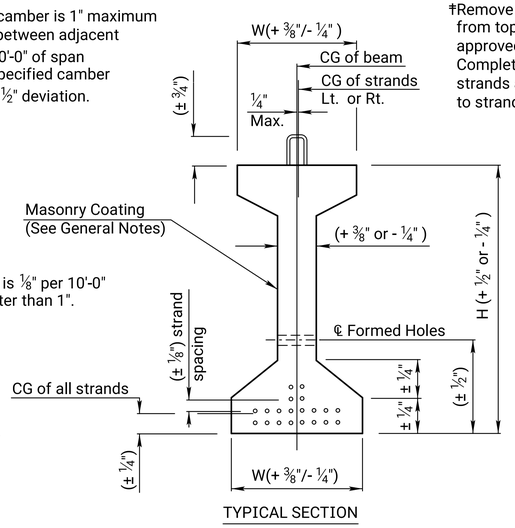
DETAIL OF FORMED HOLE(S)
(See Beam Detail sheet for locations)



Note: Tolerance for camber is 1" maximum variation in camber between adjacent beams; and ⅛" per 10'-0" of span deviation from the specified camber but not greater than ½" deviation.

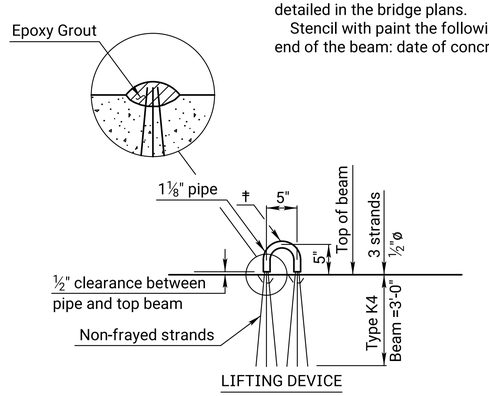
Tolerance for sweep is ⅛" per 10'-0" of span but not greater than 1".

PRESTRESSED BEAM FABRICATION TOLERANCES



TYPICAL SECTION

‡Remove lifting device within ½" from top of beam. Coat area with approved epoxy bonding agent. Completely cover remaining exposed strands and fill depressions adjacent to strands with approved epoxy grout.



LIFTING DEVICE

GENERAL NOTES

Fabricate the precast prestressed beams in accordance with the KDOT Specifications. Submit shop drawings in accordance with the KDOT Specifications.

Use air entrained concrete. The KDOT Materials Section shall approve the mix design.

Unless otherwise shown on the plans, f'c = 6,000 psi and f'c at release = 5,000 psi.

Use reinforcing steel conforming to the requirements of ASTM A615, Grade 60. The reinforcing steel shown shall be uncoated unless otherwise indicated.

Use 0.6" nominal diameter (unless otherwise indicated), uncoated, seven-wire, low relaxation prestressing tendons conforming to the requirements of ASTM A416, Grade 270.

Use bolts having an ultimate strength 50% in excess of the manufacturer's safe load. All items (except the tendons) cast-in or inserted in prestressed beams shall be epoxy coated or galvanized. Show Formed Holes on shop drawings. All bolts, nuts and washers shall be subsidiary to the bid item, "Prestressed Concrete Beams".

Show on the shop drawings any hardware, holes or other appurtenances that are required to be incorporated into the girder to construct the girder or for any temporary works needed to construct the bridge (e.g. safety railing pockets).

After beams are in the final position, remove lifting devices. See "Lifting Device" detail below. Removal of the lifting devices, coating and grouting shall be subsidiary to the bid item: "Prestressed Concrete Beams".

Use elastomeric bearing pads conforming to the KDOT Specifications. Bearing pads and Type B expansion joint material shall be subsidiary to the bid item, "Prestressed Concrete Beams".

The beam lengths shown on the design plans are net lengths measured horizontally along the beam centerline. The beam manufacturer shall make necessary allowances for grade, and for shortening due to elastic shortening, creep and shrinkage.

The beams shall reasonably conform to the lines and dimensions shown on the design plans and be within the tolerances specified in the latest edition of Prestressed Concrete Institute's, "Manual for Quality Control for Plants and Production of Structural Precast Concrete Products", except as modified by this sheet or the KDOT Specifications.

Bevel all exposed edges of beams except the tops and ends with a ¾" triangular molding or round the edges to a ¾" radius. Round the angle of intersection between the web and the flanges.

Apply an initial force of 1,000 to 3,000 pounds to each strand to take up any slack in the cables. Unless otherwise noted on the plans, apply a force of 31,000 pounds to each strand. Stress harped strands to a magnitude such that they are tensioned to 31,000 pounds after they are in position.

Strike off level and apply a wire brush or stiff broom finish to the tops of the beams. Apply the finish transverse to the length of the beam. (Note: When using precast panels for deck construction, the outside 5" on each side of the top flange shall be finished smooth with a steel trowel.) At approximately the time of initial set, brush the top of the beam transversely with a coarse wire brush to remove all laitance.

Fill trapped air holes and surface voids on the exterior face of the exterior beams with an approved concrete masonry coating. This work shall conform to KDOT Specifications. This work shall be subsidiary to the bid item, "Prestressed Concrete Beams".

Detension strands in a sequence which minimizes lateral eccentricity. Show the method and sequence of strand release on the shop drawings. Use extreme care when lifting, handling, storing and transporting beams. Use the lifting system shown or an alternate system approved by the Engineer. Keep the beam in an upright position at all times. Support the beam on bearing points positioned directly below the designated lifting points or designated bearing points.

Do not place the bridge slab before the beams are 28 days old. Pour diaphragms as detailed in the bridge plans.

Stencil with paint the following information on the webs approximately 5'-0" from one end of the beam: date of concrete placement, date of strand release, and beam mark.

NO.	DATE	REVISIONS	BY	APP'D
06	08-16-18	Note Update	M.L.L.	J.P.J.
05	06-04-15	Define Beam Protection	J.P.J.	C.E.R.
04	02-21-12	Change Bearing Plate Thickness	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

STANDARD PRESTRESSED CONCRETE BEAM DETAILS

BR300C

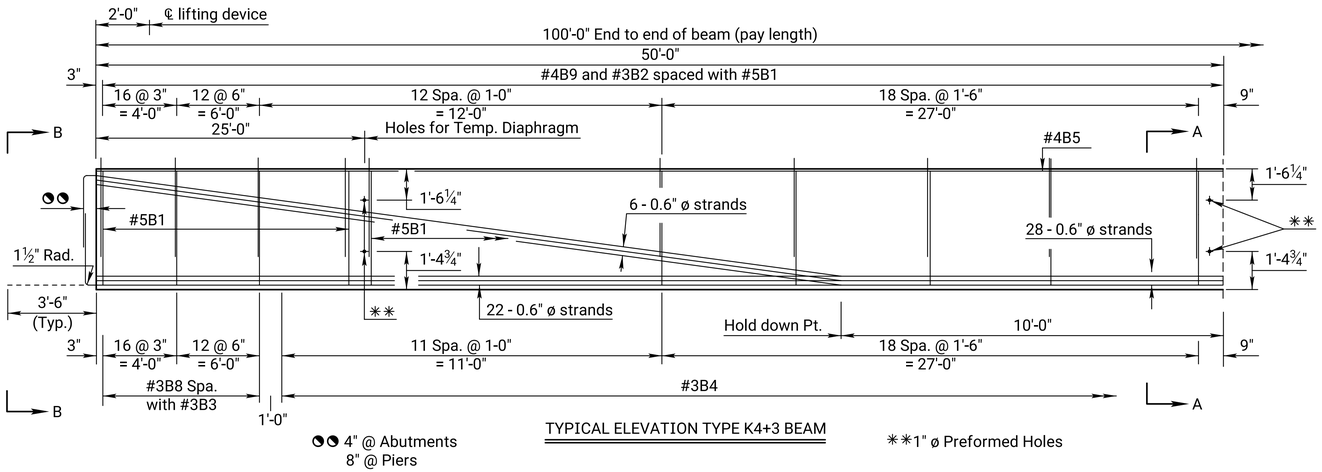
FHWA APPROVAL		10-11-10	APP'D.		Terry L. Fleck
DESIGNED	DETAILED	R.G.F.	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	L.R.R.	QUAN.CK.	TRACE CK.	

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File : ka647401bbr197-13.dgn

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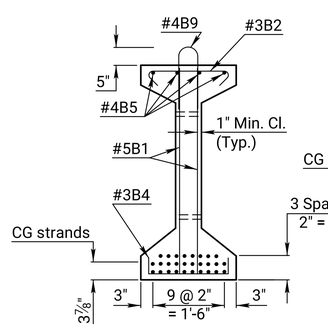
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	38	101



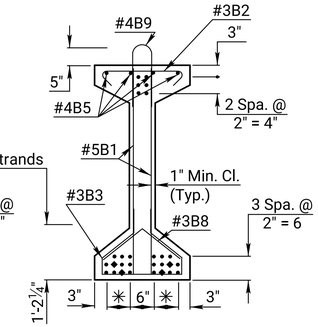
◔◔ 4" @ Abutments
8" @ Piers

TYPICAL ELEVATION TYPE K4+3 BEAM

✳✳1" ø Preformed Holes

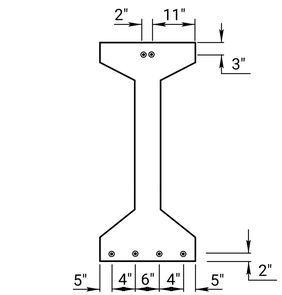


SECTION A-A



SECTION B-B

◆ Strands debonded for 4' from end
✳ 3 Spa. @ 2" = 6"



STRAND EXTENSION DETAIL
(all beams)

NOTE: During transportation and construction only, support beams on bearing points a maximum of 5 ft. from the beam end. The Fabricator shall show the proposed support locations on the shop drawings.

NOTE: The hold down force at the harp points for 6 strands at 4.28 kips per strand = 25.68 kips total.

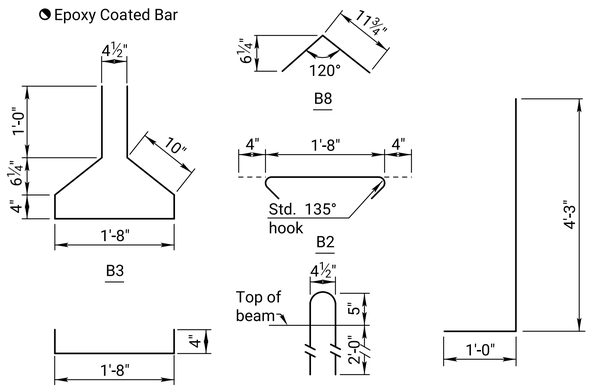
†If Welded Wire Reinforcement (WWR) is used in-lieu of reinforcing steel bars shown on this sheet, the spacing of wires for the WWR shall be equal or less than the vertical bars shown in the typical beam section above. The equivalent As for the WWR shall be equal to or greater than typical beam section above.

NOTE: Extend 6 strands 3'-6" beyond the end of the beam. Strands not shown shall be cut flush with the end of the beam. See "Strand Extension Details".

Welded Wire Reinforcement Equivalent Steel As†						
Size	3"	6"	9"	12"	15"	18"
#3	0.440	0.220	0.147	0.110	0.088	0.073
#4	0.800	0.400	0.267	0.200	0.160	0.133
#5	1.234	0.617	0.411	0.308	0.247	0.206
#6	1.761	0.880	0.587	0.440	0.352	0.293

BILL OF REINFORCING STEEL							
Beam (1 Listed-21 Reqd.) (End spans)							
Straight bars				Bent bars			
Mark	No.	Size	Length	Mark	No.	Size	Length
B5	8	#4	51'-0"	B2		#3	2'-4"
				B3		#3	6'-0"
				B4		#3	2'-4"
				B8		#3	1'-11"
				◔ B9		#4	5'-0"
				B1		#5	5'-3"

◔ Epoxy Coated Bar



BILL OF MATERIAL		
Item	Unit	Quantity
Prestressed concrete beams (K4+3) All spans	Lin.Ft.	2,100
The following quantities are given for information only and shall not be paid for directly but shall be made subsidiary to the bid item "Prestressed Concrete Beams".		
Beam concrete (f'c= 6,000 PSI) (per beam)	Cu.Yds.	18.4
Approx. Wt. per 100'-0" beam	Tons	37.3
588-0.6" ø Prestressing strand (270 KSI low relaxation fy= 243 KSI)	Lin.Ft.	59,732
Epoxy reinforcing steel (fy=60,000 PSI)	Lbs.	8,280
Reinforcing steel (fy=60,000 PSI)	Lbs.	39,766
Elastomeric Brg. pads (¾" x 8" x 1'-10")	Each	42
1" ø Formed Hole	Each	126
Lifting devices	Each	42
Bearing plates (✡x 15" x 1'-10")	Each	42

✡ Use ¾" ℄ when field welding will occur, otherwise use ½" ℄.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

K4+3 Beam Details

Proj. 900-8 KA-6474-01 Butler Co.

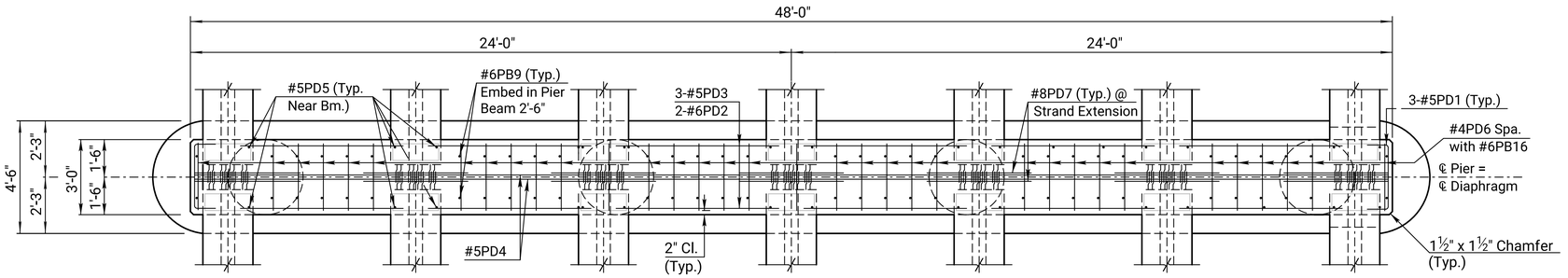
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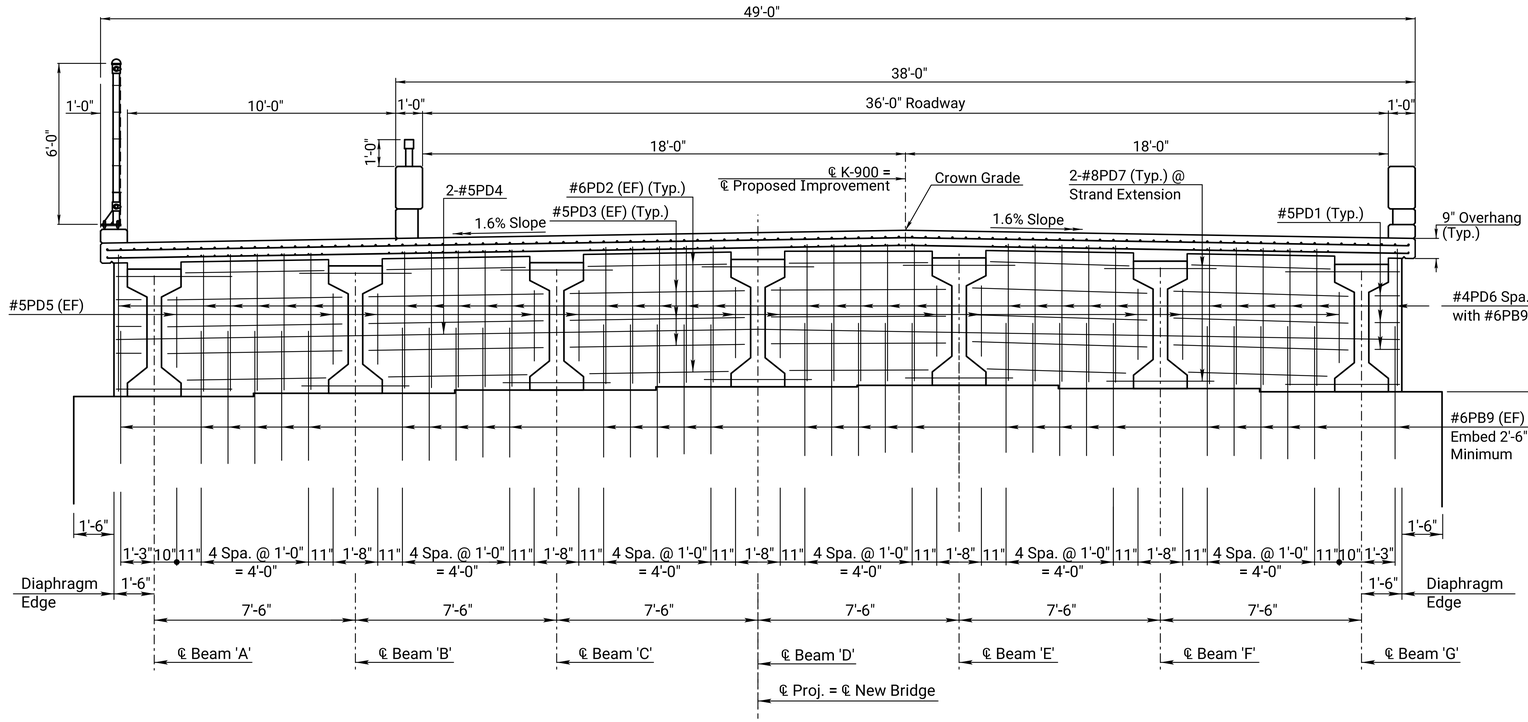
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File : ka647401bbr197-14.dgn

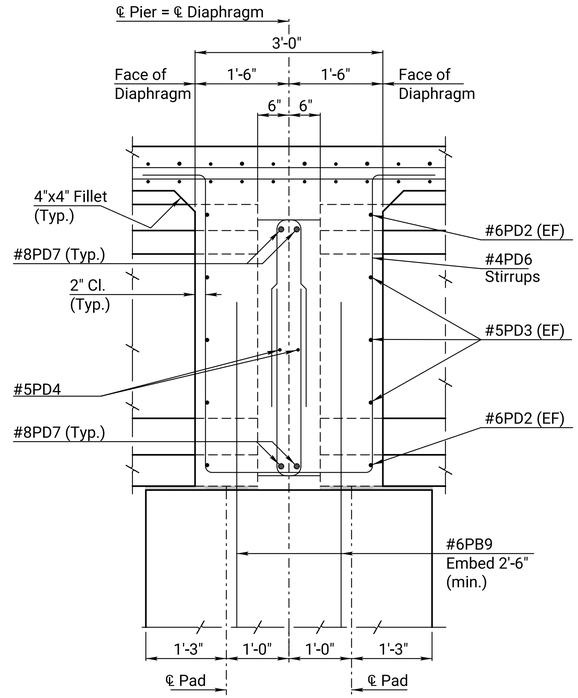
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	39	101



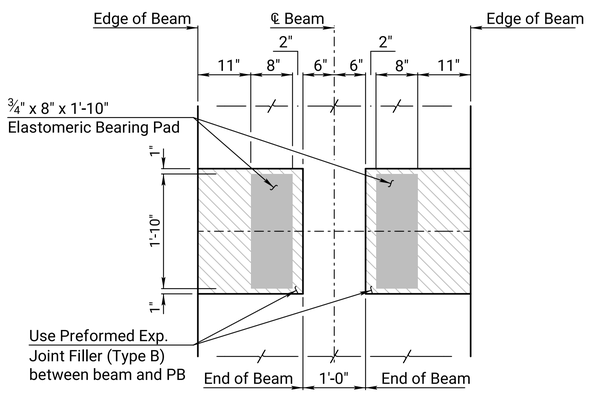
PLAN



ELEVATION



SECTION THRU PIER DIAPHRAGM



ELASTOMERIC BEARING PAD

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Pier Diaphragm Details

Proj. 900-8 KA-6474-01 Butler Co.

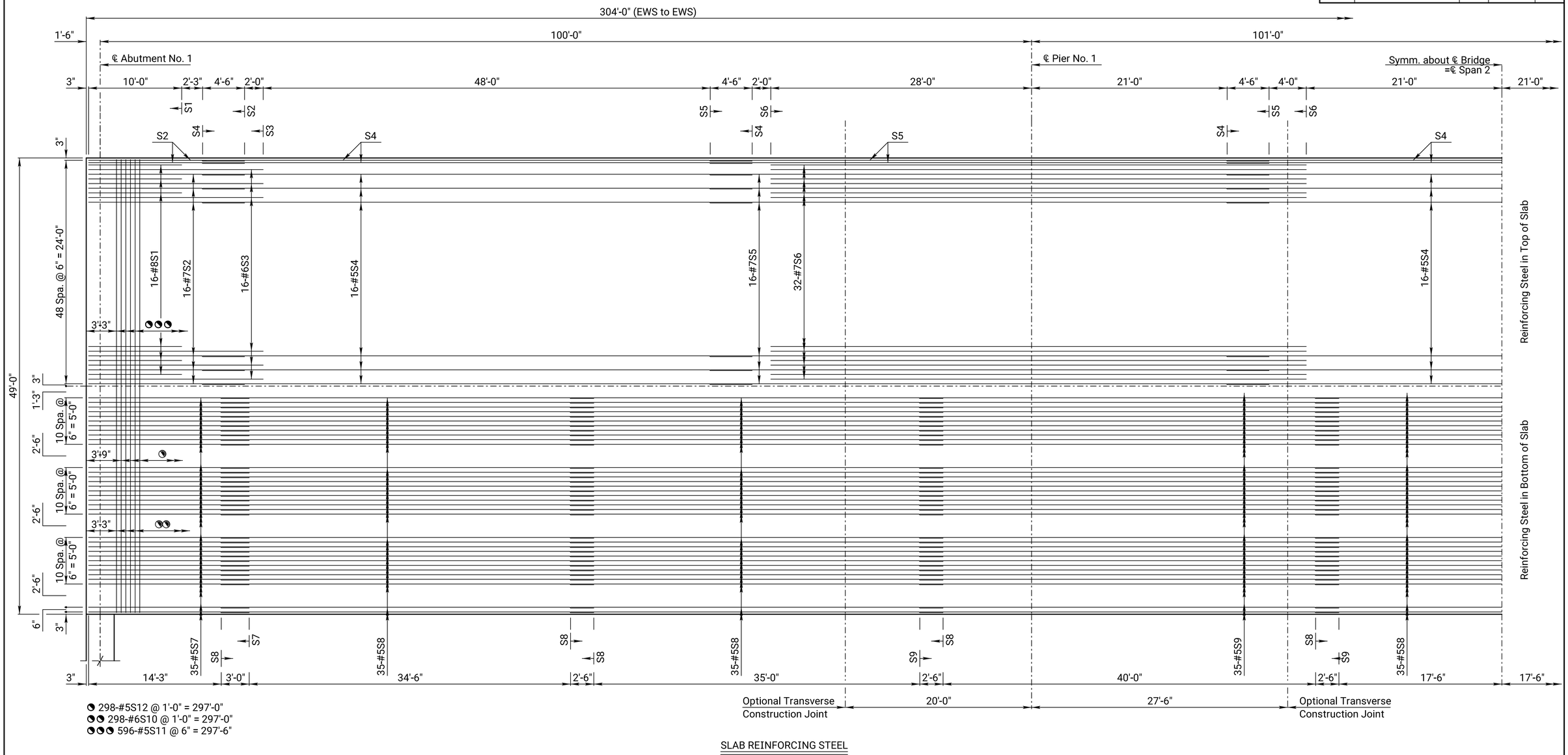
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File : ka647401bbr197-15.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	40	101



SLAB REINFORCING STEEL

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Slab Details

Proj. 900-8 KA-6474-01 Butler Co.

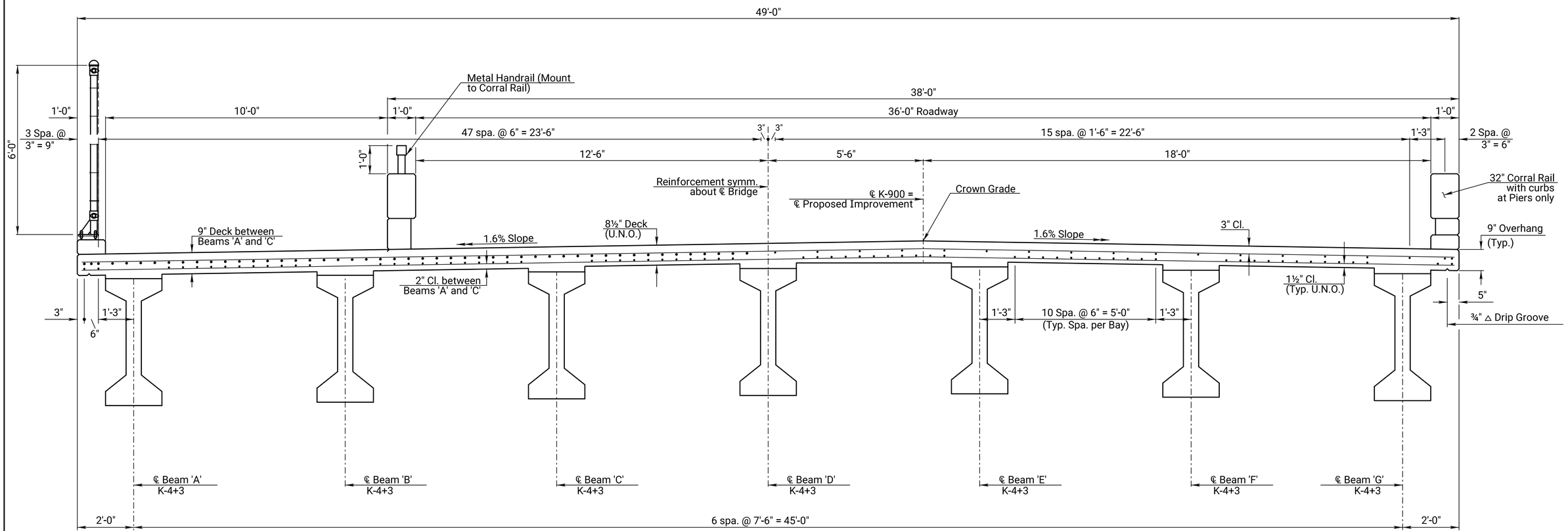
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File : ka6474401bbr197-16.dgn

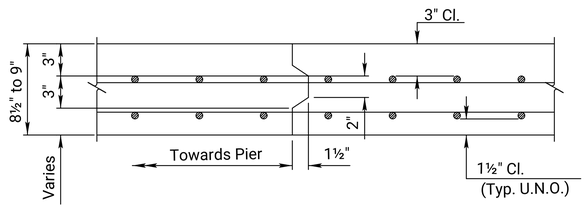
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	41	101



Half Section at Pier

TYPICAL SECTION
(Looking Upstation)

Half Section at Mid-Span



TRANSVERSE DECK CONSTRUCTION JOINT
(Optional)

LEGEND

U.N.O. = Unless Noted Otherwise

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Superstructure Details

Proj. 900-8 KA-6474-01 Butler Co.

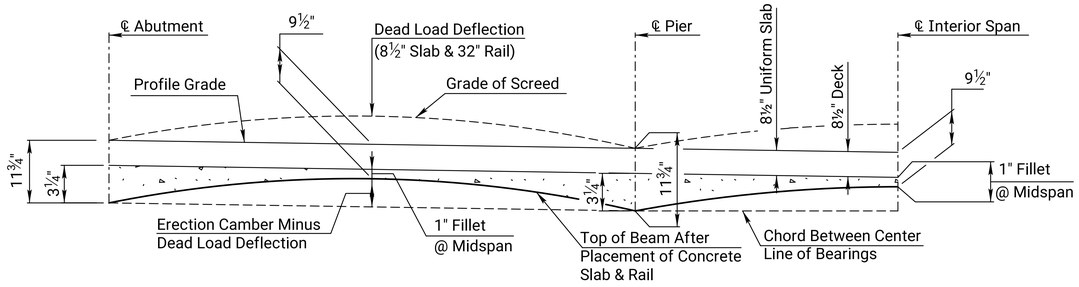
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KDOT Graphics Certified 07-01-2025 Sh. No. 41

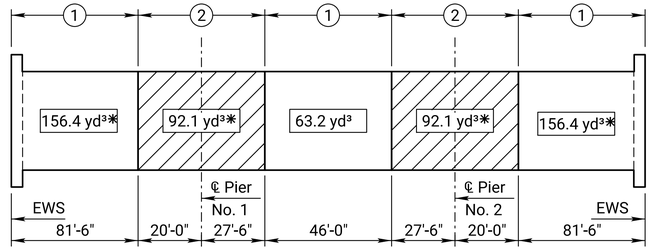
KDOT Graphics Certified

Plotted by: Will.Fehr@ks.gov 10-JUL-2025 15:59
File: ka647401bbr197-17.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	42	101



PRESTRESSED FILLET DIAGRAM
(Along ℄ of Beam)



*Includes Superstructure Portion of Abutment or Pier Diaphragm Concrete

Beam Camber at Release	0.000					0.192					0.000					0.192					0.000					0.192					0.000	Beam Camber at Release
Beam Camber at 50 days	0.000	0.119	0.213	0.282	0.324	0.336	0.321	0.276	0.205	0.108	0.000	0.109	0.207	0.278	0.322	0.336	0.322	0.278	0.207	0.109	0.000	0.108	0.205	0.276	0.321	0.336	0.324	0.282	0.213	0.119	0.000	Beam Camber at 50 days
(Erection Camber) Exterior Beam A Dead Load Deflection	0.000	0.030	0.056	0.077	0.090	0.094	0.089	0.075	0.054	0.027	0.000	0.027	0.054	0.076	0.089	0.094	0.089	0.076	0.054	0.027	0.000	0.027	0.054	0.075	0.089	0.094	0.090	0.077	0.056	0.030	0.000	(Erection Camber) Exterior Beam A Dead Load Deflection
(Deck, Diaphragms, & Fillet) Interior Beam B Dead Load Deflection	0.000	0.038	0.072	0.099	0.115	0.121	0.114	0.096	0.069	0.035	0.000	0.035	0.070	0.097	0.115	0.121	0.115	0.097	0.070	0.035	0.000	0.035	0.069	0.096	0.114	0.121	0.115	0.099	0.072	0.038	0.000	(Deck, Diaphragms, & Fillet) Interior Beam B Dead Load Deflection
(Deck, Diaphragms, & Fillet) Interior Beams C-F Dead Load Deflection	0.000	0.035	0.066	0.090	0.105	0.110	0.104	0.088	0.063	0.031	0.000	0.032	0.064	0.088	0.104	0.110	0.104	0.088	0.064	0.032	0.000	0.031	0.063	0.088	0.104	0.110	0.105	0.090	0.066	0.035	0.000	(Deck, Diaphragms, & Fillet) Interior Beams C-F Dead Load Deflection
(Deck, Diaphragms, & Fillet) Exterior Beam G Dead Load Deflection	0.000	0.028	0.054	0.073	0.085	0.089	0.085	0.071	0.051	0.026	0.000	0.026	0.052	0.072	0.085	0.089	0.085	0.072	0.052	0.026	0.000	0.026	0.051	0.071	0.085	0.089	0.085	0.073	0.054	0.028	0.000	(Deck, Diaphragms, & Fillet) Exterior Beam G Dead Load Deflection

(Deck, Diaphragms, & Fillet)

10 Spa. @ 10'-0" = 100'-0"
10 Spa. @ 10'-1 3/16" = 101'-0"
10 Spa. @ 10'-0" = 100'-0"

℄ Brg. @ Abutment No. 1
℄ Brg. @ Pier No. 1
℄ Brg. @ Pier No. 2
℄ Brg. @ Abutment No. 2

K4+3 BEAM CAMBER AND DEAD LOAD DEFLECTION

Note: Camber is Upward
Deflection is Downward
Ordinates are in feet

NOTE: Concrete dead load deflection shall be added to the plan grade to provide for deflections. This will be accomplished by increasing or decreasing the depth of the concrete fillets over the beams, the minimum depth of the slab over the beam should be 8½".

Beam Concrete: Ei = 4,074 ksi (f'ci = 5.0 ksi)
Ef = 4,463 ksi (f'ci = 6.0 ksi)

CAMBER: Construct the finished deck to plan grade by varying the depth of the fillet over the beam to provide for prestress camber, concrete dead load deflection and, if necessary, vertical curvature. After the prestressed beams are erected measure the camber in the field by taking a profile of each beam. Correct any variation between the actual camber and concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the beam so that the finished floor is constructed to the theoretical grade. The minimum depth of the slab over the beam shall be 8½ inches. Prior to shipping, the camber shall be no greater than the design camber plus ½". The design camber is equal to the 50 day camber shown in the plans.

The theoretical amount of concrete required for the fillets is 27.4 C.Y. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

CONCRETE PLACING SEQUENCE: Segmental, combined or continuous pours are allowed by an approved alternate placing sequence. Any discontinuous pour must stop at a construction joint short of a pier.

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

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

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Auxiliary Slab Details

Proj. 900-8 KA-6474-01 Butler Co.

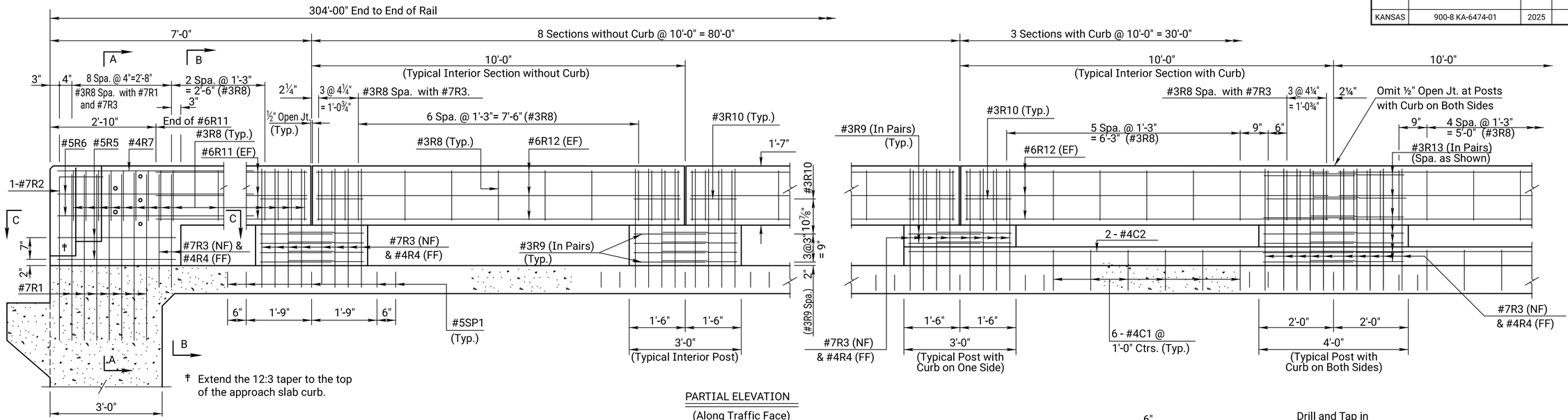
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File : ka6474401bbr197-18.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	43	101

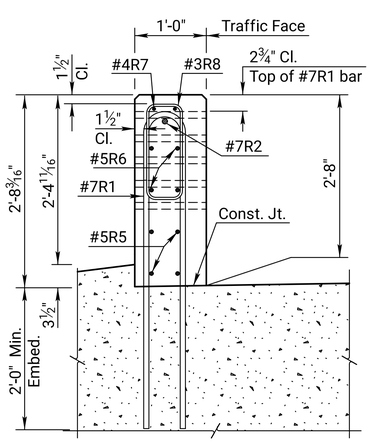


† Extend the 12:3 taper to the top of the approach slab curb.

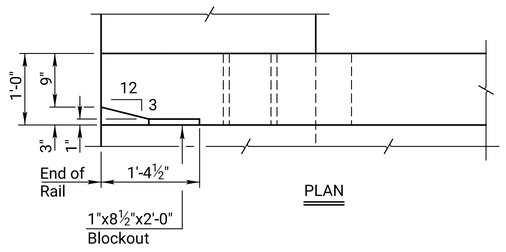
PARTIAL ELEVATION
(Along Traffic Face)

LEGEND

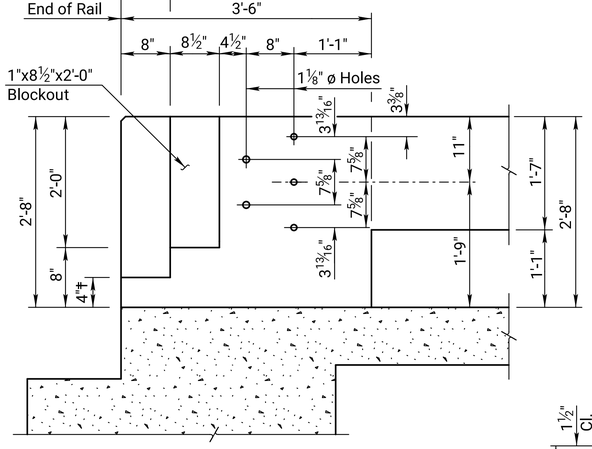
NF = Near Face
FF = Far Face
EF = Each Face



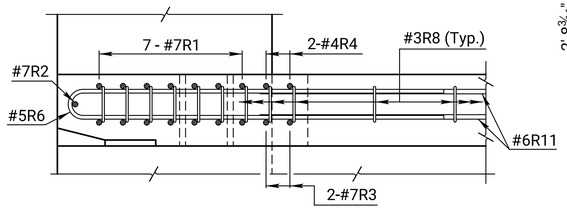
SECTION A-A



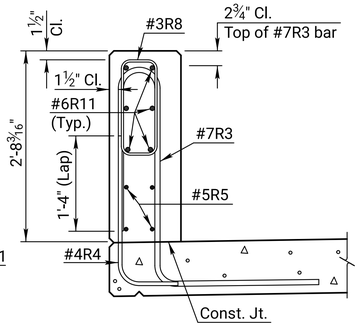
PLAN



ELEVATION
(Dimensions at traffic face of rail.)



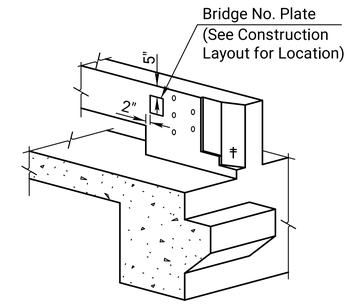
SECTION C-C



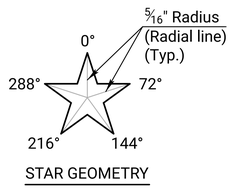
SECTION B-B

XX Year Bridge is Completed.

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



BRIDGE NUMBER PLATE PLACEMENT DETAIL



STAR GEOMETRY

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Corral Rail Details
Sheet No. 1

Proj. 900-8 KA-6474-01 Butler Co.

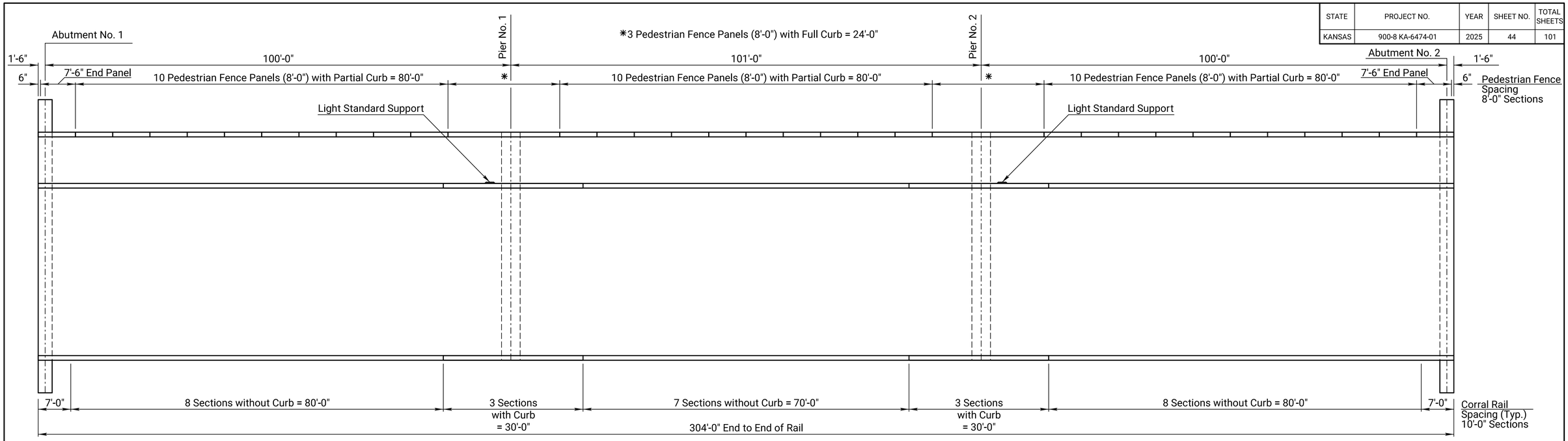
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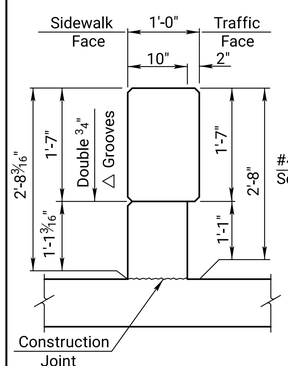
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Plotted by : Will.Fehr@ks.gov 10-JUL-2025 16:01
File : ka647401bbr197-19.dgn

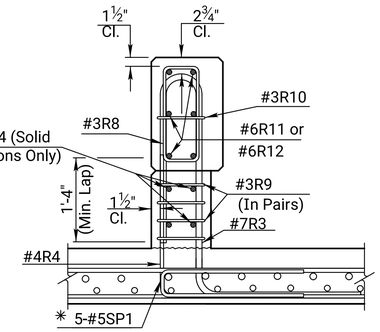
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	44	101



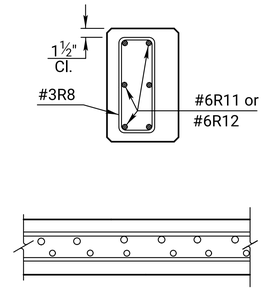
PLAN VIEW SHOWING RAIL SECTION LOCATIONS



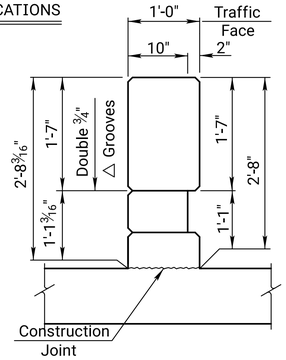
TYPICAL INTERIOR POSTS
(North Rail, Post without Curb)



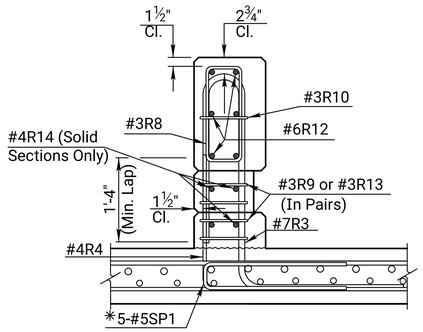
SECTION THRU POSTS
(North Rail, Post without Curb)



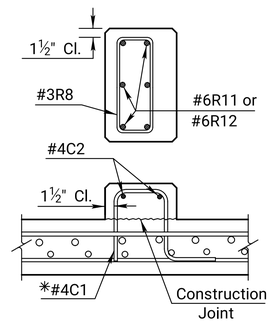
TYPICAL SECTION BETWEEN POSTS
(North Rail, Open Section without Curb)



TYPICAL INTERIOR POSTS
(North Rail, Post with Curb)

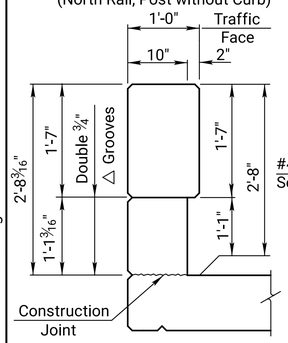


SECTION THRU POSTS
(North Rail, Post with Curb)

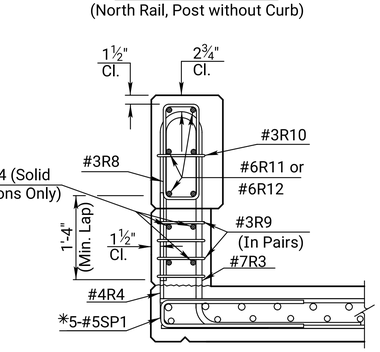


TYPICAL INTERIOR POSTS
(North Rail, Open Section with Curb)

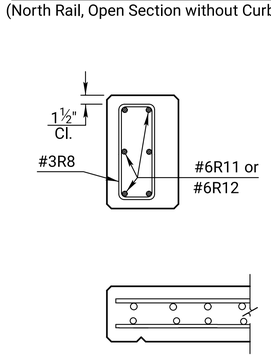
* The hook may be canted to provide clearance and/or fit between reinforcing.



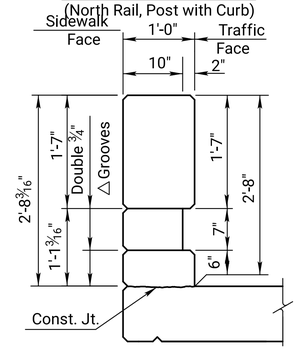
TYPICAL INTERIOR POSTS
(South Rail, Post without Curb)



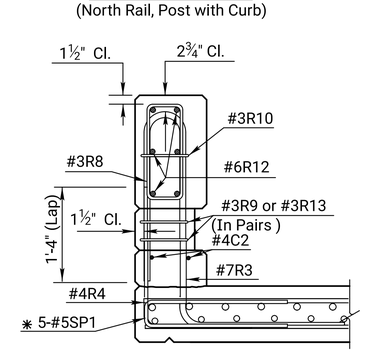
SECTION THRU POSTS
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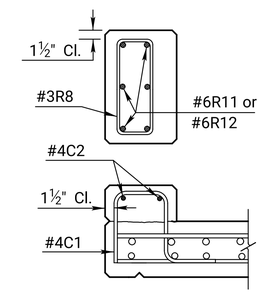
TYPICAL SECTION BETWEEN POSTS
(South Rail, Open Section without Curb)



TYPICAL INTERIOR POSTS
(South Rail, Post with Curb)



SECTION THRU POSTS
(South Rail, Post with Curb)



TYPICAL SECTION BETWEEN POSTS
(South Rail, Open Section with Curb)

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Corral Rail Details
Sheet No. 2

Proj. 900-8 KA-6474-01 Butler Co.

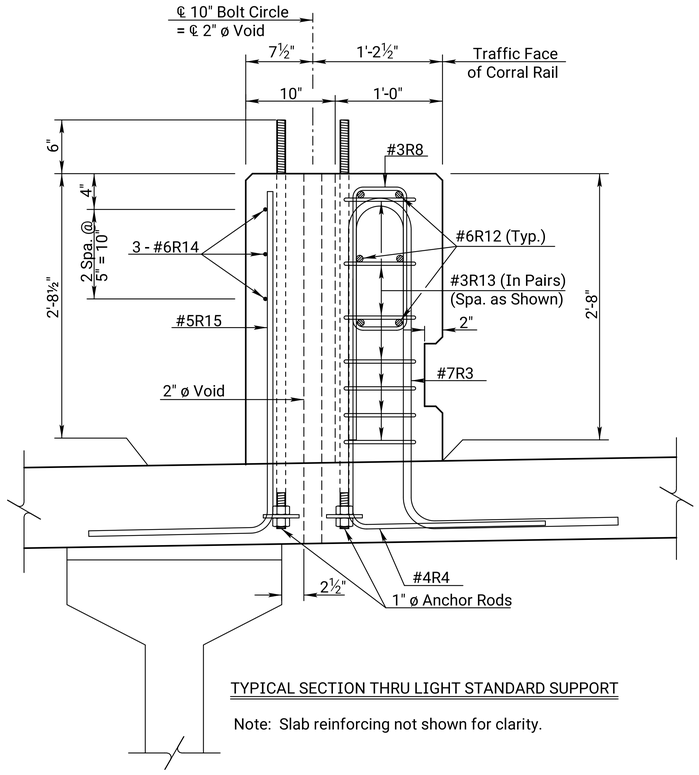
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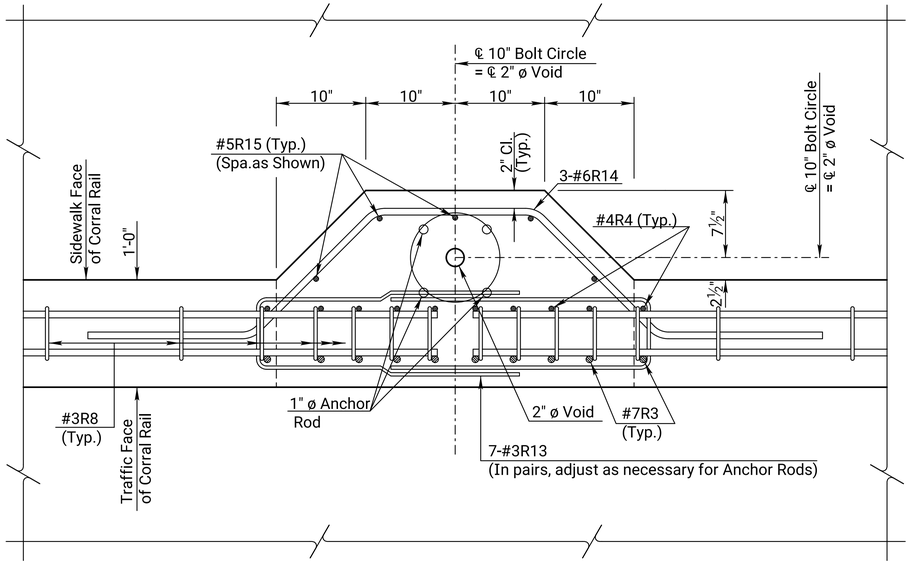
Plotted by : Will.Fehr@ks.gov 10-JUL-2025 16:01
File : ka647401bbr197-20.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	45	101



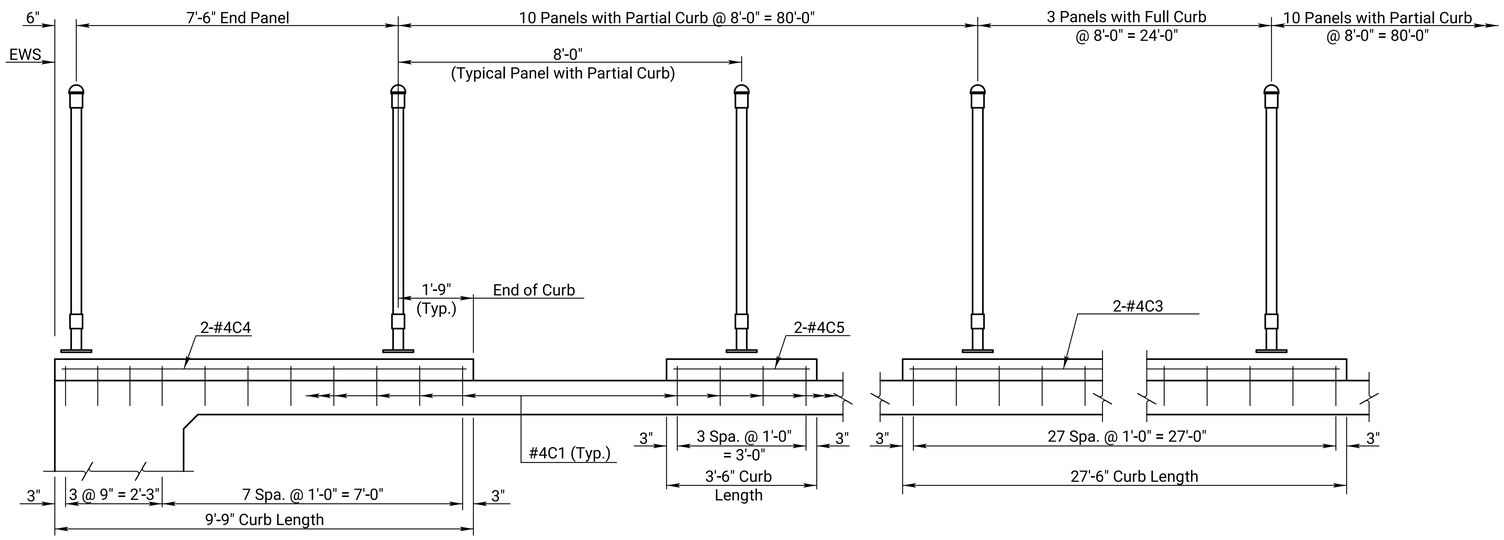
TYPICAL SECTION THRU LIGHT STANDARD SUPPORT

Note: Slab reinforcing not shown for clarity.



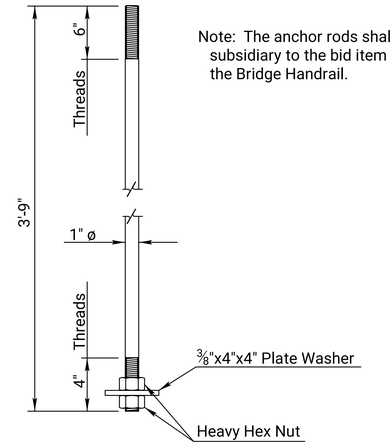
PLAN VIEW OF LIGHT STANDARD SUPPORT

LIGHT STANDARD STATIONING	
Station	Corral Rail
100+11.50	North
101+21.50	North



ELEVATION VIEW
(Along Traffic Face)

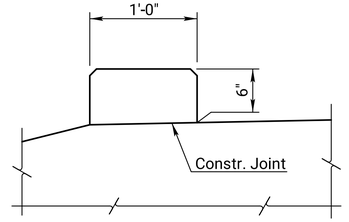
See Corral Rail Details Sheet No. 2 for complete Pedestrian Fence Spacing.



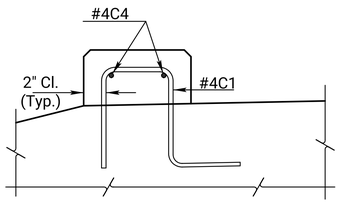
ANCHOR ROD DETAIL
(8 Required)

Note: The anchor rods shall be subsidiary to the bid item for the Bridge Handrail.

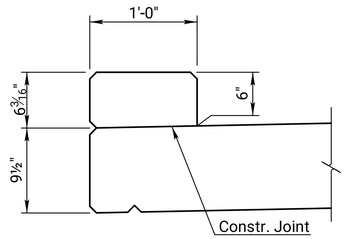
Note: The anchor rods shall meet the requirements for AASHTO M314 Grade 55. The nuts shall meet the requirements for ASTM A 563. The plate washer shall meet the requirements for ASTM 709 Gr. 36. The anchor rods, washers and plate washers shall be galvanized according to KDOT specifications.



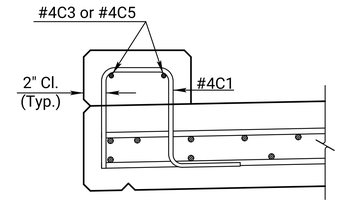
TYPICAL CURB SECTION AT ABUTMENT



TYPICAL CURB SECTION AT ABUTMENT



TYPICAL CURB SECTION ON SLAB



TYPICAL CURB SECTION ON SLAB

LEGEND

EF = Each Face

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Light Standard Support and Fence Details

Proj. 900-8 KA-6474-01 Butler Co.

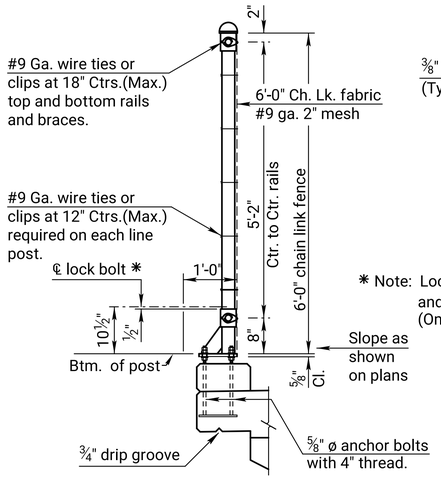
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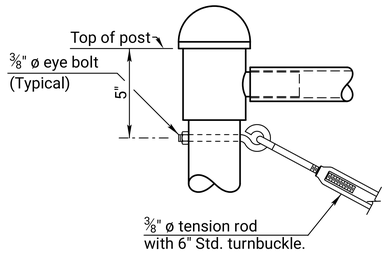
KDOT Graphics Certified

Plotted by : Will.Fehr@ks.gov 10-JUL-2025 16:02
File : ka647401bbr197-21.dgn

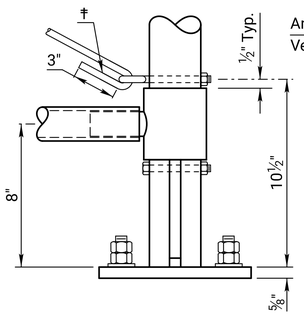
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	46	101



TYPICAL SECTION

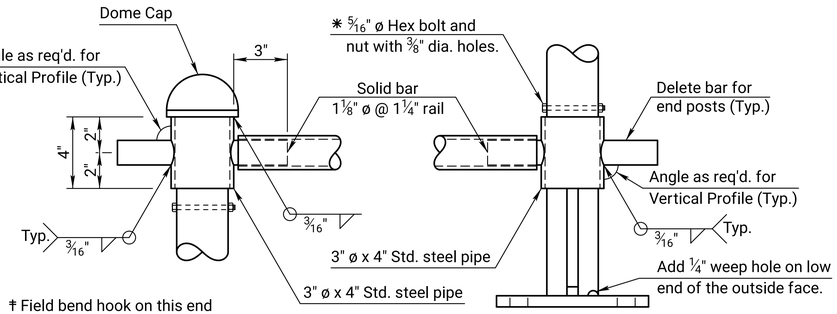


✱ Note: Lock bolt shall be ⅝" ø hex head bolt and nut. Bolt holes shall be ⅜" diameter. (Omit at pull post & end post.)



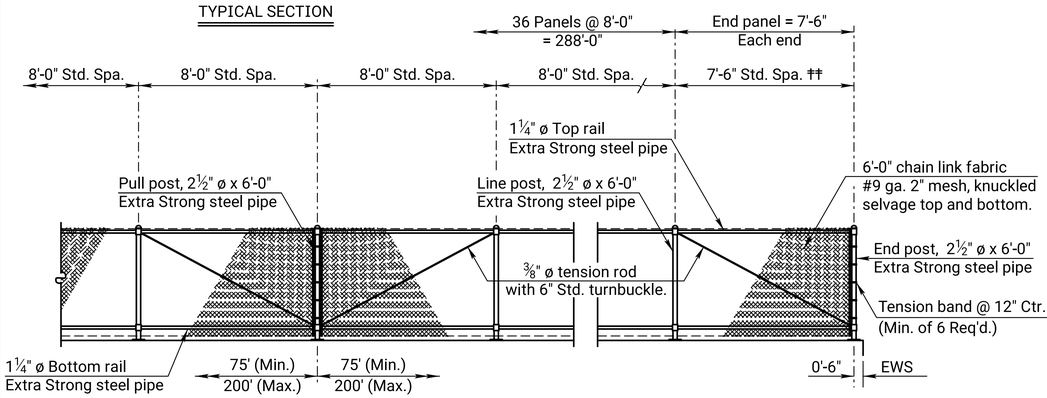
TENSION ROD DETAIL

‡ Field bend hook on this end to fit. Shorten as required to achieve 3" tangent.



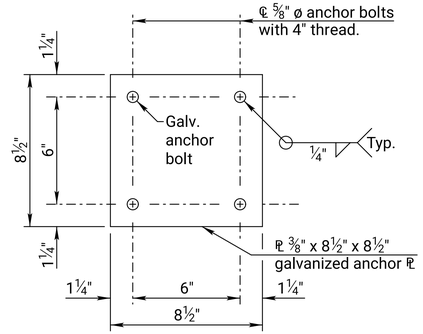
POST - RAIL CONNECTION

†† With the approval of the Engineer, End Panel spacing may be 6'-0" min. - 9'-0" max.

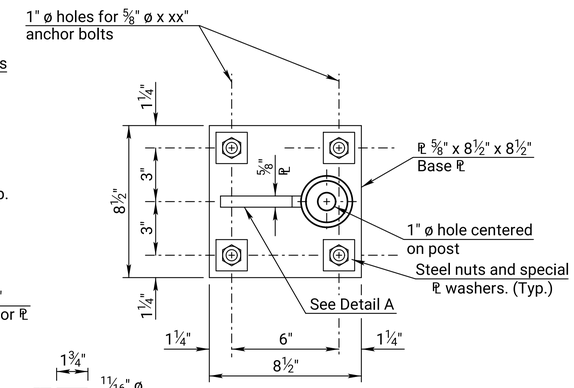


PULL POST SPACING

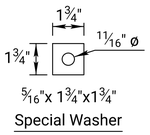
PART ELEVATION



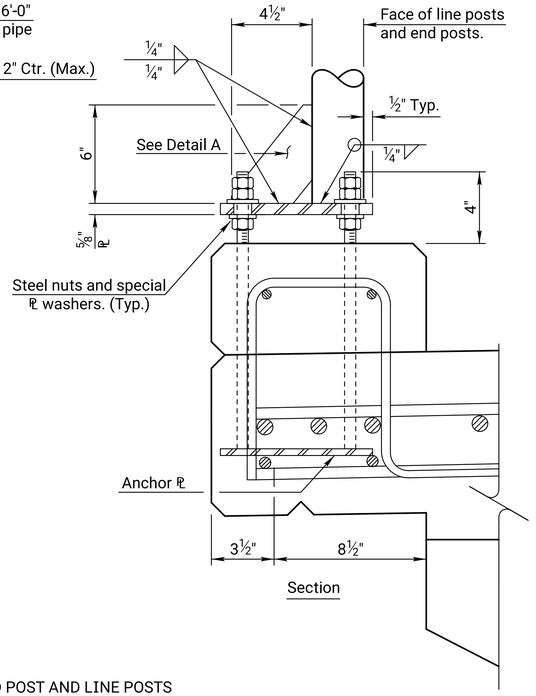
ANCHOR PLATE



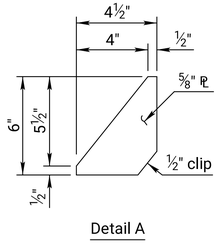
Plan



⅝"x 1¾"x1¾" Special Washer



Section



Detail A

BASE PLATE DETAILS FOR END POST AND LINE POSTS

GENERAL NOTES

FENCE (CHAIN LINK) (6') (SPECIAL): The chain link fence on the sidewalk shall be bid per lineal foot as per bid item, "Fence (Chain Link) (6') 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 pedestrian 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 A 153 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.

SUMMARY OF QUANTITIES	
Fence (Chain Link)(6') Special	303'-0" Lin. Ft.

Dead Load = 19 Lbs./Ft.
Loads applied in accordance with 2007 AASHTO Specs.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Pedestrian Fence Details

Proj. 900-8 KA-6474-01 Butler Co.

DESIGNED	WDF	DETAILED	WDF	QUANTITIES	WDF	CADD	WDF
DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

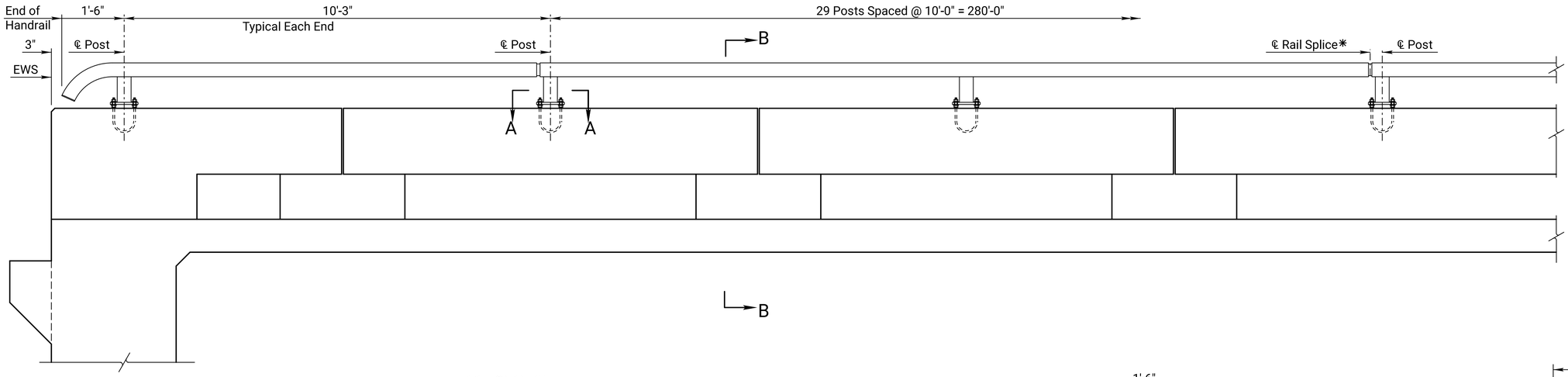
KDOT Graphics Certified 07-10-2025 Sh. No. 46

KDOT Graphics Certified

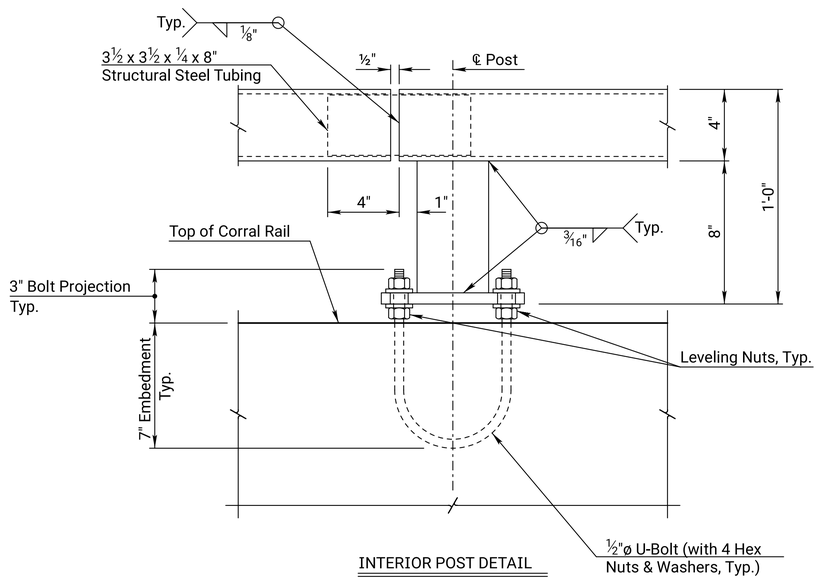
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File : ka647401bbr197-22.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	47	101

*Provide Rail Splice at every other handrail post.

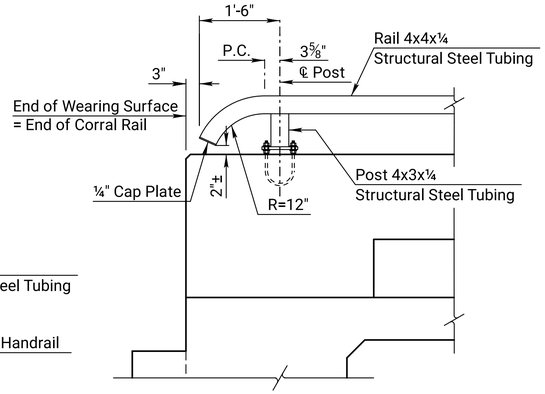


ELEVATION VIEW
(Along Traffic Face)

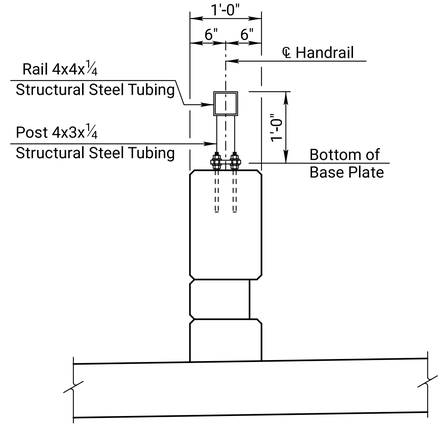


INTERIOR POST DETAIL

SECTION A-A



END POST DETAIL



SECTION B-B

Notes:

The Bridge Handrail shall be bid per linear foot as per bid item "Bridge Handrail (Metal)(1'-0"). This item shall include the furnishing of all material, fabrication of all parts, and all equipment and labor required to erect the handrail in accordance with these plans and specifications.

All portions of the Bridge Handrail shall be galvanized after fabrication, and all welds shall be free from slag holes prior to galvanization. Galvanization shall conform to KDOT's Standard Specifications.

All U-bolts, hex nuts, and washers shall be galvanized in accordance with ASTM A153 and shall conform to ASTM A307 or A36.

Tube shapes for posts and rails shall conform to ASTM A500, Grade B. Miscellaneous steel plates and bars shall conform to ASTM A36.

Construct the handrail according to Section 721 of the KDOT Standard Specifications. Set the rail parallel to the top of the corral rail. Set all posts vertical, both in and out of plane of the hand rail. Field welding is not permitted.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

Metal Handrail Details

Proj. 900-8 KA-6474-01 Butler Co.

DESIGNED	WDF	DETAILED	WDF	QUANTITIES	WDF	CADD	WDF
DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

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File : ka647401bbr197-23.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	48	101

BILL OF REINFORCING STEEL
Grade 60 (Epoxy Coated)

		Straight Bars			Bent Bars			
	Mark	Size	Number	Length	Mark	Size	Number	Length
Superstructure / Abutment	A4	8	32	37'-10"	A9	8	16	10'-6"
	A10	8	8	38'-9"				
	A11	8	8	27'-11"	A1	5	112	18'-0"
					A2	5	28	12'-11"
	AD1	8	4	27'-6"	A3	5	140	7'-4"
	AD2	8	4	19'-5"	A6	5	112	11'-4"
					A7	5	28	6'-8"
	A5	5	16	36'-11"	A14	5	36	7'-2"
	A8	5	20	36'-11"	A16	5	88	5'-4"
	A12	5	20	11'-7"				
	A13	5	60	5'-2"	A15	4	88	4'-3"
	A17	5	2	47'-6"				
Deck	S5	7	72	60'-0"	S1	8	64	13'-0"
	S6	7	128	57'-6"				
					S2	7	72	19'-9"
	S10	6	298	48'-8"				
					S3	6	64	21'-9"
	S4	5	108	59'-0"				
	S7	5	140	17'-3"				
	S8	5	350	40'-0"				
	S9	5	140	45'-0"				
	S11	5	596	48'-8"				
	S12	5	298	48'-8"				
Rail and Curb	R11	6	24	4'-0"	R1	7	28	9'-3"
	R12	6	348	9'-8"	R2	7	4	5'-7"
					R3	7	496	7'-8"
	C2	4	8	32'-8"				
	C3	4	4	27'-2"	R14	6	6	7'-6"
	C4	4	4	9'-5"				
	C5	4	54	3'-2"	R5	5	8	6'-6"
					R6	5	8	10'-9"
					R15	5	10	4'-2"
					SP1	5	300	4'-5"
					R4	4	496	4'-2"
					R7	4	4	10'-9"
					C1	4	258	3'-5"
					R8	3	818	4'-4"
					R9	3	384	4'-6"
					R10	3	104	4'-6"
					R13	3	56	5'-6"
Pier Diaphragm	PD7	8	56	4'-2"	PD1	5	12	4'-0"
	PD2	6	48	5'-2"	PD6	4	64	14'-2"
	PD3	5	72	6'-6"				
	PD4	5	4	47'-8"				
	PD5	4	48	2'-6"				

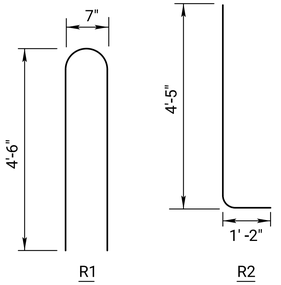
BILL OF REINFORCING STEEL
Grade 60 (Non-Epoxy Coated)

		Straight Bars			Bent Bars			
	Mark	Size	Number	Length	Mark	Size	Number	Length
Substructure / Pier Beam	PB1	8	4	46'-6"	PB4	8	4	49'-2"
	PB2	8	4	49'-2"	PB5	8	4	51'-10"
	PB3	8	10	50'-0"	PB6	8	10	52'-8"
	PB8	6	16	46'-6"	PB7	6	376	9'-5"
	PB9	6	128	5'-8"				
	PB12	6	16	50'-0"	PB11	5	20	10'-11"
	PB10	5	16	4'-2"				
Pier Wall	PW6	6	12	10'-8"	PW5	5	66	4'-8"
	PW1	5	120	3'-8"	PS1	3	8	*
	PW2	5	120	7'-4"				
	PW3	5	168	10'-8"				
	PW4	5	132	14'-8"				
	PC1	9	80	20'-7"				

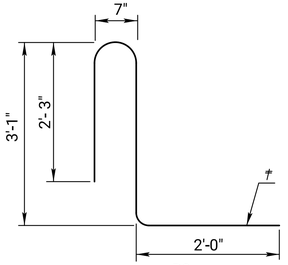
* See Bending Diagram

BENDING DIAGRAMS
All dimensions are out to out of bars.

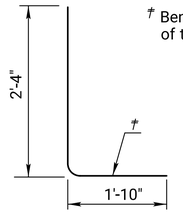
† Bend this leg to match the slope of the roadway.



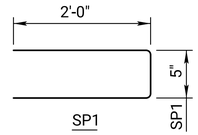
R1 R2



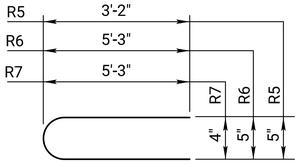
R3



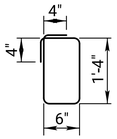
R4
(Lap 1'-4" with R3)



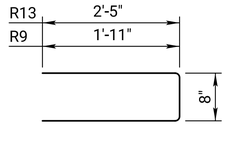
SP1



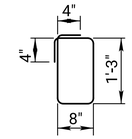
R5, R6, R7



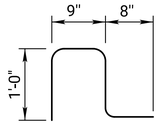
R8



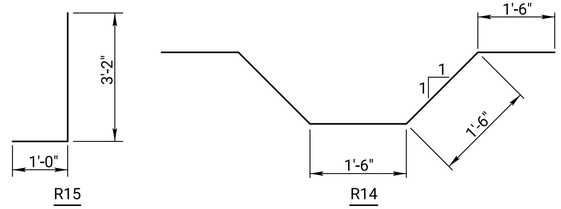
R9, R13



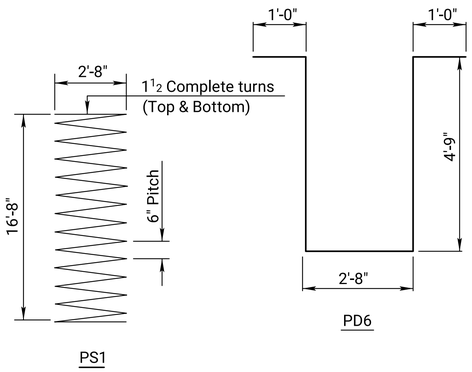
R10



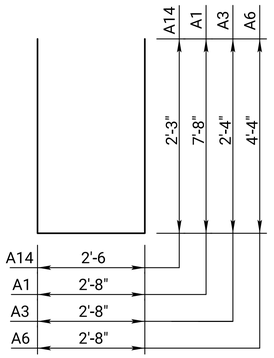
C1



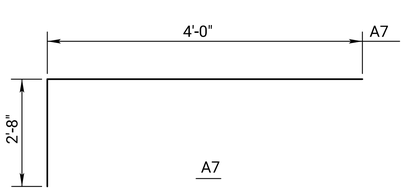
R15 R14



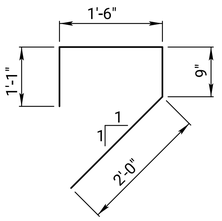
PS1 PD6 A2



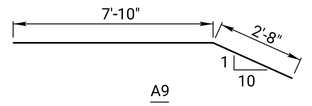
A14, A1, A3, A6, PD1



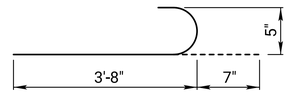
A7



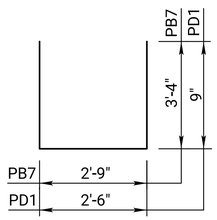
A16



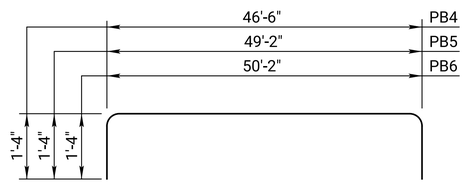
A9



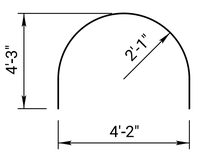
A15



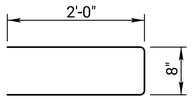
PB7, PD1



PB4, PB5, PB6



PB11



PW5

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 900-8-2.00 (197) Sta. 100+66.50

BILL OF REINFORCING AND BENDING DIAGRAM

Proj. 900-8 KA-6474-01 Butler Co.

DESIGNED	WDF	DETAILED	WDF	QUANTITIES	WDF	CADD	WDF
DESIGN CK.	JAB	DETAIL CK.	JAB	QUAN.CK.	JAB	CADD CK.	JAB

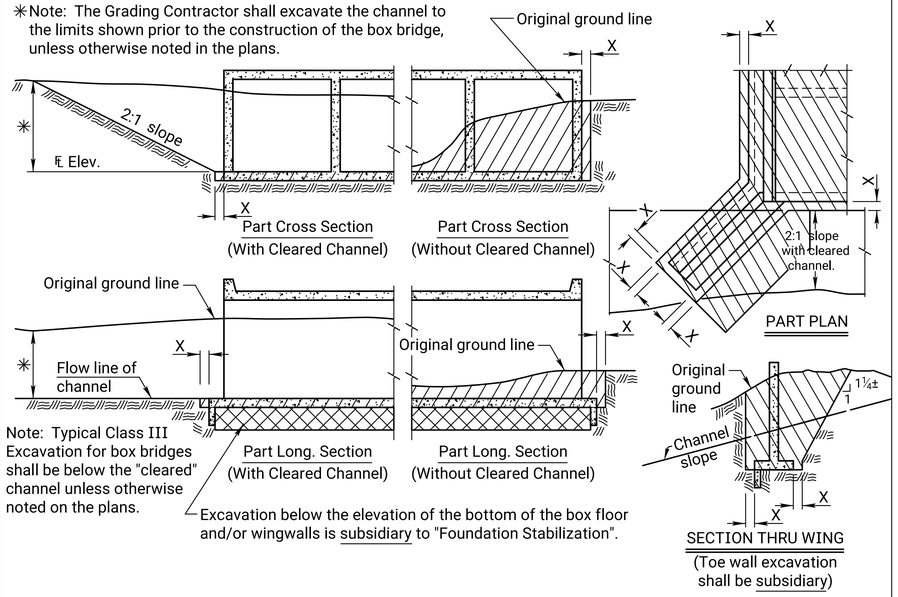
KDOT Graphics Certified 07-09-2025 Sh. No. 48

KDOT Graphics Certified

Plotted by : Will.Fehr@ks.gov 10-JUL-2025 16:01
File : ka647401bbr197-24.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	49	101

✳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.

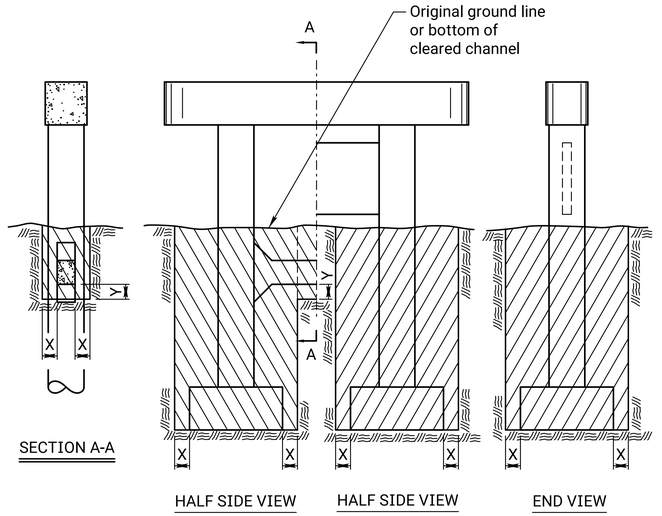


Note: Typical Class III Excavation for box bridges shall be below the "cleared" channel unless otherwise noted on the plans.

Excavation below the elevation of the bottom of the box floor and/or wingwalls is subsidiary to "Foundation Stabilization".

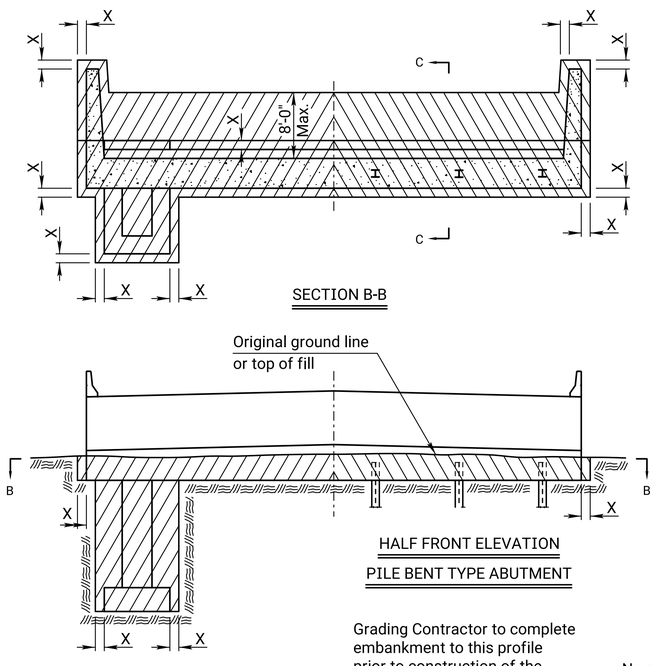
EXCAVATION DETAILS FOR REINFORCED CONCRETE BOX CULVERT

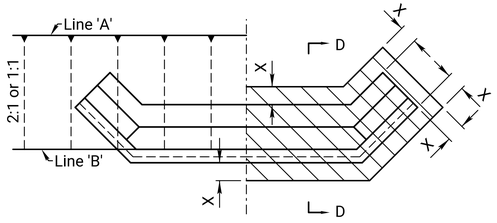
Note: Excavation for culverts less than bridge length and the additional excavation for "Embedded Structures" shall not be paid for as Class III Excavation, but shall be subsidiary to Grade 4.0 Concrete.

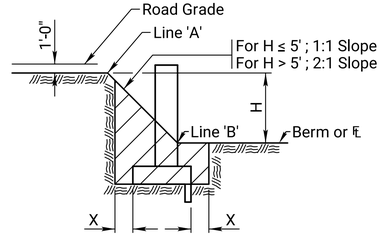


EXCAVATION DETAILS FOR TYPICAL PIERS

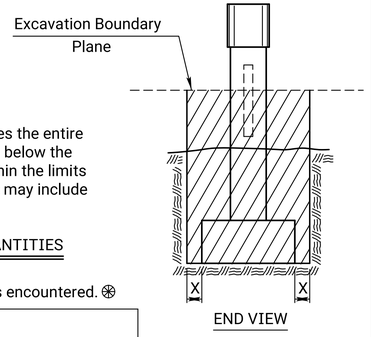
See detail when rock or shale (rock) is encountered. ❀







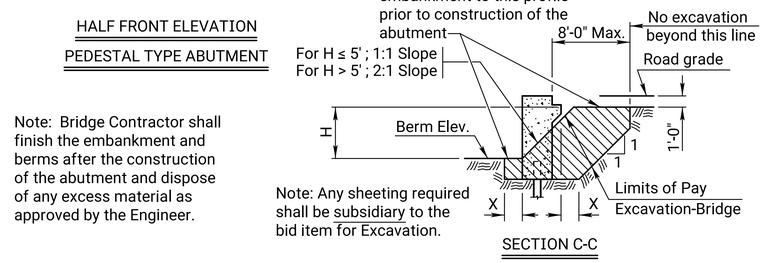
EXCAVATION DETAILS FOR ABUTMENTS WITH FLARED WINGWALLS



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. ❀



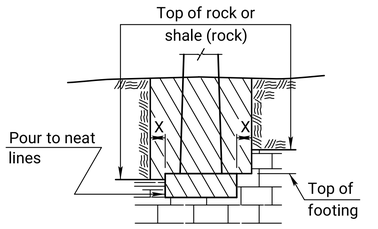
HALF FRONT ELEVATION
PEDESTAL TYPE ABUTMENT

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

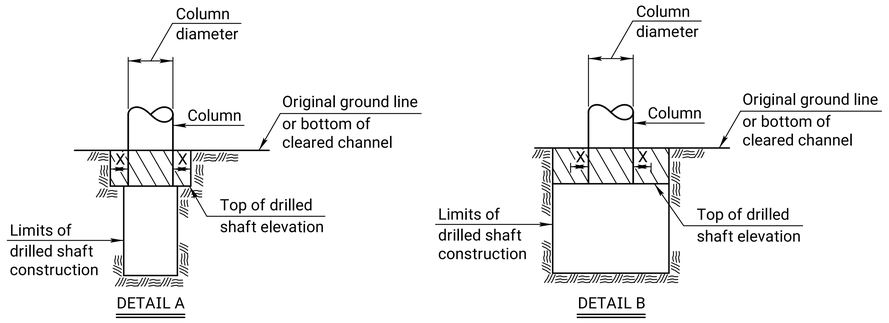
See detail when rock or shale (rock) is encountered. ❀



❀ EXCAVATION 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.	

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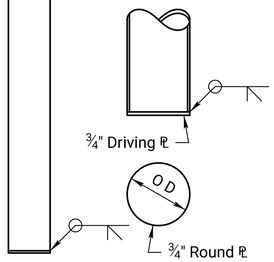
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	50	101

O D 10¾" T. = ††
O D 12¾" T. = ††
O D 14" T. = ††

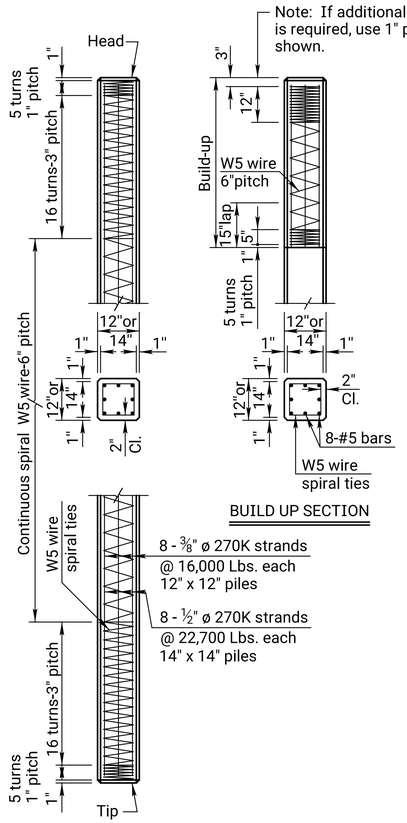
†† See the Geology Report or "Summary of Quanities" for Pipe Pile wall thickness

Note:
Pile shall be driven with a steel head having a projecting ring fitting inside the pipe. Clearance between ring and pipe should be ¼".

Note:
Pile pipe may be spiral welded, longitudinal welded, or seamless steel pipe.

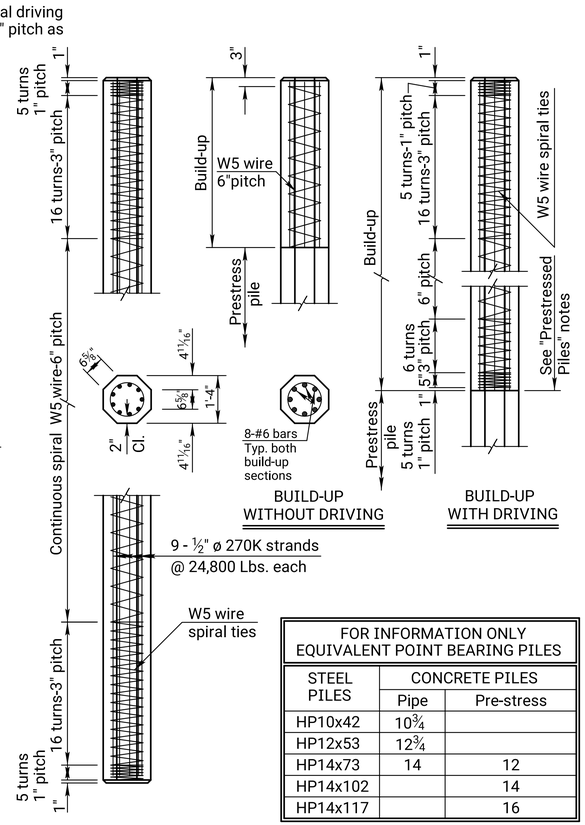


PLAIN ROUND
CAST-IN-PLACE CONCRETE PILES



12" OR 14"
PRESTRESSED
CONCRETE PILES

BUILD UP SECTION

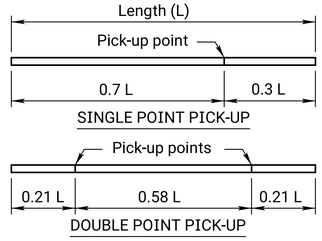


16" PRESTRESSED
CONCRETE PILES

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.

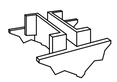


Outside Flange



Inside Flange

SHELL PILE POINT



H-Pile Point

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.

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.

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.

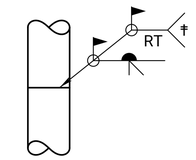
MILL TEST REPORTS: Steel piles test reports and steel shell test reports shall comply with the Standard Specifications.

SPLICES: Splices for steel piles and shell piling shall be in accordance with details shown on this sheet and the Standard Specifications.

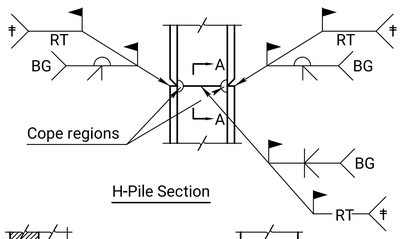
For integral pile bent abutments and piers, if a pile splice is required, do not locate the pile splice within a region extending 2'-0" above and 10'-0" below the bottom of the concrete web wall. For abutments, locate the pile splice at least 10'-0" below top of fill.

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.

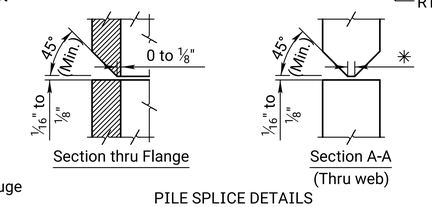
† For integral pile bent abutments and piers, if a splice is located within the regions described above, then the Contractor will test the welds by Radiograph (RT) test methods. Repair and retest any welds not passing the test(s). Each weld tested will have written confirmation of results. Report these results to the Engineer. This work is not paid for directly, but is subsidiary to "Piles".



Pipe Section



H-Pile Section



✳ 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

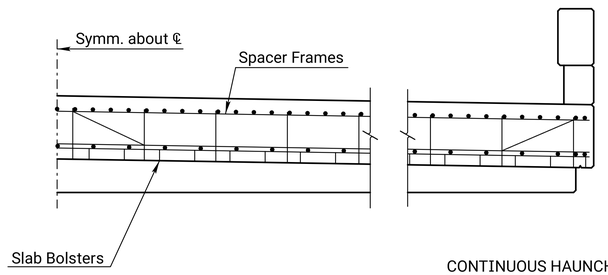
FHWA APPROVAL		10-04-12	APP'D.	Terry L. Fleck
DESIGNED	J.P.J.	DETAILED	QUANTITIES	TRACED R.A.A.
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.

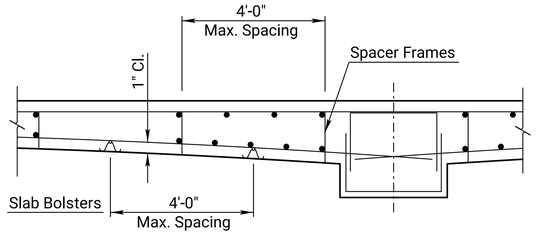
KDOT Graphics Certified 06-20-2022 Sh. No. 50

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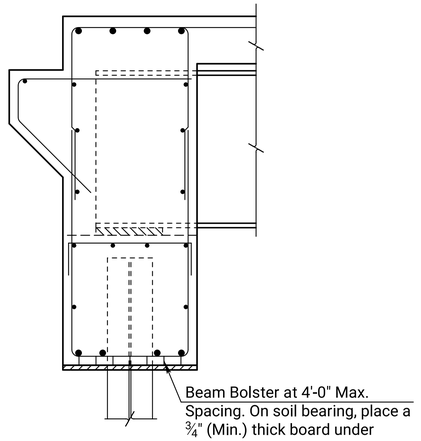
Plotted by : Will.Fehr@ks.gov 10-JUL-2025 16:01
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	51	101

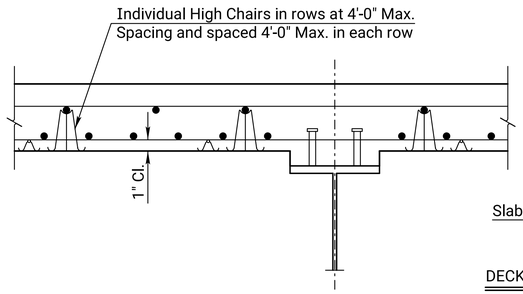


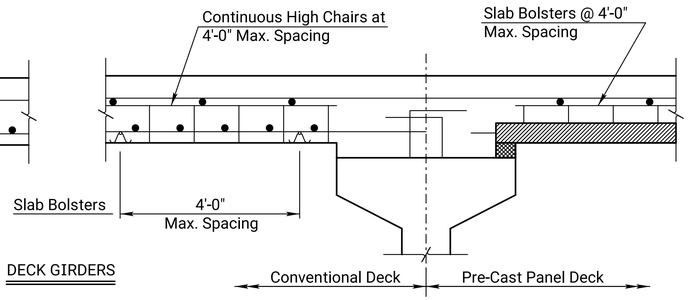


CONTINUOUS HAUNCHED SLAB

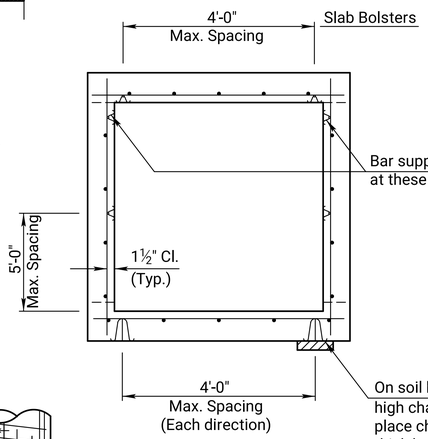


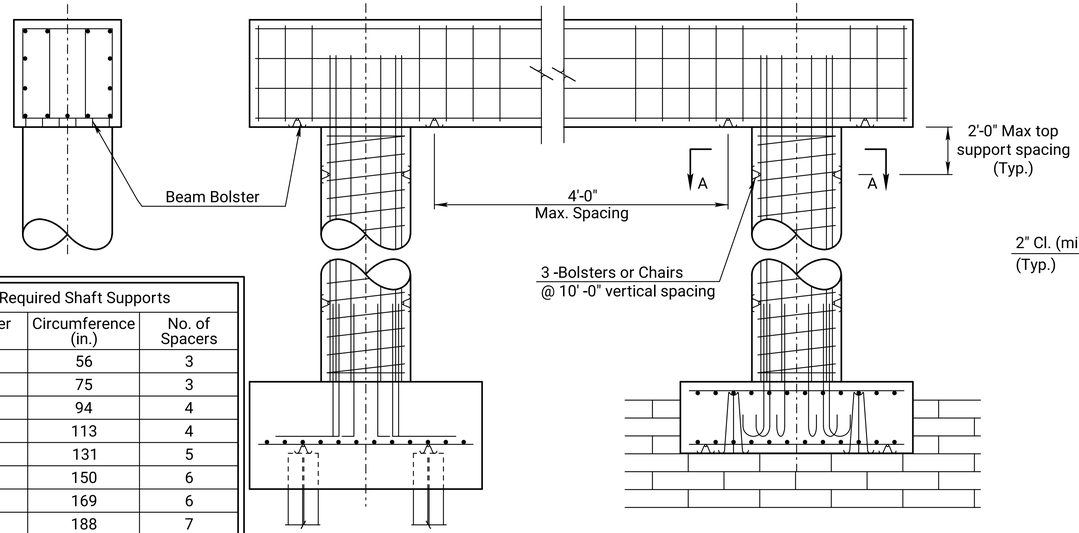
ABUTMENT





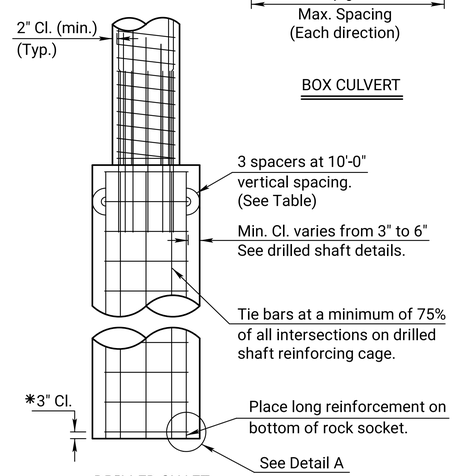
DECK GIRDERS





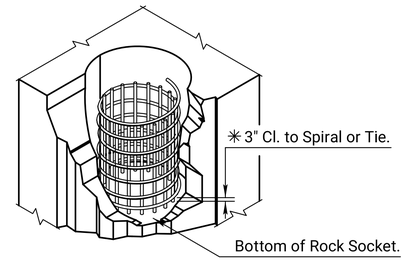
PIER

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



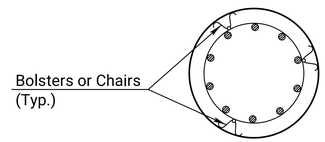
DRILLED SHAFT

BOX CULVERT



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 ¼" of that indicated on the plans.

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

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

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

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.

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File : ka647401bss197-03.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	52	101

EARTHWORK

STATION to STATION	EXCAVATION					COMPACTION			NOT SUBGRADED THROUGH CUTS			⚹ EMBANKMENT (CU.YDS.)		⚠ PLACE. SELECT SOIL CU.YDS.
	COMMON		ROCK		CONTR. FURN. CU.YDS.	TYPE AA MR-5-5 CU.YDS.	TYPE A MR-5-5 CU.YDS.		COMM. CU.YDS.	TYPE AA CU.YDS.		INITIAL CONSOL.	SETTLE-MENT	
	CU.YDS.	VMF	CU.YDS.	VMF										
97+50 (Field Entrance Rt.)	110	0.80			1068		942							
97+00 to 99+14.50	76	0.80	117	1.0	245	120	235		98	98				
102+18.50 to 105+50	591	0.80	195	1.0	2833	297	2613		171	171				
TOTALS	777		312		4146	417	3790		269	269				

⚹ Subsidiary (see General Note). ⚠ See General note.

SALVAGED TOPSOIL

STATION TO STATION	SIDE	AREA (SQ. YD.)
96+67 to 98+50	Rt.	1277
97+00 to 98+81.50	Lt.	126
102+50 to 105+50	Rt.	1390
102+18.50 to 105+50	Lt.	2147
	TOTAL	4940

RECAPITULATION OF BRIDGE QUANTITIES

BRIDGE NUMBER	STATION	SEE SHEET NO.
900-8-2.00 (197)	100+66.50	25

STEEL PLATE GUARDRAIL

STATION to STATION	SIDE	LENGTH (FT.)	FLARE	END TERMINAL			
				MGS-MKST (ALT. #1)	MGS-SOFTSTOP (ALT. #2)	MGS-SRT (ALT. #1)	MGS-FLEAT (ALT. #2)
98+10 to 99+14.50	Rt.	62.50	21:1			1	1
98+29 to 99+14.50	Lt.	37.50	50:1	1	1		
102+18.50 to 103+10	Rt.	50	11:1			1	1
102+18.50 to 103+42	Lt.	75	50:1	1	1		
TOTALS		225		2	2	2	2

SLOPE PROTECTION (RIPRAP STONE)

STATION TO STATION	SIDE	SQ. YD.	THICKNESS (FT.)	CU. YD.
98+00 to 99+14.50	Lt.	243	1.5	122
			TOTAL	122

RECAPITULATION OF ROAD QUANTITIES

	ITEM	QUANTITY	UNIT
	Contractor Construction Staking	Lump Sum	Lump Sum
	Field Office & Laboratory (Type A)	1	Each
	Foundation Stabilization (Set Price)	1	Cu. Yd.
	Mobilization	Lump Sum	Lump Sum
	Mobilization (DBE)	Lump Sum	Lump Sum
	Removal of Existing Structures	Lump Sum	Lump Sum
⚠	Maintenance & Restoration of Haul Roads (Set Price)	Lump Sum	Lump Sum
	Concrete for Seal Course (Set Price)	1	Cu. Yd.
	Clearing and Grubbing	Lump Sum	Lump Sum
	Common Excavation (Rural Small)	1046	Cu. Yd.
	Common Excavation (Contractor Furnished)	4146	Cu. Yd.
	Rock Excavation	312	Cu. Yd.
	Compaction of Earthwork (Type A) (MR-5-5)	3790	Cu. Yd.
	Compaction of Earthwork (Type AA) (MR-5-5)	686	Cu. Yd.
	Water (Grading) (Set Price)	1	M. Gal.
	Salvaged Topsoil	4940	Sq. Yd.
	End Section (24") (RC)	2	Each
	Entrance Pipe (24") (RCP)	120	Lin. Ft.
	Guardrail, Steel Plate (MGS)	225	Lin. Ft.
	Guardrail, End Terminal (MGS-MSKT) (Alt. #1)	2	Each
	Guardrail, End Terminal (MGS-SOFTSTOP) (Alt. #2)	2	Each
	Guardrail, End Terminal (MGS-SRT) (Alt. #1)	2	Each
	Guardrail, End Terminal (MGS-FLEAT) (Alt. #2)	2	Each
	Slope Protection (Riprap Stone)	122	Cu. Yd.
	Slope Drain (Stone)	197	Lin. Ft.
	Flume Inlet (Concrete)	4	Each
	Temporary Surfacing Material (Aggregate) (Set Price)	1	Cu. Yd.
	Mowing	0.3	P.M.P.S.
	Concrete Pavement (10" Uniform) (AE) (Br. App.)	267	Sq. Yd.
	Bridge Approach Slab Footing	42.7	Cu. Yd.
	Curing Environment	Lump Sum	Lump Sum
	For Bridge Quantities, See Sh. No. 25 For Surfacing Quantities, See Sh. No. 53 For Erosion Control Quantities, See Sh. No. 54 For Seeding Quantities, See Sh. No. 64 For Signing Quantities, See Sh. No. 72 For Pavement Marking Quantities, See Sh. No. 77 For Traffic Control Quantities, See Sh. No. 89		

⚠ Non-Participating

SLOPE DRAIN (STONE)

LOCATION	STATION	SIDE	LIN. FT.
K-900	98+83.51	Rt.	41
K-900	98+83.51	Lt.	36
K-900	102+49.49	Rt.	63
K-900	102+49.49	Lt.	57
		TOTAL	197

FLUME INLET (CONCRETE)

LOCATION	STATION	SIDE	QUANTITY
K-900	98+83.51	Rt.	1
K-900	98+83.51	Lt.	1
K-900	102+49.49	Rt.	1
K-900	102+49.49	Lt.	1
		TOTAL	4

CONCRETE PAVEMENT (10" UNIFORM) (AE) (BR. APP.)

STATION TO STATION	SQ. YD.	BRIDGE APPROACH SLAB FOOTING (CU. YD.)
98+81.50 to 99+14.50	133.4	21.3
102+18.50 to 102+51.50	133.4	21.3
TOTALS	266.8	42.7

✱REMOVAL OF EXISTING STRUCTURES

STATION OR RANGE	SIDE	DESCRIPTION
97+78	Rt.	24" x 76' EP (RCP)
98+83.25	℄	2.35' x 2' Grate Inlets & 15" CMP Lt.
102+76.75	℄	2.35' x 2' Grate Inlets & 15" CMP Lt.
98+25 to 104+50	℄	Appx. 490' of Existing Guardrail
102+80	℄	Br. No. 900-8-2.00 (169)
		For additional removals, see Sh. No. 71

✱See General Note
The listing shown may not be complete. Payment for structures or obstructions not listed but whose removal is required by theconstruction, as determined by the engineer, should not be paid for directly, but should be included in the bid item "Removal of Existing Structures."

DRAINAGE STRUCTURES

LOCATION	STATION	SIDE	SIZE	TYPE	ENTRANCE PIPES (FT.) RCP 18"	RCP 24"	RCP 36"			END SECTIONS (EACH) ◔ 18"	◔ 24"	◔ 36"	TYPE I Lt.	TYPE I Rt.	CROWN GRADE	FLOWLINE ELEVATION Lt.	FLOWLINE ELEVATION Rt.	DEGREE OF ROTATION	HEIGHT OF FILL (FT.)	REMARKS
℄ K-900	97+50	Rt.	24"	RCP		120					2		1	1	1299.94'	1291.44	1292.05	0°	5.5	
				TOTALS		120					2									

◔ See Pipe Culvert Summary for allowable End Section types.

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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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	53	101

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

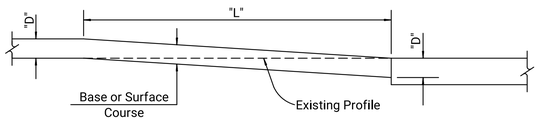
The base course shall be constructed to the plan thickness as shown.

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	Mainline	Entrance				TOTAL	UNIT
HMA Commercial Grade (Class A)	522.9					522.9	Ton
Aggregate Base (AB-3) (6")	1189.8	548.4				1738.2	Sq. Yd.
Pavement Edge Wedge (Rock)	83.5					83.5	Ton

SURFACING BREAKDOWN

LOCATION	SIDE	STATION TO STATION	*HMA - Commercial Grade (Class A) (Ton)				Aggregate Base (AB-3) (6") (Sq. Yd.)		REMARKS
			8.0"	4.0"					
K-900	℄	98+00 to 98+81.50	94.5				217.3		Mainline TW
K-900	℄	102+51.50 to 104+50	230.3				529.3		Mainline TW
K-900	Rt.	98+00 to 98+81.50	23.6				54.3		Mainline Shoulder
K-900	Lt.	97+00 to 98+81.50	23.6				54.3		Mainline Shoulder
K-900	Rt.	102+51.50 to 105+50	71.0				163.4		Mainline Shoulder
K-900	Lt.	102+51.50 to 105+50	74.3				171.2		Mainline Shoulder
K-900	Rt.	98+89.57 to 99+14.50		1.4					Guardrail Pad
K-900	Rt.	102+18.50 to 102+43.45		1.4					Guardrail Pad
K-900	Lt.	98+89.57 to 99+14.50		1.4					Guardrail Pad
K-900	Lt.	102+18.50 to 102+43.45		1.4					Guardrail Pad
K-900	Rt.	97+50					548.4		Field Entrance

PAVEMENT EDGE WEDGE (ROCK)

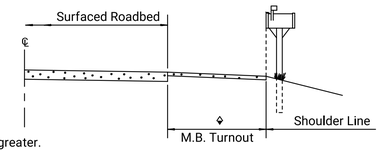
LOCATION	SIDE	STATION TO STATION	QUANTITY (TON)
K-900	Lt.	97+00 to 98+81.50	19.1
K-900	Rt.	97+00 to 98+81.50	13.1
K-900	Lt.	102+51.50 to 105+50	25.4
K-900	Rt.	102+51.50 to 105+50	25.9

RECAPITULATION OF QUANTITIES

	ITEM				TOTAL	UNIT
	Field Office and Laboratory (Type A)				1	Each
†	HMA Commercial Grade (Class A)				523	Ton
	Aggregate Base (AB-3) (6")				1739	Sq. Yd.
	Water (Aggregate Base) (Set Price)				1	M. Gal.
††	Pavement Edge Wedge (Rock)				84	Ton
	Water (Earthwork Compaction) (Set Price)				1	M. Gal.

† Computed at the rate of 145 lb/cf

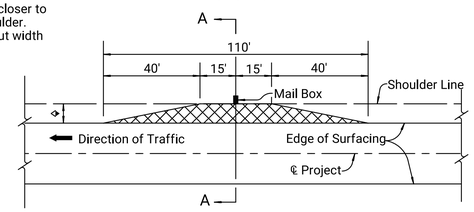
†† Computed at the rate of 135 lb/cf



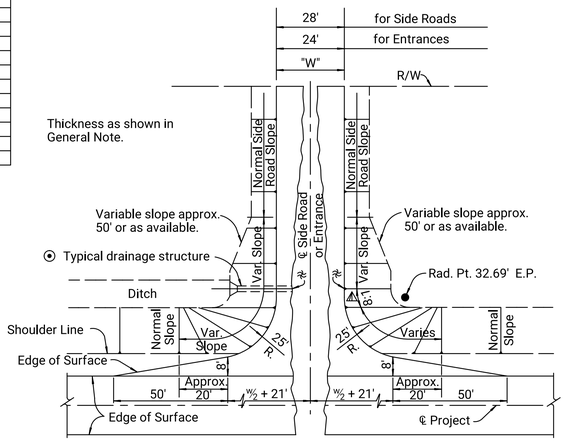
♦ Width shall be 8' or shoulder width, whichever is greater.

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

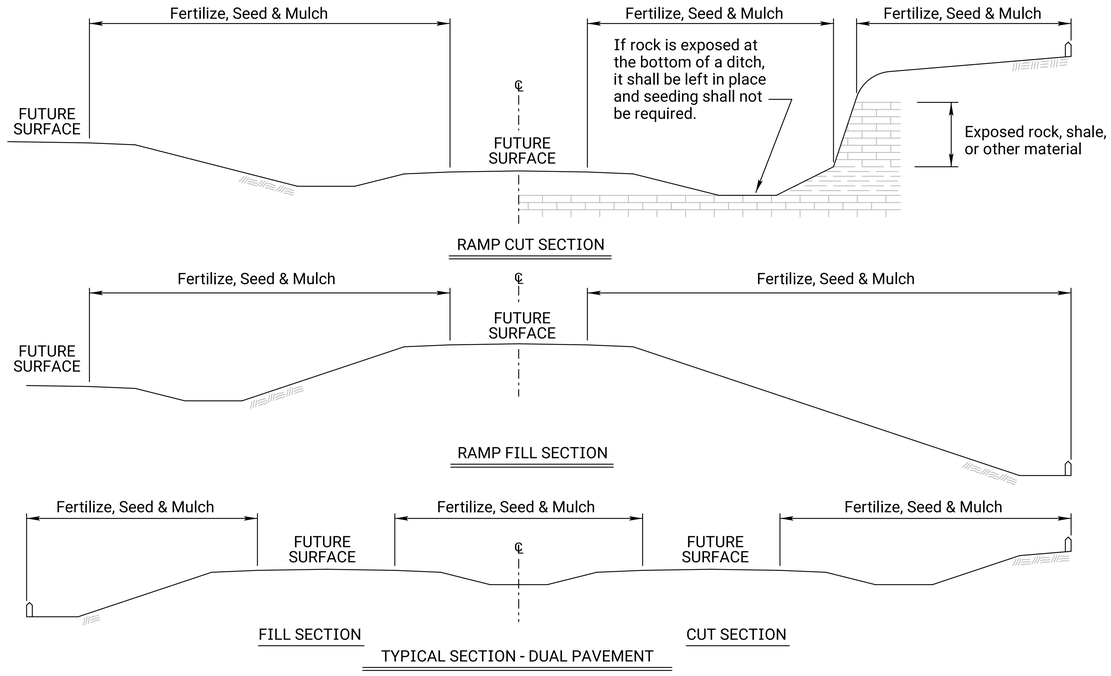
FHWA APPROVAL	09-06-06	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	54	101



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	150		1.04	Temporary Fertilizer (16 - 20 - 0)	155.8	LB
20				Temporary Seed (Canada Wildrye)		LB
45				Temporary Seed (Grain Oats)		LB
45				Temporary Seed (Sterile Wheatgrass) (Regreen / Quick Guard)		LB
	109.9		1.04	Soil Erosion Mix	114.1	LB
				Erosion Control (Class 1, Type C)	4090	SQ YD
				Erosion Control (Class 2, Type E)	936	SQ YD
				Sediment Removal (Set Price)	1	CU YD
				Synthetic Sediment Barrier		LF
				Temporary Berm (Set Price)	1	LF
				Temporary Ditch Check (Rock)		CU YD
				Temporary Inlet Sediment Barrier		EACH
				Temporary Sediment Basin		CU YD
				Temporary Slope Drain		LF
				Floating Turbidity Barrier	400	LF
				Biodegradable Log (9")		LF
				Biodegradable Log (12")		LF
				Biodegradable Log (20")	40	LF
				Filter Sock (18")	40	LF
				Geotextile (Erosion Control)	500	SQ YD
				Silt Fence	640	LF
				SWPPP Design ǂ	1	LS
				SWPPP Inspection ǂ	34	EACH
				Water Pollution Control Manager ǂ	34	EACH
900 lbs / acre				Mulch Tacking Slurry		LB
2 tons / acre				Mulching		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.

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

✳✳✳✳ List size of material.

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

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

SOIL EROSION MIX

PLS RATE: lb/ac	Acres	Bid Item	QTY (lb)	Unit
SHLD	SHLD			
0.5	1.04	Seed (Blue Grama Grass Seed) (Lovington)	0.52	LB
4.5	1.04	Seed (Buffalograss Seed) (Treated)	4.67	LB
45	1.04	Seed (Perennial Ryegrass)	46.73	LB
2.6	1.04	Seed (Prarie Junegrass)	2.70	LB
6.3	1.04	Seed (Side Oats Grama Grass Seed) (El Reno)	6.54	LB
45	1.04	Seed (Tall Fescue) (Endophyte Free)	46.73	LB
6	1.04	Seed (Western Wheatgrass Seed) (Barton)	6.23	LB
		Total (lb)	114.12	LB

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.

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Sh. No. 54

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	55	101

EROSION CONTROL- CLASS I, TYPE C

STATION TO STATION			SIDE	LENGTH	WIDTH	SQ YARD
98+75.00	TO	99+14.50	RT	39.50	37.00	162
97+00.00	TO	99+14.50	LT	214.50	6.00	143
102+18.50	TO	105+50.00	RT	331.50	34.00	1252
102+18.50	TO	105+50.00	LT	331.50	46.00	1694
50+12.00	TO	52+00.00	RT	188.00	26.00	543
50+12.00	TO	52+00.00	LT	148.00	18.00	296
TOTAL EROSION CONTROL (CLASS I, TYPE C) =						4090 Sq. Yds.

EROSION CONTROL- CLASS II, TYPE E

STATION TO STATION			SIDE	LENGTH	WIDTH	SQ YARD
102+18.50	TO	104+50.00	LT	231.50	22.00	566
103+00.00	TO	104+50.00	RT	150.00	22.20	370
TOTAL EROSION CONTROL (CLASS II, TYPE E) =						936 Sq. Yds.

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File : LA852A-EC.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.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	56	101

LEGEND

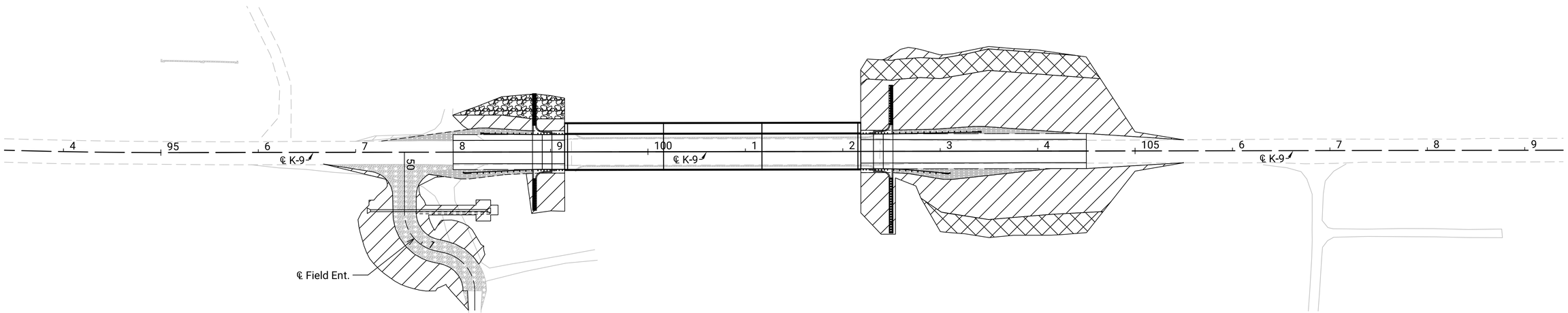
= Erosion Control (Class I)

= Erosion Control (Class II)

= Slope Protection (Riprap Stone)

SCALE

PLAN: Lat. & Long. 50' 0 50' 100'



DATE
BY
REFERENCES NOTED
REFERENCES CHECKED

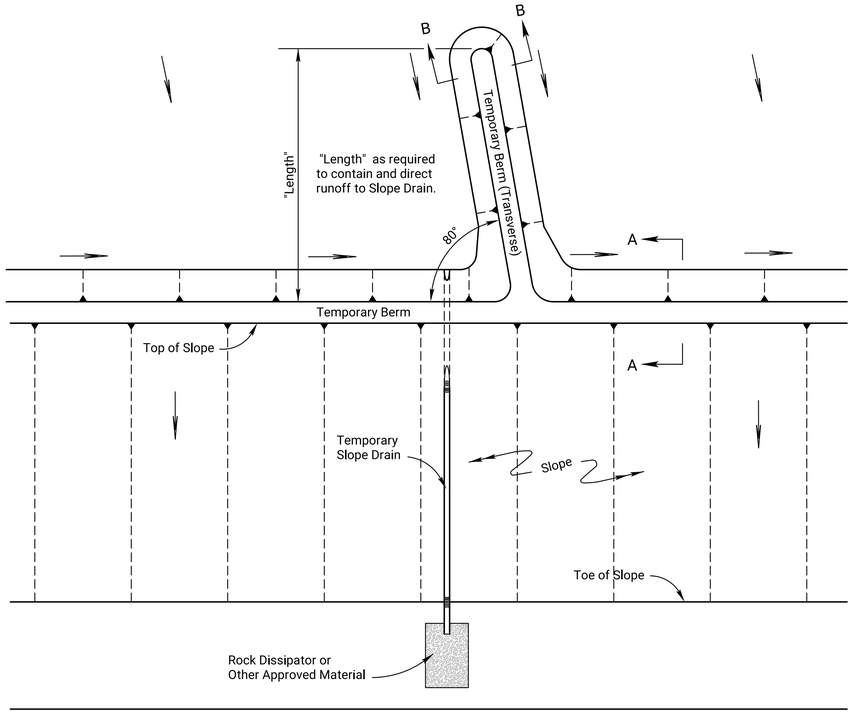
Plotted by : Jay.Sanders@ks.gov 23-APR-2025 23:33
File : ka647401rec-01.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

PROPOSED FINAL

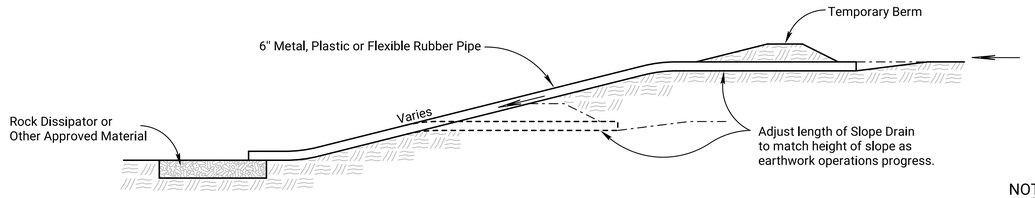
EROSION CONTROL

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	57	101



TYPICAL PLAN VIEW OF TEMPORARY BERM AND TEMPORARY SLOPE DRAIN

NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN

NO SCALE

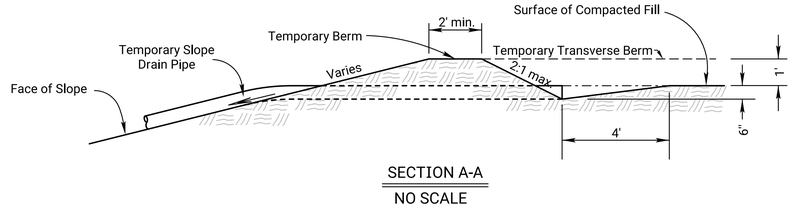
NOTES:

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.

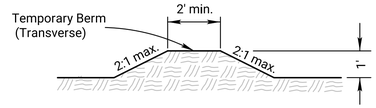
3) Pipe shall be secured in place as approved by Engineer.

4) Temporary Berms under 2,000 feet shall be bid by Set Price.



SECTION A-A

NO SCALE

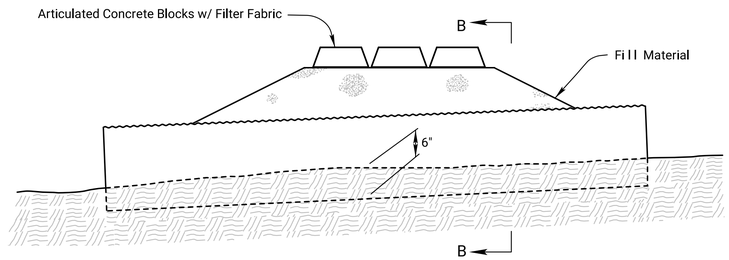


SECTION B-B

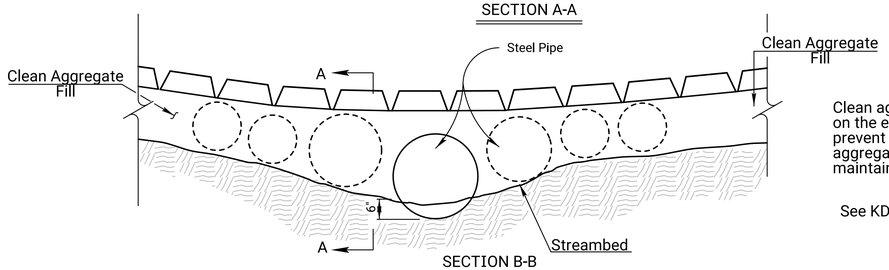
NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM

NO SCALE



SECTION A-A



SECTION B-B

TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)

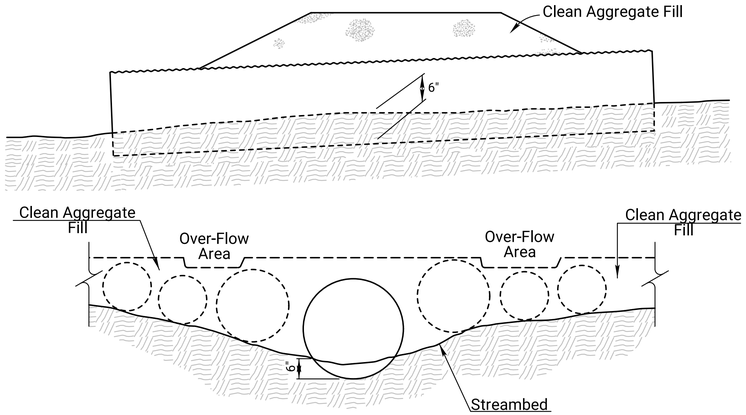
NO SCALE

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.

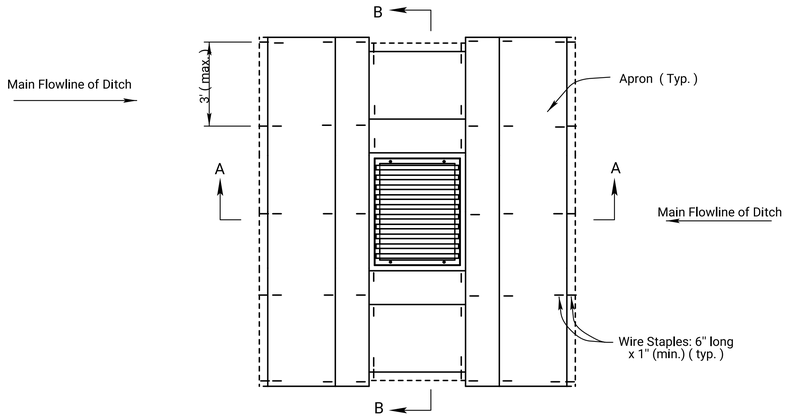
KDOT Graphics Certified 06-17-2022

Sh. No. 57

KDOT Graphics Certified

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File : LA852B.dgn

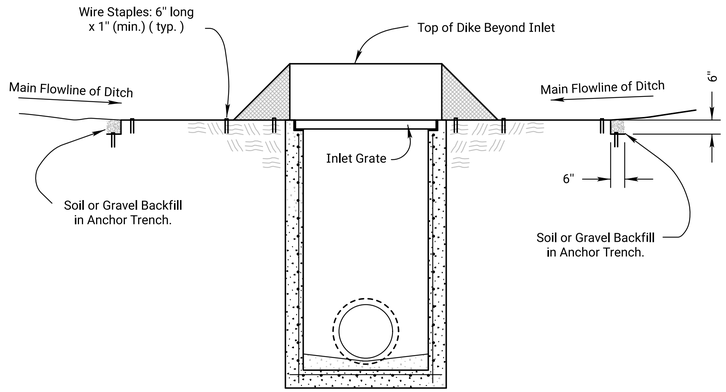
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	58	101



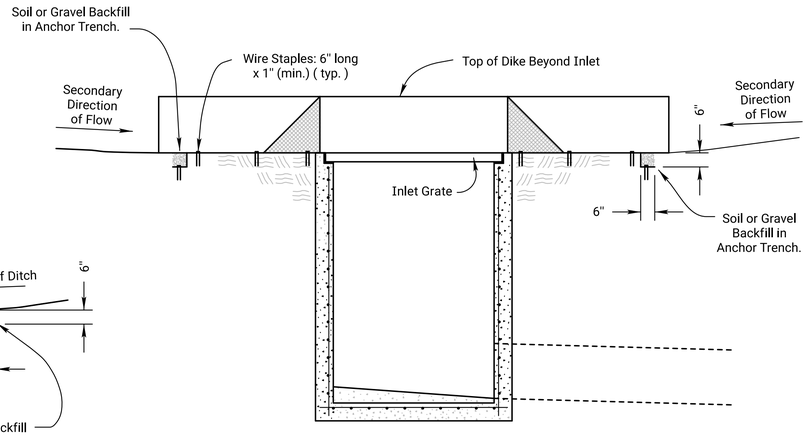
PLAN

TEMPORARY I NLET SEDI MENT BARRI ER
(TRI ANGULAR SI LT DI KE METHOD)

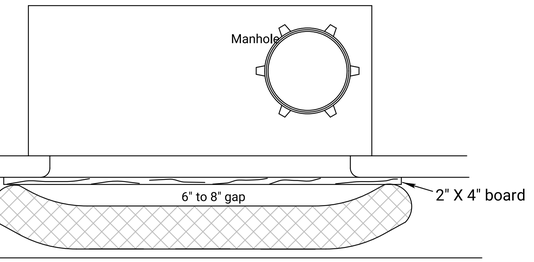
NO SCALE



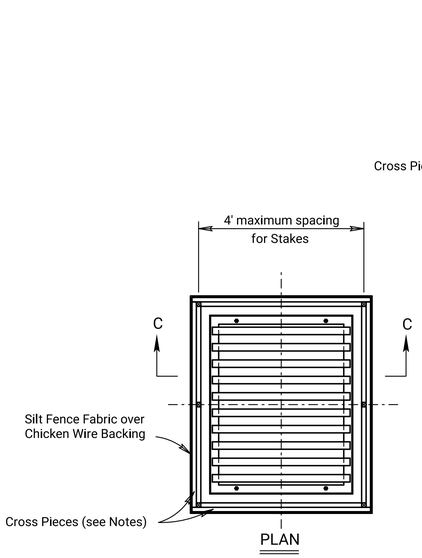
SECTION A - A



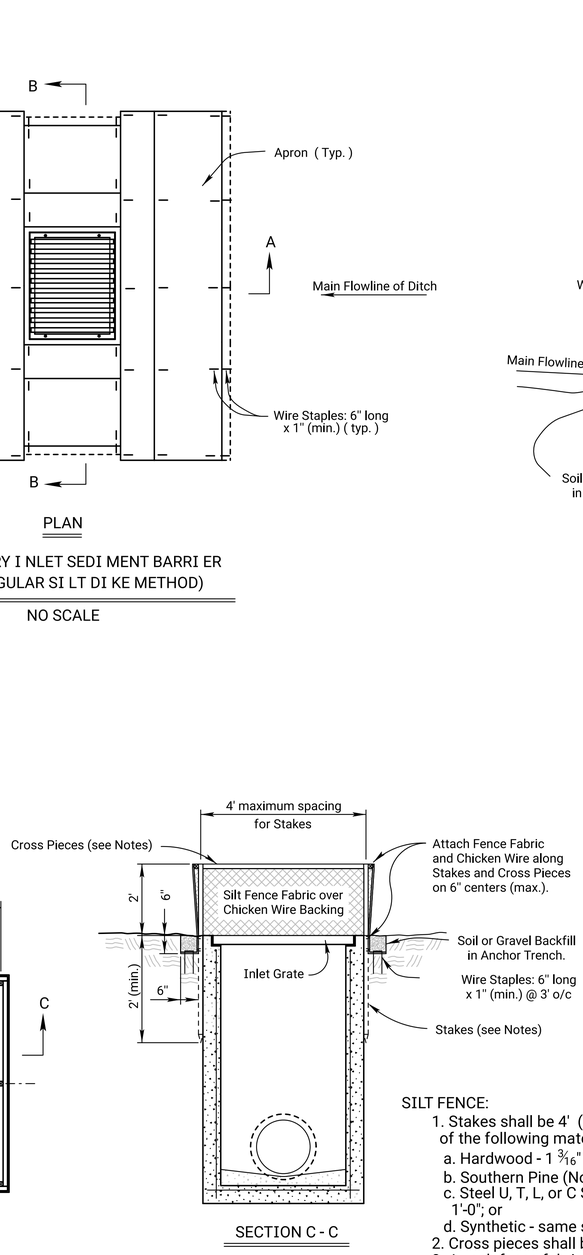
SECTION B - B



CURB INLET PROTECTION



PLAN



SECTION C - C

TEMPORARY I NLET SEDI MENT BARRI ER
(SI LT FENCE METHOD)

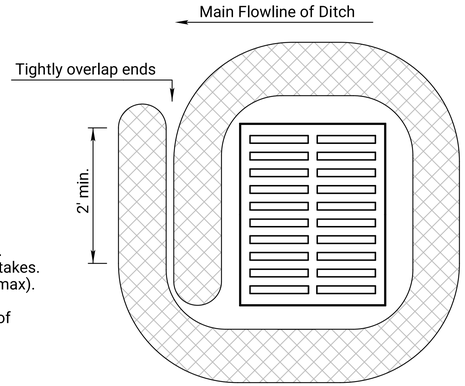
NO SCALE

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'

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.

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.

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

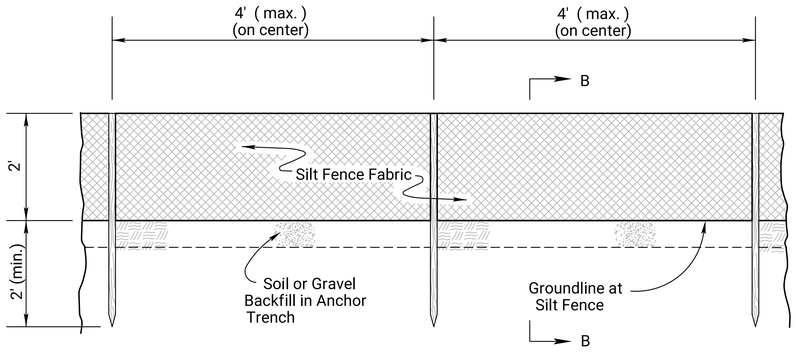
FHWA APPROVAL		03-10-15	APP'D.	Scott H. Shields	
DESIGNED	R.A.	DETAILED R.A.	QUANTITIES	TRACED	
DESIGN CK.	S.H.S.	DETAIL CK. S.H.S.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 07-14-2022 Sh. No. 58

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Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:31
File : LA852C.dgn

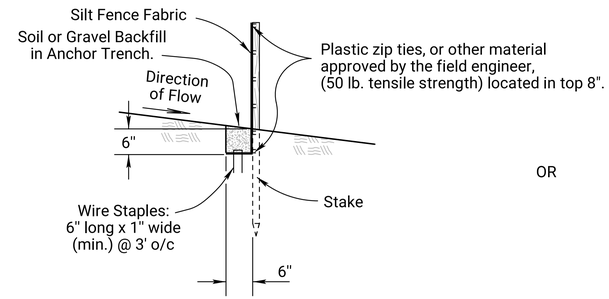
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	59	101



TYPICAL ELEVATION

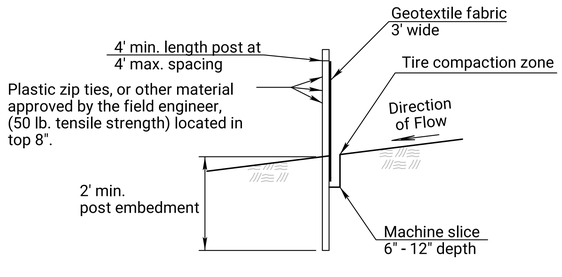
SILT FENCE BARRIER

NO SCALE

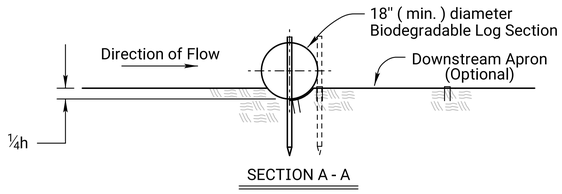


SECTION B-B

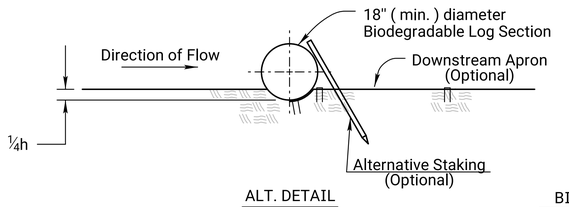
OR



SECTION B-B

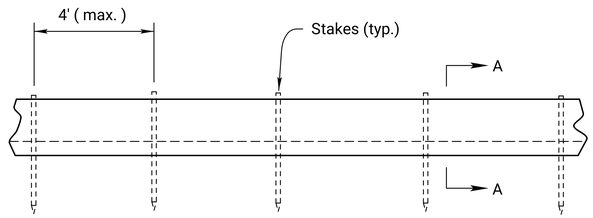


SECTION A - A



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

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

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

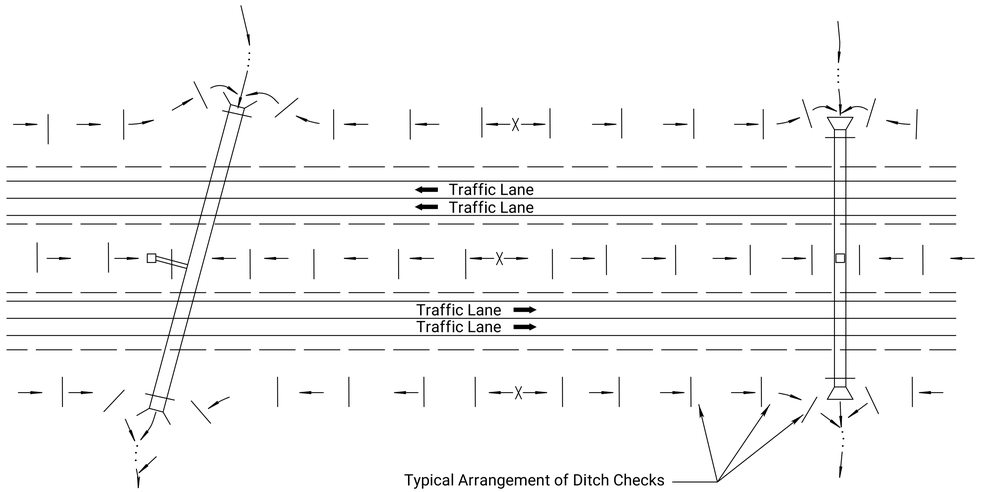
FHWA APPROVAL		09-14-16	APP'D.	Scott H. Shields
DESIGNED	S.H.S.	DETAILED R.A.	QUANTITIES	TRACED
DESIGN CK.	S.H.S.	DETAIL CK.	QUAN.CK.	TRACE CK.

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File : la852d.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	60	101



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

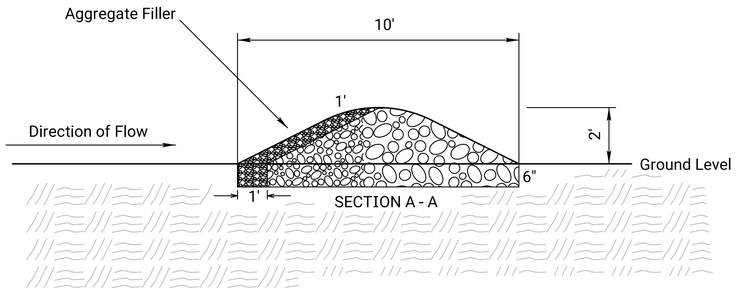
FHWA APPROVAL		09-14-16	APP'D.	Scott H. Shields			
DESIGNED	S.H.S.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	S.H.S.

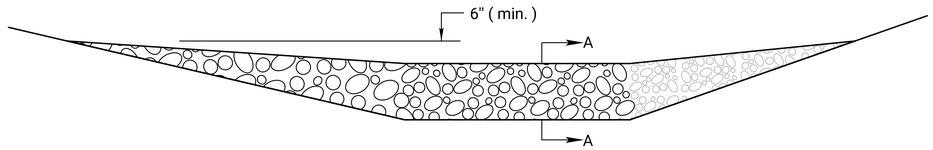
KDOT Graphics Certified 06-18-2022 Sh. No. 60

KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:32
File : la852e.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	61	101





TYPICAL ELEVATION

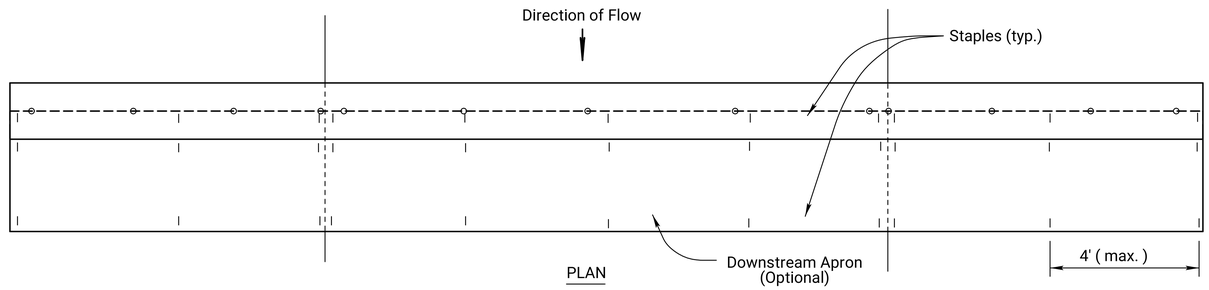
ROCK DITCH CHECK

NO SCALE

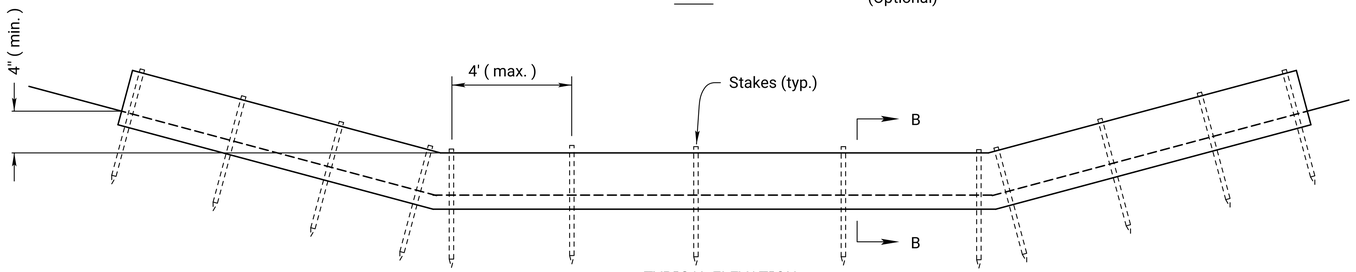
TEMPORARY ROCK DITCH CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
NOTE: Use this spacing for Rock Ditch Checks only.	

ROCK DITCH CHECK NOTES

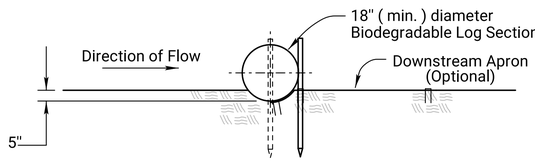
1. Rock shall be clean aggregate, D50-6" and aggregate filler.
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch 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.



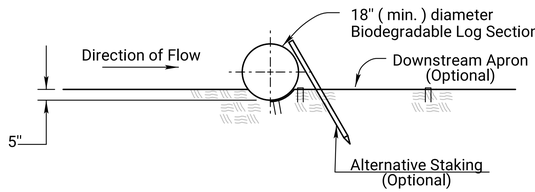
PLAN



TYPICAL ELEVATION



SECTION B - B



ALT. DETAIL
OPTIONAL

BIODEGRADABLE LOG DITCH CHECK

OR Filter Sock Ditch Check

NO SCALE

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

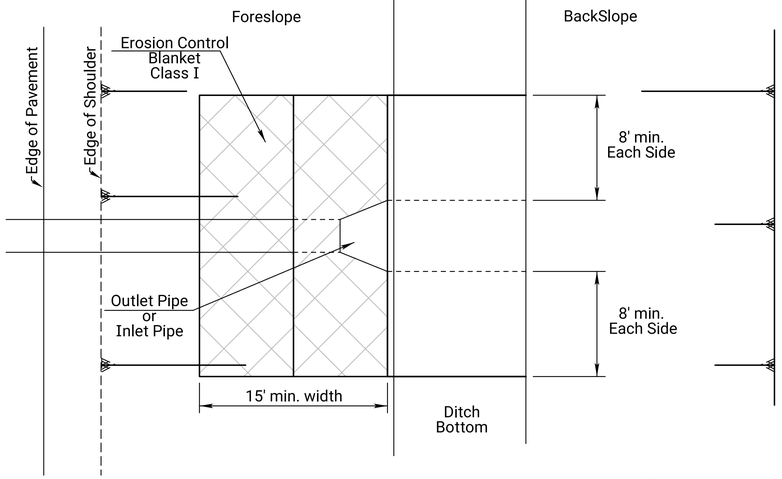
FHWA APPROVAL			11-19-20	APP'D.		Mervin Lare	
DESIGNED	M.L.	DETAILED	D.K.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	M.L.	DETAIL CK.	M.L.	QUAN.CK.		TRACE CK.	R.A.A.

KDOT Graphics Certified 07-14-2022 Sh. No. 61

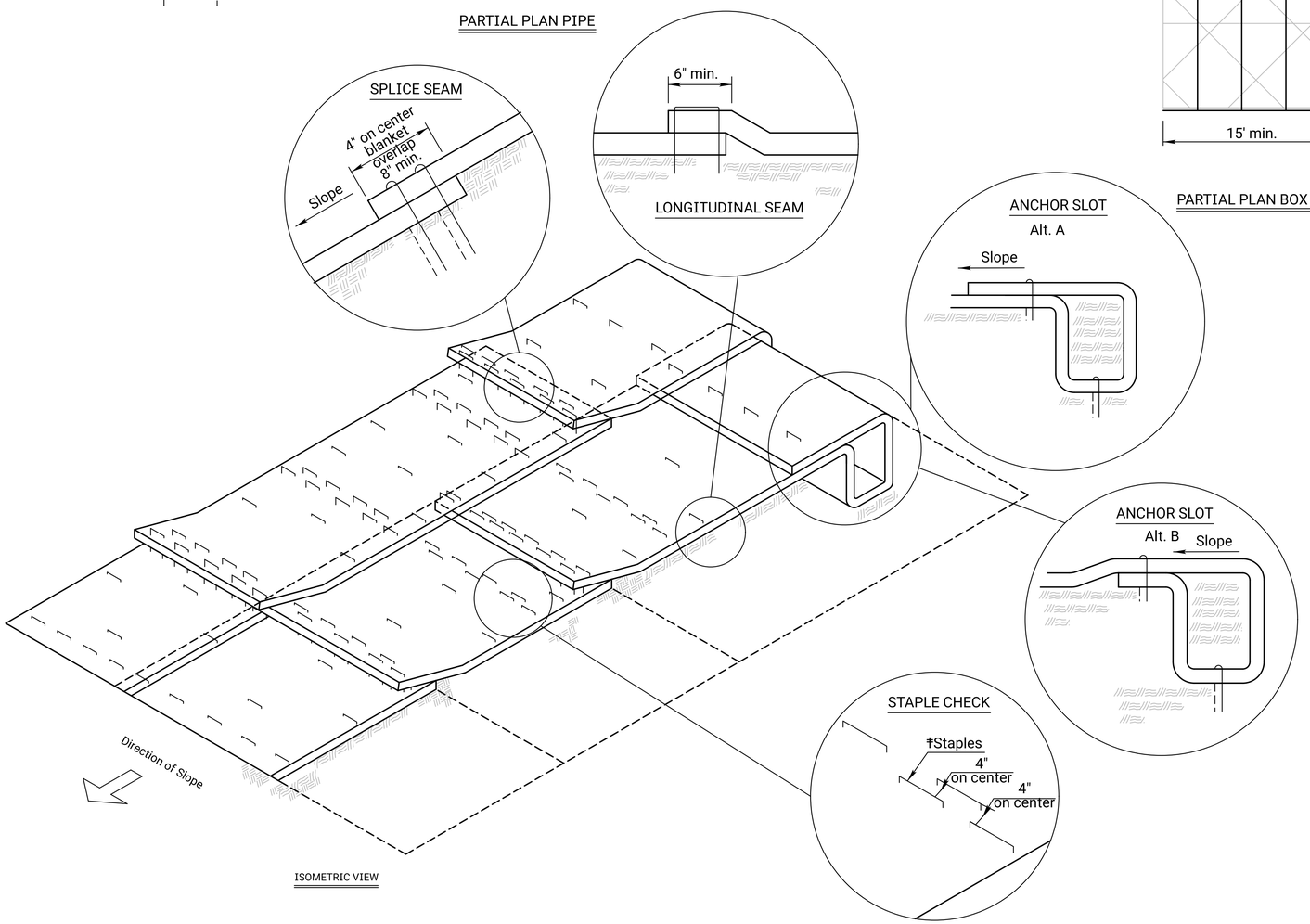
KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:32
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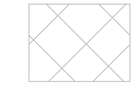
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	62	101



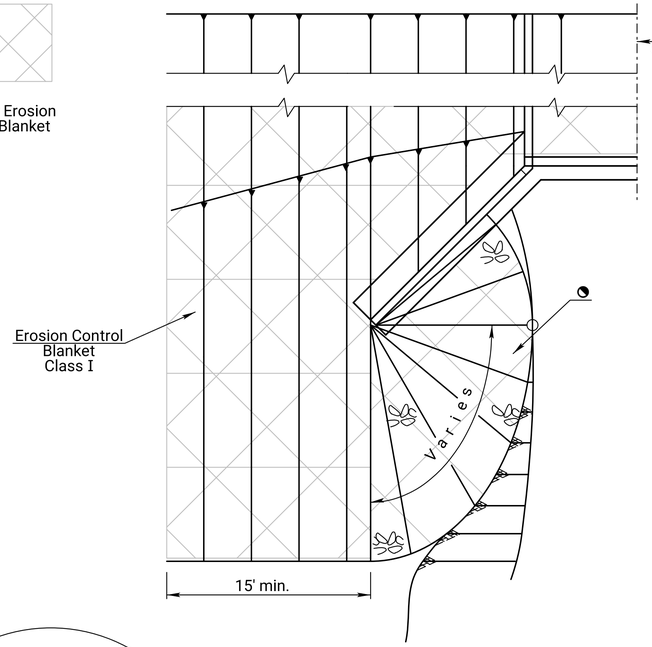
PARTIAL PLAN PIPE



ISOMETRIC VIEW



Limits of Erosion Control Blanket



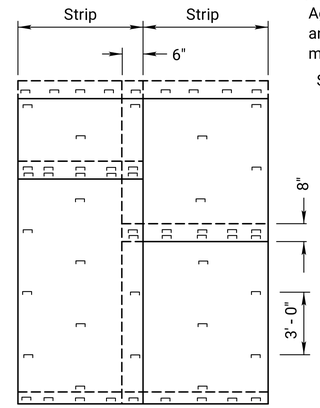
PARTIAL PLAN BOX CULVERT

◔ 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

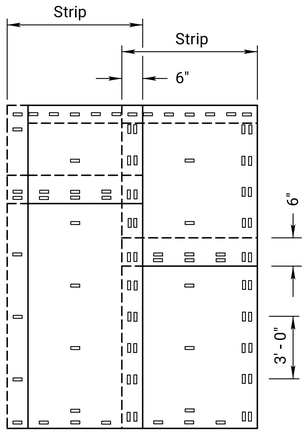
FHWA APPROVAL			03-10-15	APP'D.		Scott H. Shields	
DESIGNED	R.A.A.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	R.A.A.

KDOT Graphics Certified 06-20-2022 Sh. No. 62

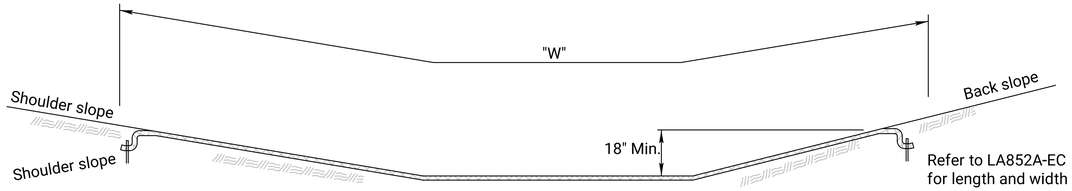
KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:32
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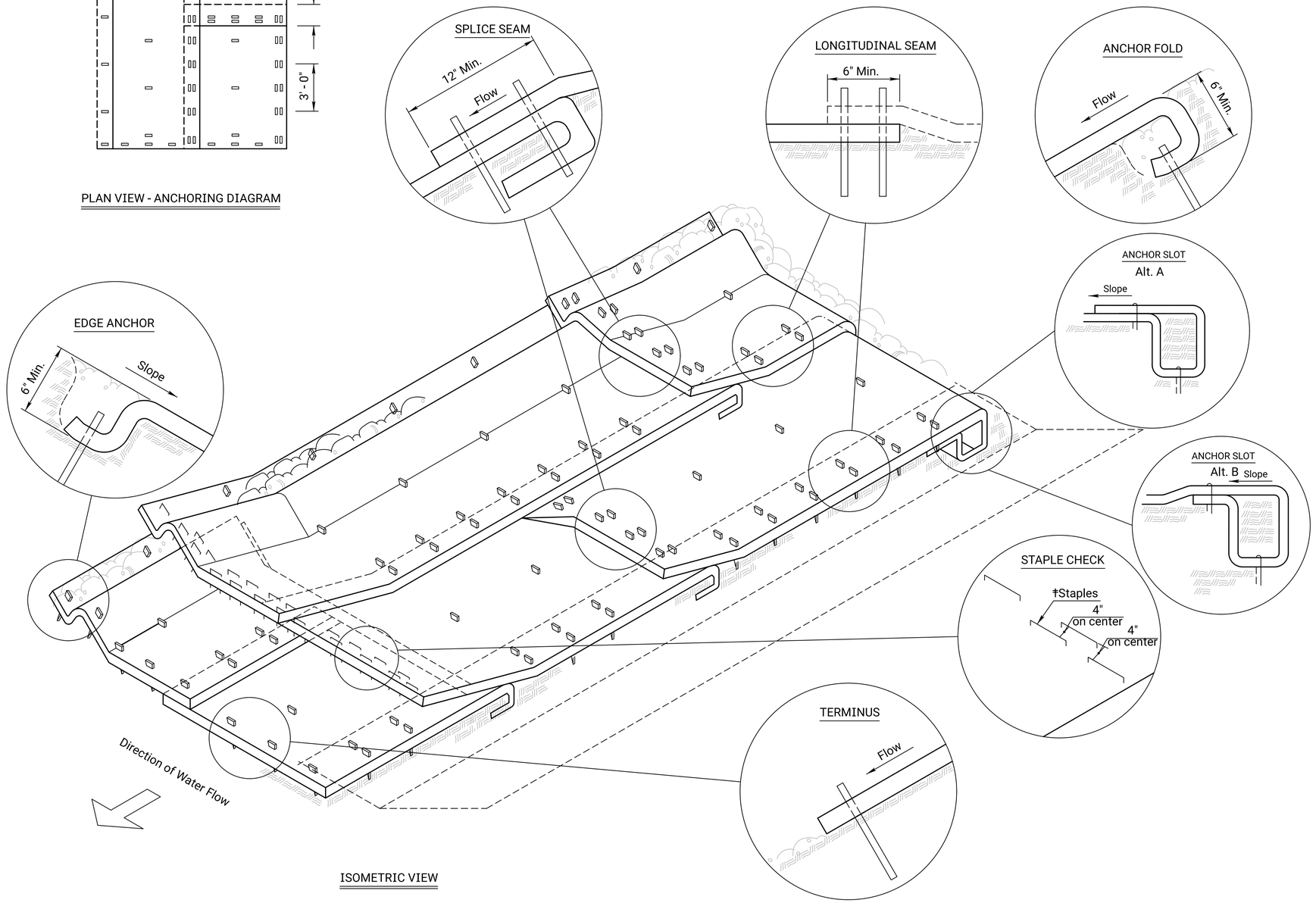
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	63	101



PLAN VIEW - ANCHORING DIAGRAM



CROSS SECTION (Ditch Lining)



ISOMETRIC VIEW

INSTALLATION DETAILS FOR EROSION CONTROL CLASS 2

Erosion Control Mats shall be laid loosely in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.

1. ANCHOR FOLD: The top of the mat should be folded under, buried and secured with approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot, 6 inches wide x 6 inches deep; anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.

2. LONGITUDINAL SEAMS: The adjacent edges of the mat should overlap a minimum of 6 inches, with anchors catching the edges of both mats.

3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 12 inches in direction of water flow. Stagger splice seams.

4. STAPLE CHECK: ‡Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.

5. EDGE ANCHOR: Lay outside edge of mat into trench at top of side slope. Anchor at 3 foot intervals along trench.

6. TERMINUS: The bottom edge of the mat shall be anchored in place with anchors spaced at 9 inch intervals along the terminating edge.

7. TYPICAL ANCHORS: Anchor design shall be as recommended by the manufacturer.

NO.	DATE	REVISIONS	BY	APP'D
04	09-25-15	Modified Staple Check	R.A.A.	S.H.S.
03	09-15-14	Revised Standard	R.A.A.	S.H.S.
02	03-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

INSTALLATION DETAIL
EROSION CONTROL CLASS 2
FLEXIBLE CHANNEL LINER

LA856

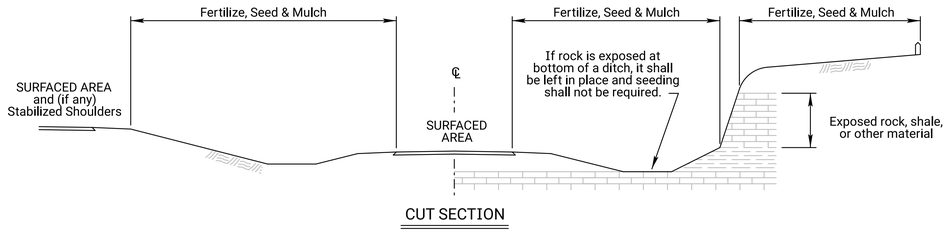
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DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	

KDOT Graphics Certified 06-20-2022 Sh. No. 63

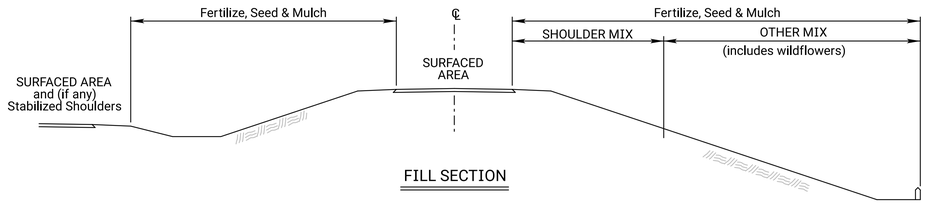
KDOT Graphics Certified

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:33
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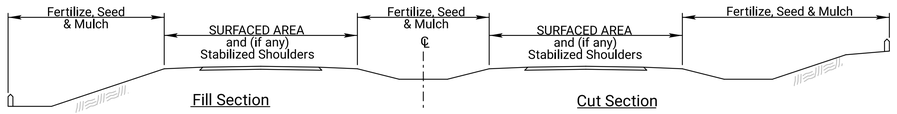
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	64	101



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:

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

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

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

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

When seeding is less than 1 acre, temporary and permanent seeding shall be combined and seeded at the same time.

There is no seasonal restriction when seeding projects less than one acre.

NATIVE WILDFLOWER MIX 1

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

NATIVE WILDFLOWER MIX 2

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

Package and deliver the wildflower seed separately from the grass seed mix. Package and deliver the Tall Drop Seed separately from the grass seed and the wildflower mix. Place the grass seed (except Tall Drop Seed) in the large seed box and drill (cover) seed ⅛" -¼". Place the wildflower seed in a separate seed box and drill (cover) seed $\frac{1}{16}$" maximum. Place the Tall Drop Seed in a separate (third) seed box and place the seed (using the seed drill) on the soil surface.

OPTION: Broadcast Tall Drop Seed on the soil surface.

SUMMARY OF SEEDING QUANTITIES

P.L.S. RATE/ACRE				ACRES				BID ITEM	QUANTITY	UNIT
SHLDR	OTHER			SHLDR	OTHER					
								This project is entirely blanketed and seeded with the Soil Erosion Mix, eliminating the need for permanent seeding operations.		
								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.

CADconform Certify This File

Sh. No. 64

Plotted by : Jay.Sanders@ks.gov 23-APR-2025 22:30
File : LA850.dgn

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	65	101

SYMBOL KEY

- REMOVE SIGN
- REMOVE POST
- REMOVE FOOTING
- REMOVE SIGN & POST
- REMOVE POST & FOOTING
- REMOVE SIGN, POST, & FOOTING
- MOUNT ON WOOD POST IN CONCRETE FOOTING
- MOUNT ON WOOD POST IN SOIL
- MOUNT ON STEEL BEAM BREAKAWAY POST
- MOUNT ON STEEL U-POST
- MOUNT ON PSST POST
- MOUNT ON EXISTING POST
- MOUNT ON VERTICAL SUPPORT
- SHOULDER MOUNTED INSTALLATION
- OFFSET MOUNTED INSTALLATION
- EXISTING SIGN
- EXISTING SIGN TO BE OVERLAID
- SIGN IS NOT PART OF PROJECT
- TYPE 'A' DELINEATOR (RIGID)
- TYPE 'A' DELINEATOR (RIGID) (BK-BK)
- TYPE 'B' DELINEATOR (RIGID)
- TYPE 'A' DELINEATOR (FLEXIBLE)
- TYPE 'A' DELINEATOR (FLEXIBLE) (BK-BK)
- TYPE 'B' DELINEATOR (FLEXIBLE)
- TYPE 2 OBJECT MARKER
- TYPE 3 OBJECT MARKER
- TYPE 3 OBJECT MARKER (BK-BK)

GENERAL NOTES

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

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

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

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

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

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

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

INDEX OF SHEETS

65	SIGNING INDEX, SYMBOLS, & GENERAL NOTES
66-67	POSITIONING, DESIGN, & MOUNTING FOR OBJECT MARKERS (TYPE 2 & 3)
68	PLAN SHEETS (INSTALLATIONS)
69	PLAN SHEETS (REMOVALS)
70	QUANTITIES SHEET (DELINEATORS & OBJECT MARKERS)
71	SUMMARY SHEET (INSTALLATIONS & REMOVALS)
72	RECAPITULATION SHEET
73	DETAILS FOR FLAT SHEET SIGN BLANKS
74	DETAILED SIGN SPECIFICATIONS

NO.	DATE	REVISIONS	BY	APP'D
02	10-01-19	Changed symbol, notes, & index	D.D.G.	E.W.N.
01	07-23-10	Changed General Notes and Spec Book Date	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING SYMBOL KEY GENERAL NOTES AND INDEX

TE402 07-01-03

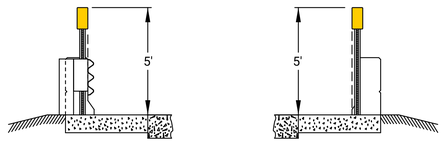
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DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.		TRACE CK.	

KDOT Graphics Certified 04-24-2025 Sh. No. 65

KDOT Graphics Certified

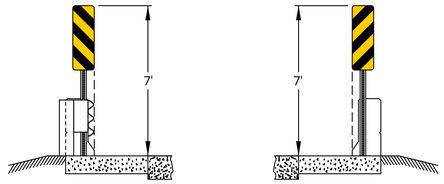
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File : KA647401pss-402-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	66	101



WITH GUARDRAIL WITHOUT GUARDRAIL

SHOULDER WIDTH 6 FEET OR GREATER (TYPE 2 OBJECT MARKER)

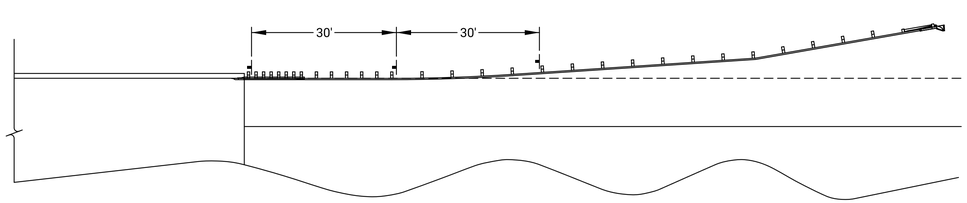


WITH GUARDRAIL WITHOUT GUARDRAIL

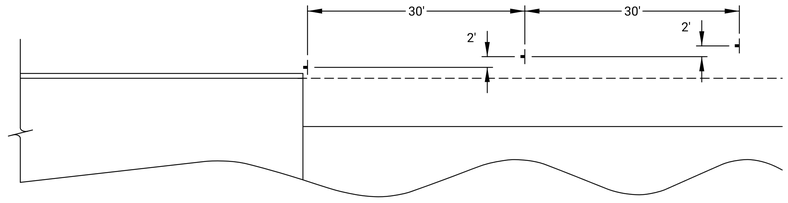
SHOULDER WIDTH LESS THAN 6 FEET (TYPE 3 OBJECT MARKER)

NOTE:
The longitudinal location of the object markers from the structure end shall be a maximum spacing of 42".

END OF STRUCTURE

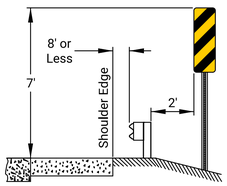


LONGITUDINAL PLACEMENT

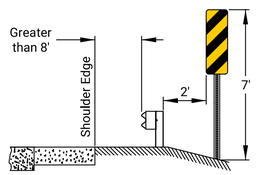


LONGITUDINAL PLACEMENT

NOTE:
The lateral offset is measured from the centerline of the object markers.

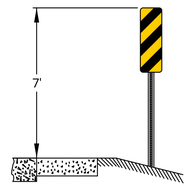


GUARDRAIL 8' OR LESS FROM SHOULDER EDGE



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

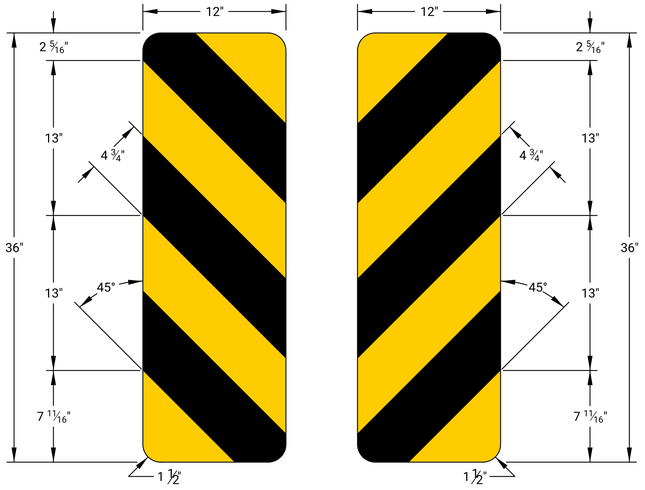
FHWA APPROVAL		10-01-19	APP'D.	Eric W. Nichol			
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES	TRACED		
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN.CK.	TRACE CK.		

KDOT Graphics Certified 05-25-2022 Sh. No. 66

KDOT Graphics Certified

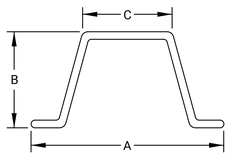
Plotted by : Rick.Dixon@ks.gov 24-APR-2025 15:42
File : KA6474401pss-415-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	67	101



OM3-L

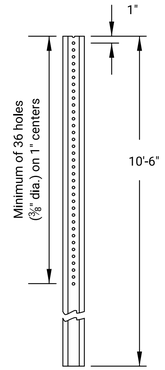
OM3-R



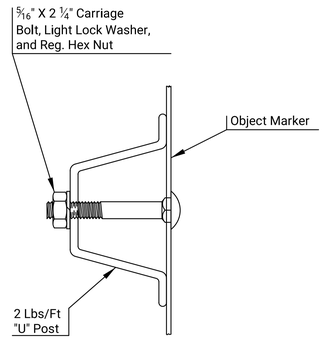
DIMENSIONS	
A	3 1/8
B	1 17/32
C	1 1/4

(Dimensions are nominal)

2 lb/ft "U" POST



PUNCHING DETAILS



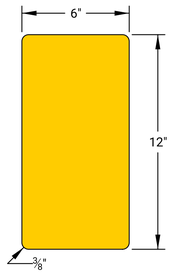
MOUNTING DETAILS

COLORS:
Yellow Background (Reflective)
Black Stripes (Non-reflective)

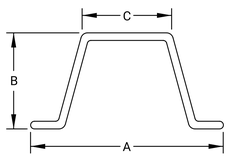
TYPE 3 OBJECT MARKER

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.



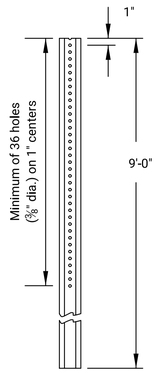
OM2



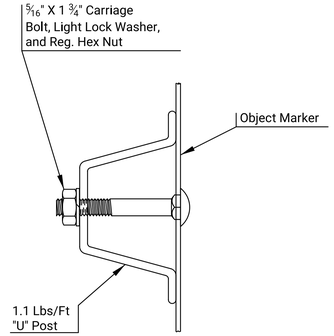
DIMENSIONS	
A	2 1/16
B	7/8
C	13/16

(Dimensions are nominal)

DELINEATOR POST
(1.1 lb/ft "U" Post)



PUNCHING DETAILS



MOUNTING DETAILS

COLOR:
Yellow Background (Reflective)

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

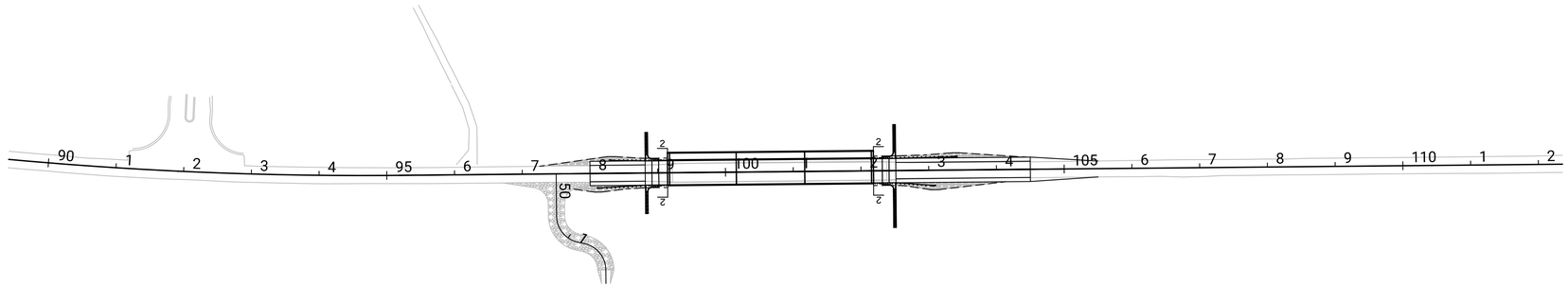
FHWA APPROVAL			10-01-19	APP'D.	Eric W. Nichol		
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES		TRACED	
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN.CK.		TRACE CK.	

KDOT Graphics Certified 07-07-2022 Sh. No. 67

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File : KA647401pss-416-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	68	101



NOTE: SIGNS AND LEGEND NOT TO SCALE

KANSAS DEPARTMENT OF TRANSPORTATION

EAST TWELFTH STREET
STA. 96+00 TO STA. 106+00

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

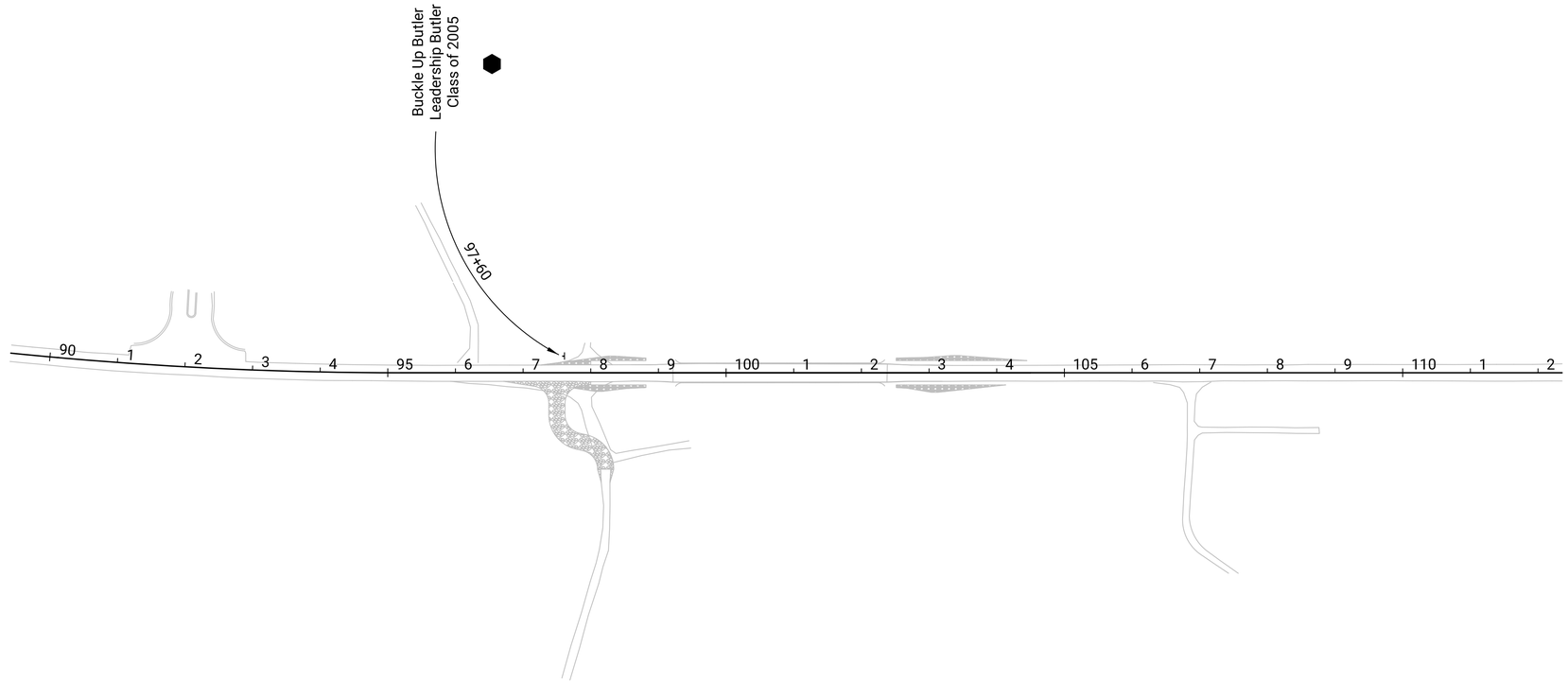
KDOT Graphics Certified 04-24-2025

Sh. No. 68

KDOT Graphics Certified

Plotted by : Rick.Dixon@ks.gov 24-APR-2025 15:41
File : KA647401ppl-01.dgn Traffic

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	69	101



Contractor is to coordinate with the responsible party to have sign removed prior to beginning of construction. Contractor, KDOT, and responsible party are to coordinate the new location at the completion of the project.

NOTE: SIGNS AND LEGEND NOT TO SCALE

KANSAS DEPARTMENT OF TRANSPORTATION

EAST TWELFTH STREET
STA. 96+00 TO STA. 106+00
REMOVALS

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

KDOT Graphics Certified 04-24-2025

Sh. No. 69

KDOT Graphics Certified

Plotted by : Rick.Dixon@ks.gov 24-APR-2025 15:42
File : KA647401prm-01.dgn Traffic

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	70	101

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
96+00	106+00	East 12th Avenue																									4				

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 04-24-2025 Sh. No. 70

KDOT Graphics Certified

Plotted by : Rick.Dixon@ks.gov 24-APR-2025 15:41
File : KA6474401pss-436-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	71	101

SUMMARY OF QUANTITIES

SIGNS

TYPE	NUMBER	SQUARE FEET
FLAT SHEET		
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																
FEET																

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	
POSTS	
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'																
14.1' - 16'																
16.1' - 18'																
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 04-24-2025 Sh. No. 71

KDOT Graphics Certified

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File : KA647401pss-439-01.dgn

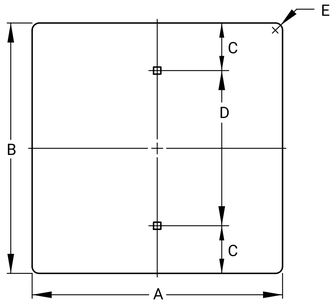
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	72	101

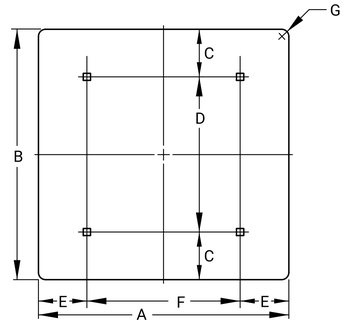
RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

BID ITEMS	APPROXIMATE QUANTITIES		UNITS
SIGN (FLAT SHEET) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN (REINFORCED PANEL) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN (OVERLAY) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN POST (4" x 6" WOOD) (FLAT SHEET SIGN)			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 NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	73	101





	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 04-24-2025 Sh. No. 73

KDOT Graphics Certified

Plotted by : Rick.Dixon@ks.gov 24-APR-2025 15:41
File : KA647401pss-506-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	74	101

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

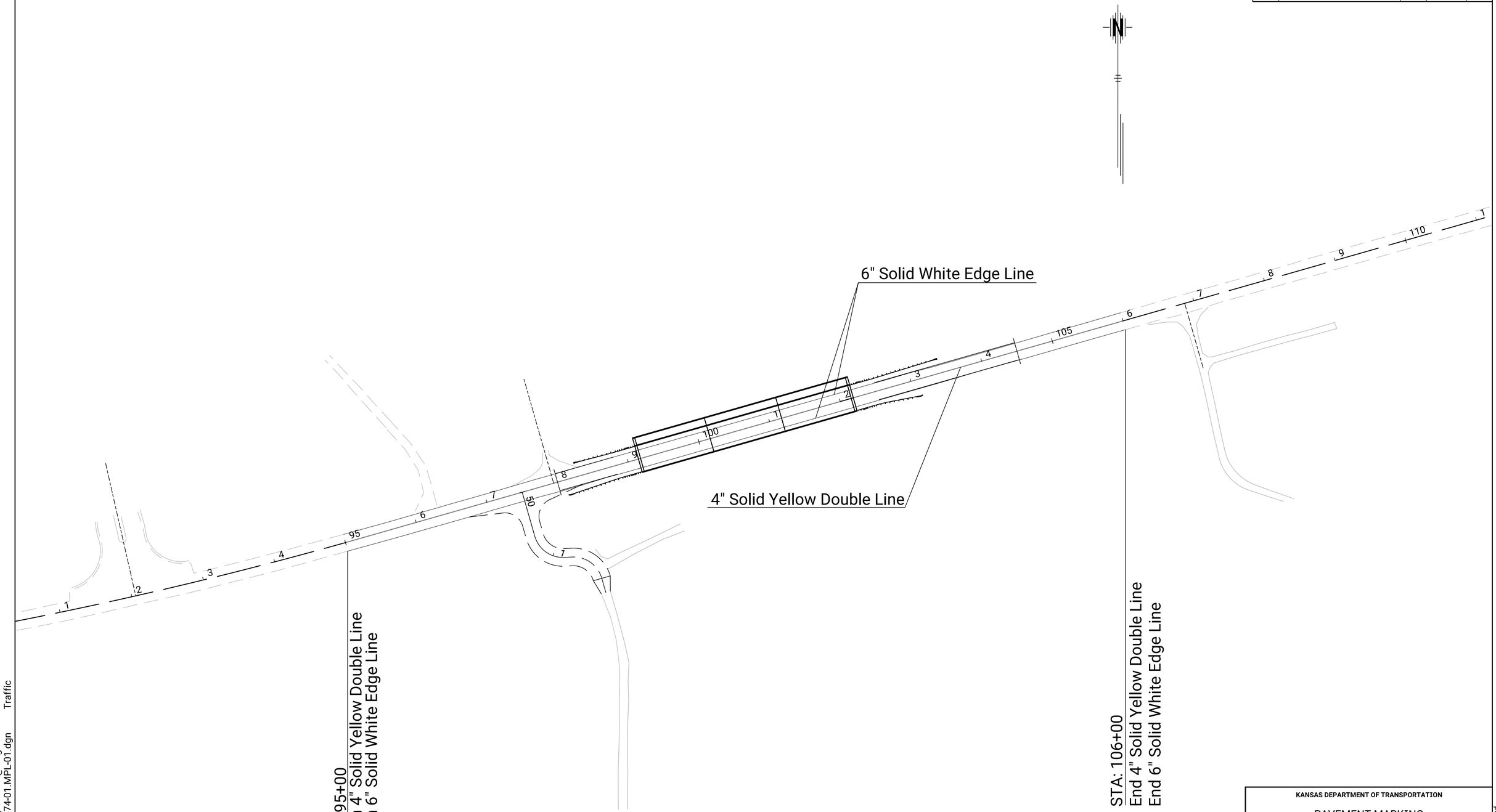
FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED K.D.S.	QUANTITIES	TRACED	
DESIGN CK.	S.A.B.	DETAIL CK. D.D.G.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 04-24-2025 Sh. No. 74

KDOT Graphics Certified

Plotted by : Rick.Dixon@ks.gov 24-APR-2025 15:41
File : KA647401pss-590-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	75	101



Plotted by : Jonny.Madrid@ks.gov 13-SEP-2024 22:53
File : 900-8 KA-6474-01.MPL-01.dgn Traffic

KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING
MAINLINE K-900

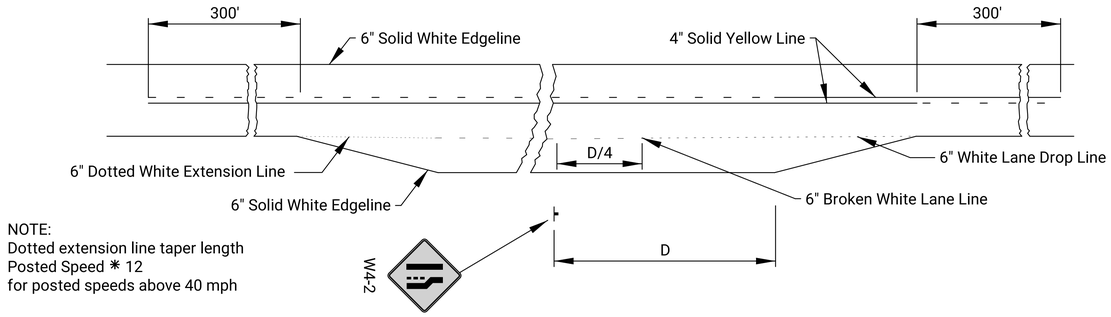
STA: 95+00 - STA:106+00

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

KDOT Graphics Certified 09-10-2024 Sh. No. 75

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	76	101

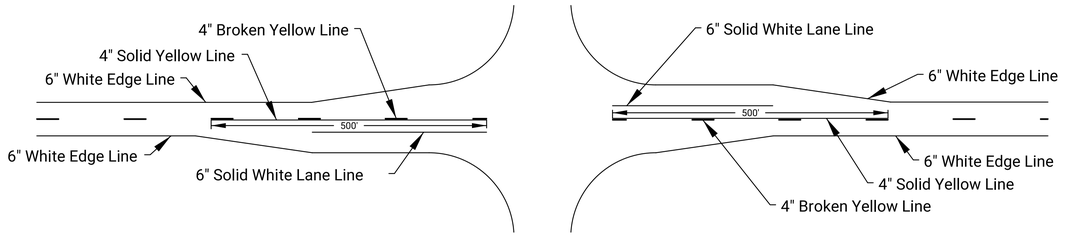


NOTE:
Dotted extension line taper length
Posted Speed ✳ 12
for posted speeds above 40 mph

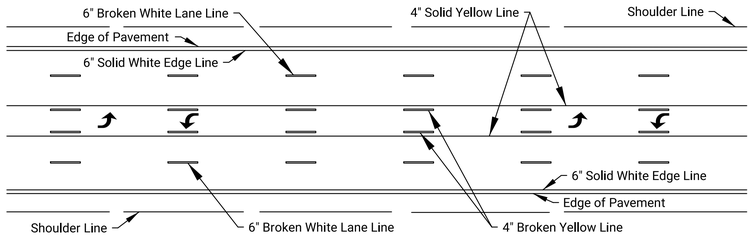
TYPICAL MARKING FOR AUXILIARY PASSING LANE

NOTE:
All pavement markings shall be broken at cross roads.

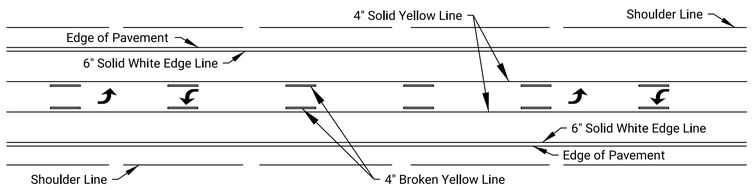
For highway junctions the no passing zone will extend 1000' from intersection.



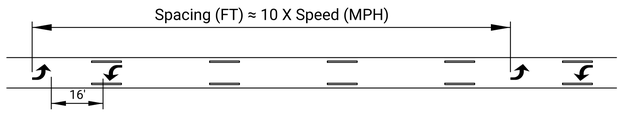
TYPICAL ROAD JUNCTION MARKINGS WITH BYPASS LANES



TWO-WAY LEFT TURN DETAIL FOR FIVE LANE ROADWAY

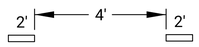


TWO-WAY LEFT TURN DETAIL FOR THREE LANE ROADWAY

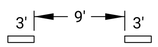


TWO-WAY LEFT TURN ARROW SPACING DETAIL

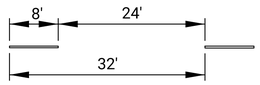
NOTE:
If arrows are used space the arrows as shown in the spacing detail.



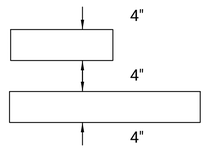
TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.



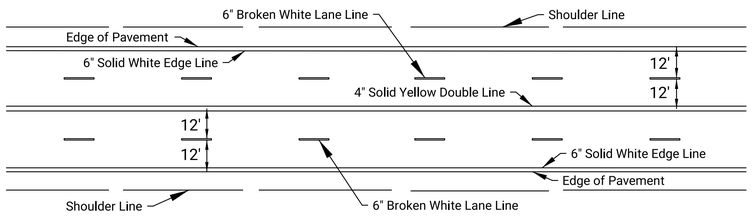
TYPICAL SPACING FOR LANE DROP, UNLESS OTHERWISE NOTED ON PLANS.



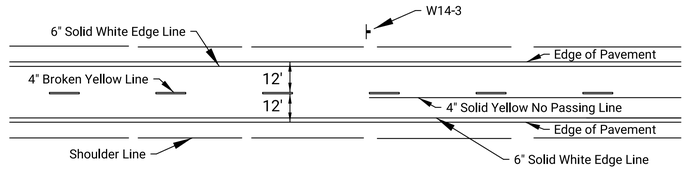
TYPICAL SPACING FOR BROKEN LINES, UNLESS OTHERWISE NOTED ON PLANS



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.

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
03	05-25-12	Added Dotted Extension and Lane Drop Lines	B.A.H.	B.D.G.
02	09-20-05	Removed Aux. Passing Lane Dotted Ext. Line	J.F.F.	B.D.G.
01	07-26-05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL PAVEMENT MARKING DETAILS FOR UNDIVIDED ROADWAYS

TE308

FHWA APPROVAL			05-25-12	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 07-19-2022 Sh. No. 76

KDOT Graphics Certified

Plotted by : Jonny.Madrid@ks.gov 13-SEP-2024 22:53
File : te308.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	77	101

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
PAVEMENT MARKINGS																					
MAINLINE K-900																					
		2200															1100				
TOTALS		2200															2200				

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	2200	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")	2200	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	800	FT

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION																									
TOTALS																						

NOTE:
For specific pavement marking details and dimensions see plan sheets.

All totals reflect actual quantity of pavement marking materials required.

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.

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.

NO.	DATE	REVISIONS	BY	APP'D
02	05-25-12	Added Line Types, Symbols, and Shields	B.A.H.	B.D.G.
01	07-26-05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

TE311

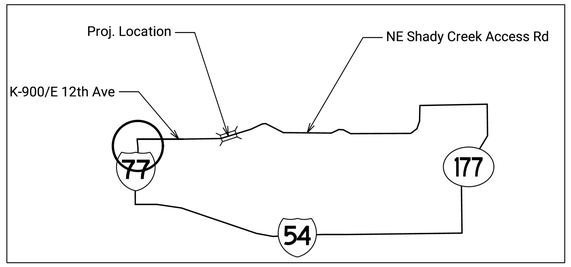
FHWA APPROVAL		05-25-12	APP'D.	Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 09-10-2024 Sh. No. 77

KDOT Graphics Certified

Plotted by : Jonny.Madrid@ks.gov 13-SEP-2024 22:53
File : te311.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	78	101



NOTE: Circle on map denotes location of detour.

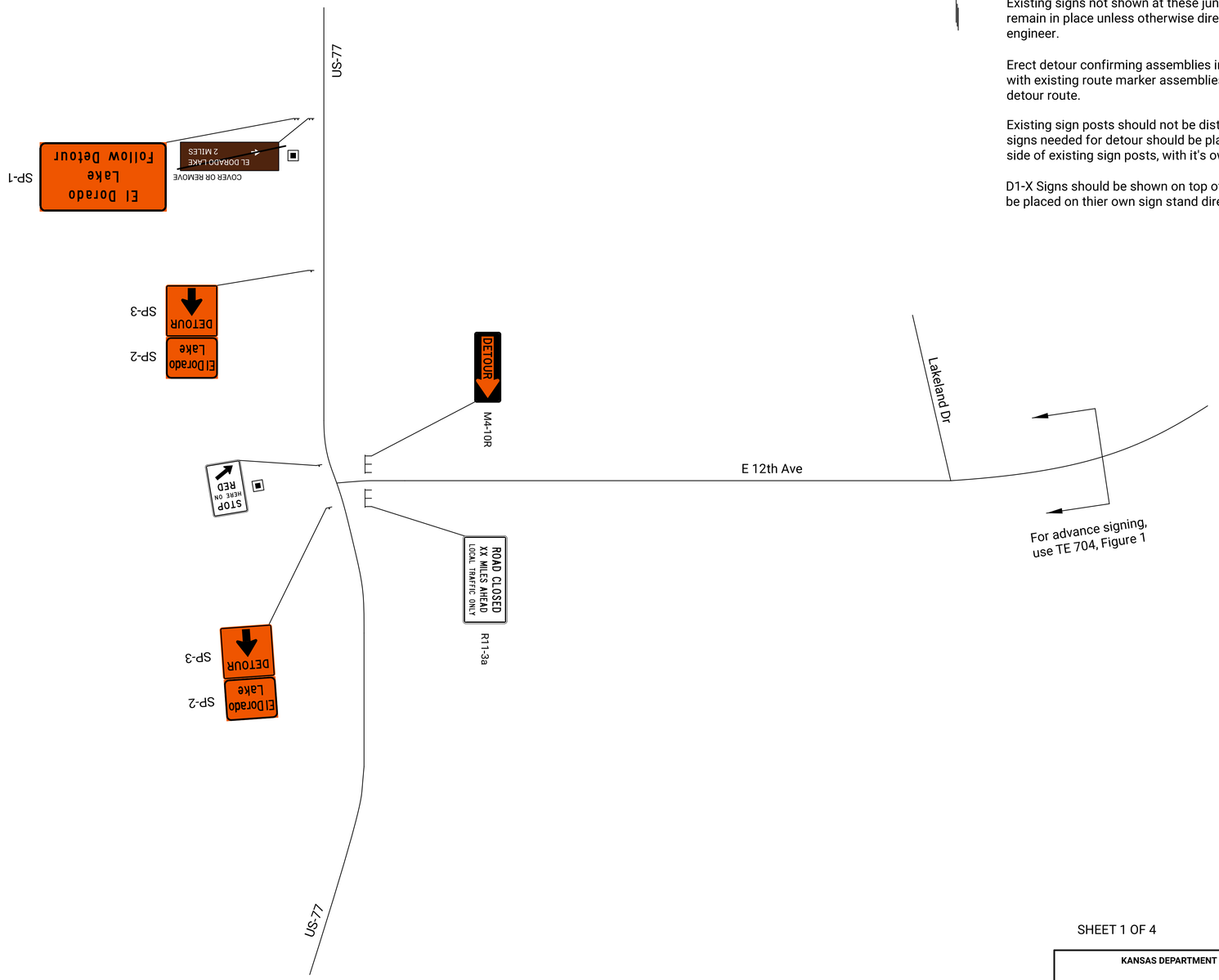
All conflicting route markers along the detour route shall be covered or removed.

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 thier own sign stand directly above and behind.



For advance signing, use TE 704, Figure 1

NOT TO SCALE

- Type "A" Low Intensity Warning Light
- Type III Barricades
- Existing

SHEET 1 OF 4

KANSAS DEPARTMENT OF TRANSPORTATION

US-77 / E 12th Ave Intersection
(El Dorado Lake Detour)

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

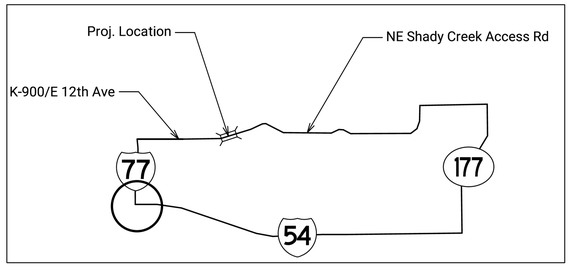
KDOT Graphics Certified 07-16-2025

Sh. No. 78

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : ka647401cdt-01.dgn Traffic

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	79	101



NOTE: Circle on map denotes location of detour.

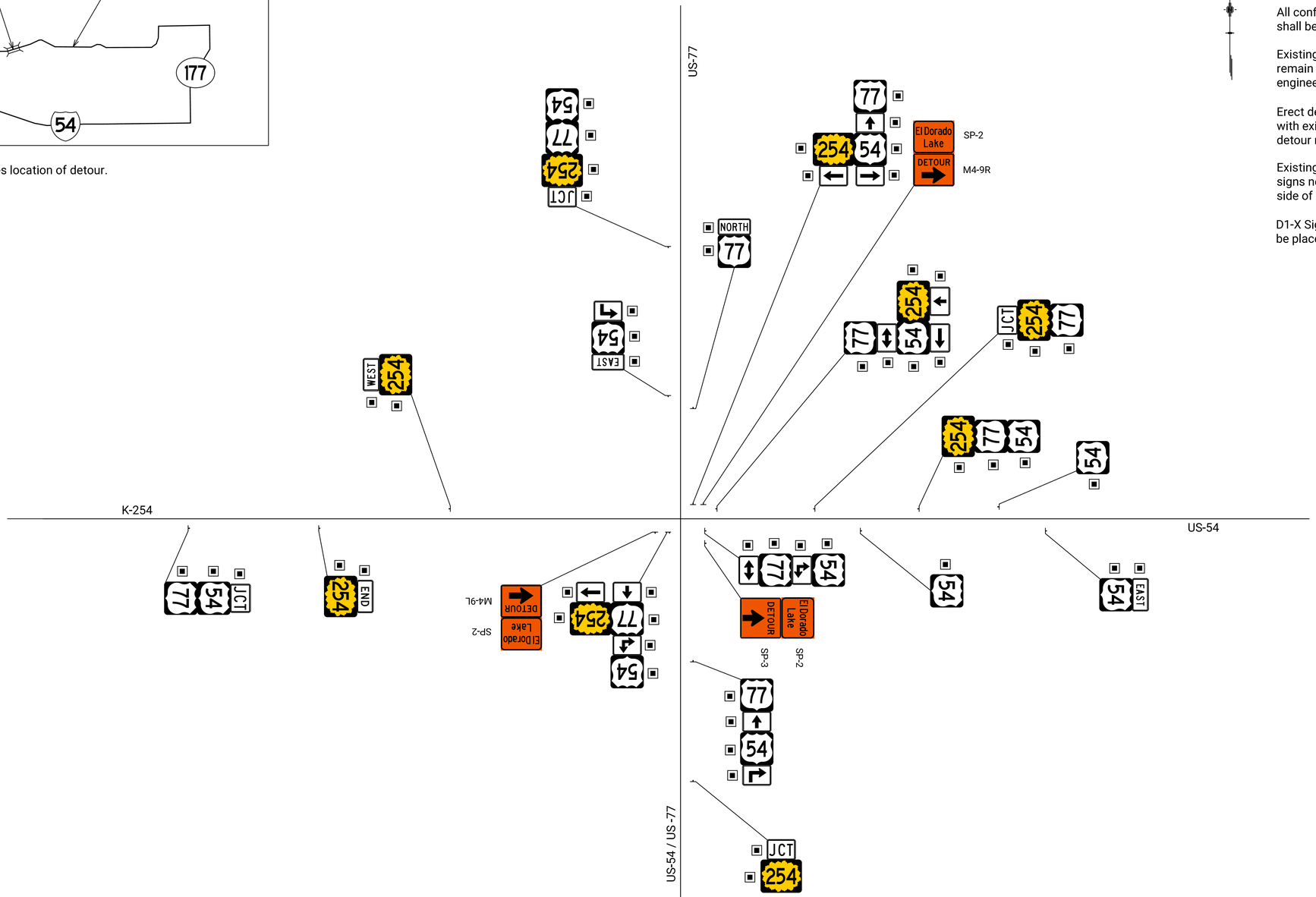
All conflicting route markers along the detour route shall be covered or removed.

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 thier own sign stand directly above and behind.



NOT TO SCALE

- ○ Type "A" Low Intensity Warning Light
- ⌊⌋ Type III Barricades
- ▣ Existing

SHEET 2 OF 4

KANSAS DEPARTMENT OF TRANSPORTATION

US-54 / US-77 / US-254 Intersection
(El Dorado Lake Detour)

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

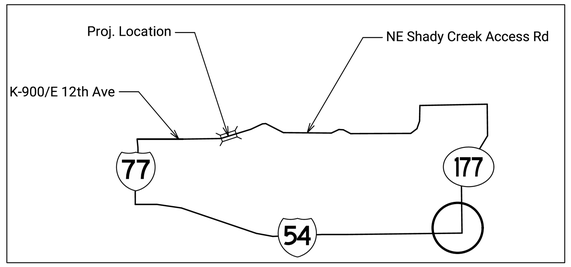
KDOT Graphics Certified 08-28-2024

Sh. No. 79

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : ka6474401cdt-02.dgn Traffic

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	80	101



NOTE: Circle on map denotes location of detour.

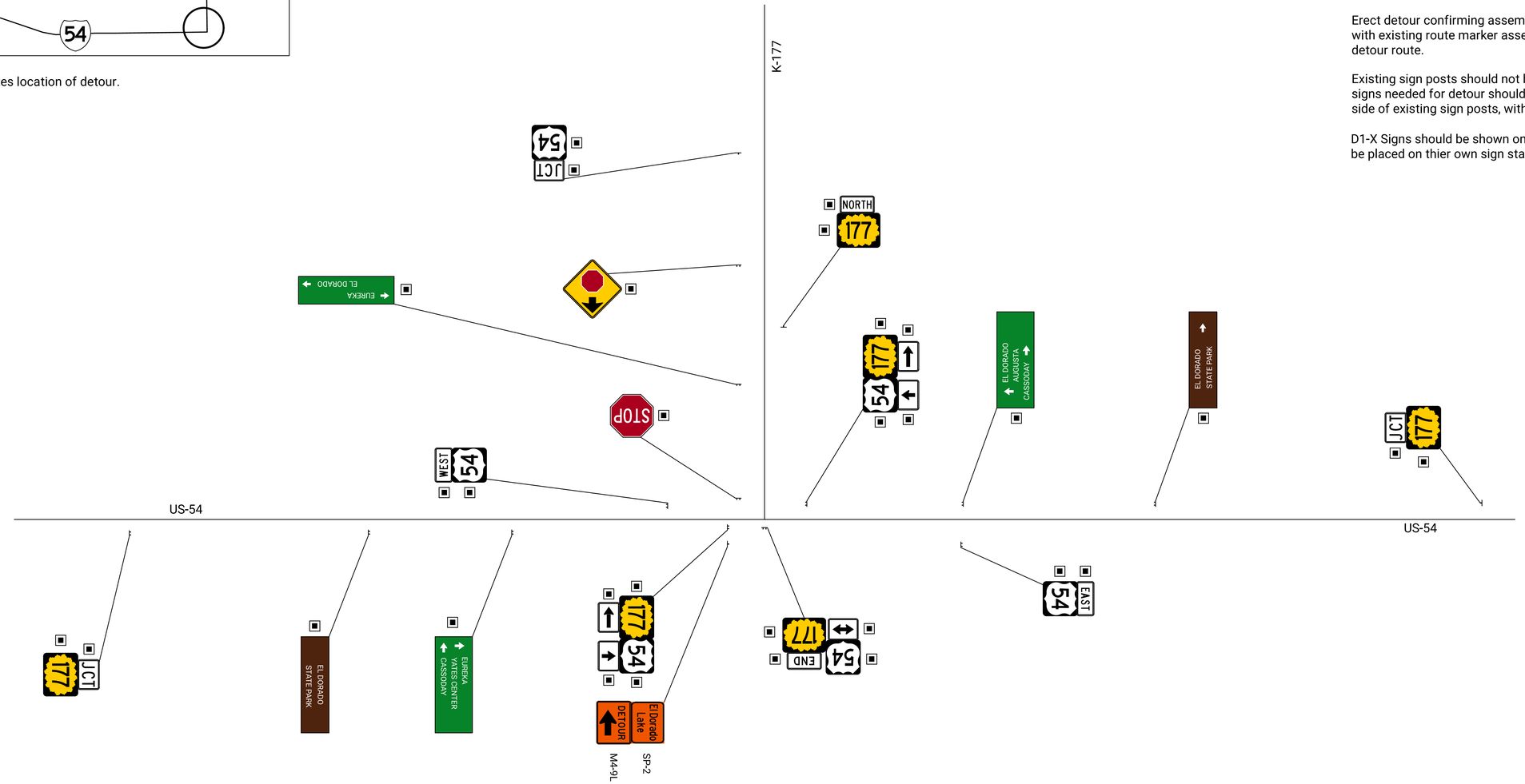
All conflicting route markers along the detour route shall be covered or removed.

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 thier own sign stand directly above and behind.



NOT TO SCALE

- ○ Type "A" Low Intensity Warning Light
- ⊔⊔ Type III Barricades
- ▣ Existing

SHEET 3 OF 4

KANSAS DEPARTMENT OF TRANSPORTATION

US-54 / US-177 Intersection
(El Dorado Lake Detour)

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

KDOT Graphics Certified 07-16-2025

Sh. No. 80

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : ka6474401cdt-03.dgn Traffic

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	81	101

All conflicting route markers along the detour route shall be covered or removed.

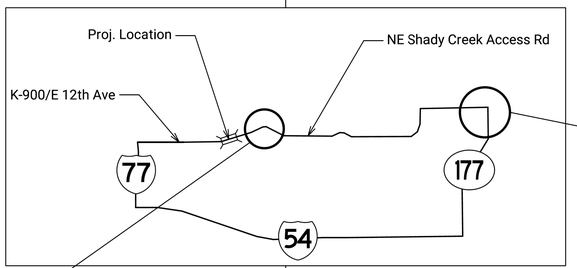
Existing signs not shown at these junctions shall remain in place unless otherwise directed by the engineer.

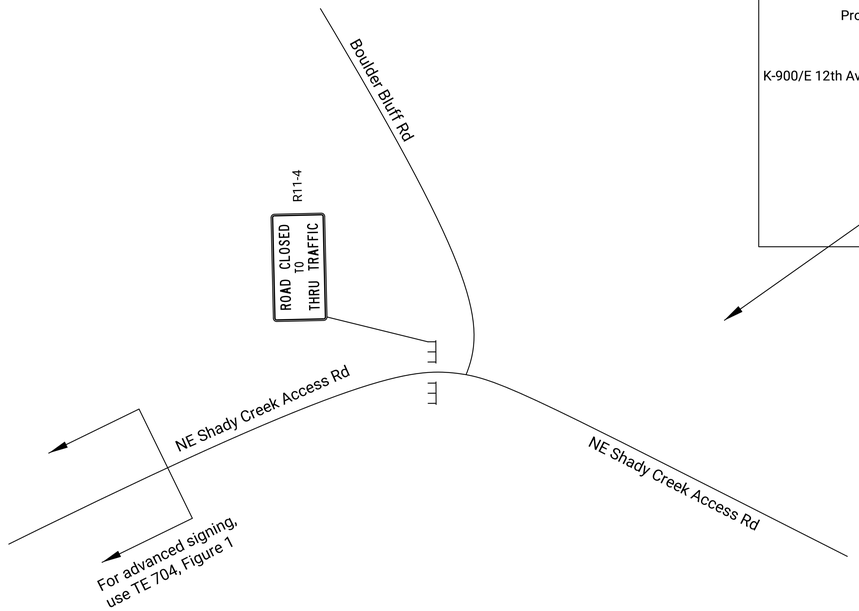
Erect detour confirming assemblies in conjuction with existing route marker assemblies along detour route.

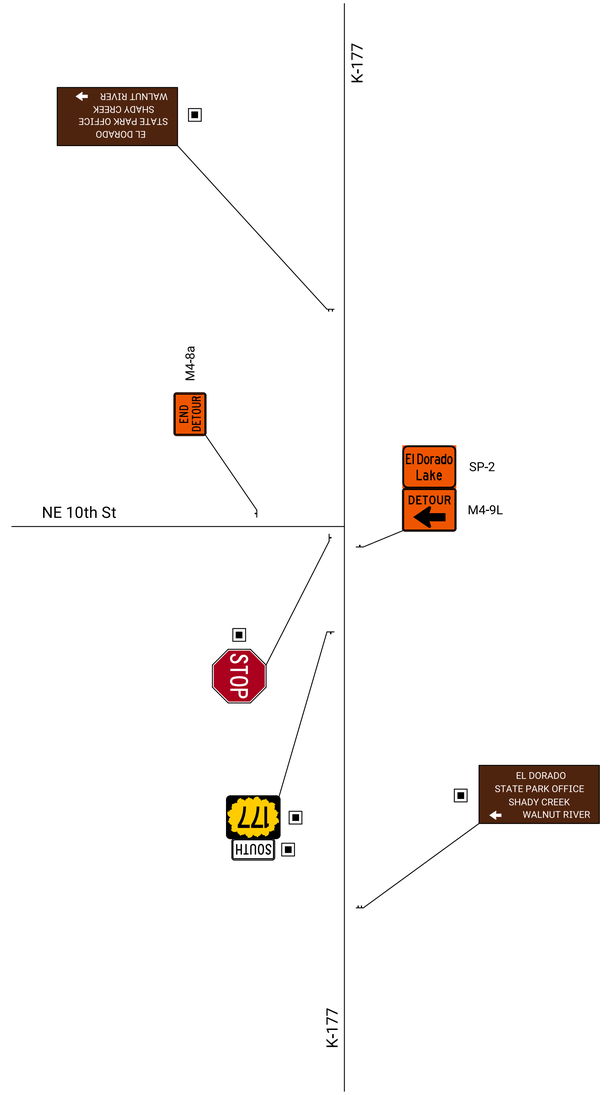
Existing sign posts should not be disturbed. Any signs needed for detour should be placed along side of existing sign posts, with it's own post.

D1-X Signs should be shown on top of existing signs but, be placed on thier own sign stand directly above and behind.

NOTE: Circle on map denotes location of detour.







NOT TO SCALE

- ○ Type "A" Low Intensity Warning Light
- ⊔⊔ Type III Barricades
- ▣ Existing

SHEET 4 OF 4

KANSAS DEPARTMENT OF TRANSPORTATION

K-177 / NE 10th St / Boulder Bluff Rd
(El Dorado Lake Detour)

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

KDOT Graphics Certified 07-16-2025

Sh. No. 81

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : ka647401cdt-04.dgn Traffic

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.

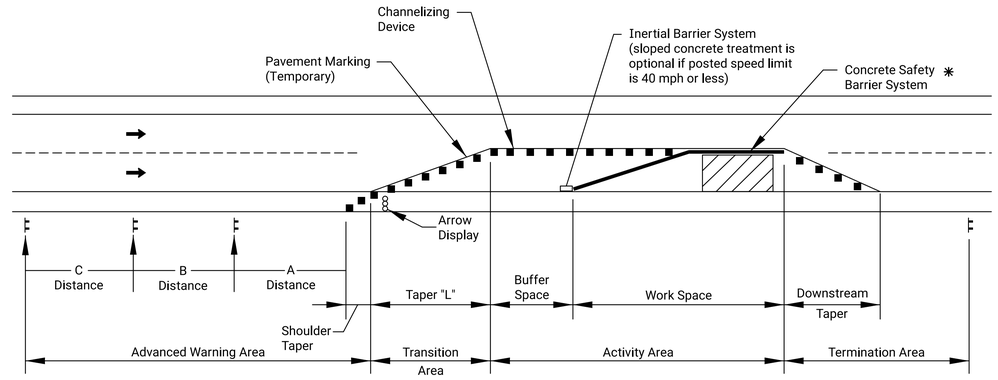
3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that 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 NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	82	101



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

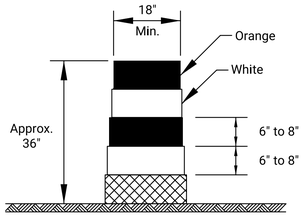
FHWA APPROVAL		APP'D.	Eric Kocher
DESIGNED B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 07-18-2022 Sh. No. 82

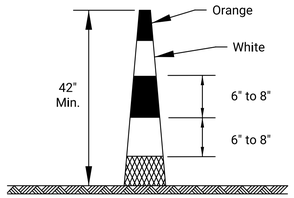
KDOT Graphics Certified

Plotted by : Keegan.Mathesis@ks.gov 16-JUL-2025 15:09
File : TE700.dgn

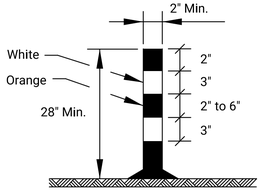
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	83	101



DRUM

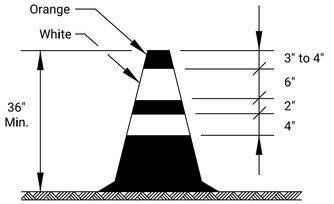


CONICAL
DELINEATOR

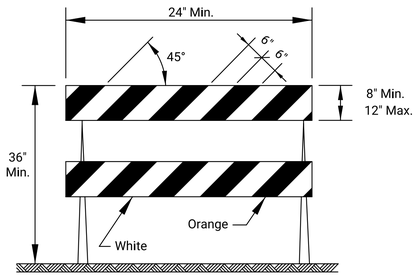


TUBULAR MARKER

Striping as shown for up to 42".

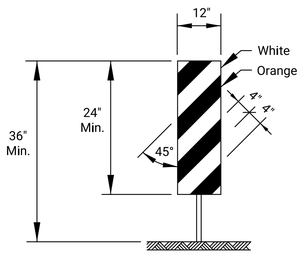


TRAFFIC CONE



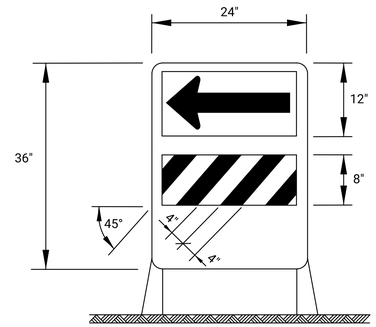
TYPE 2 BARRICADE

For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.



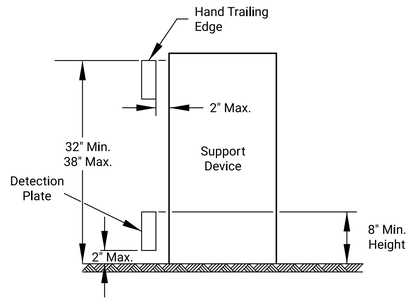
VERTICAL PANEL

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.	

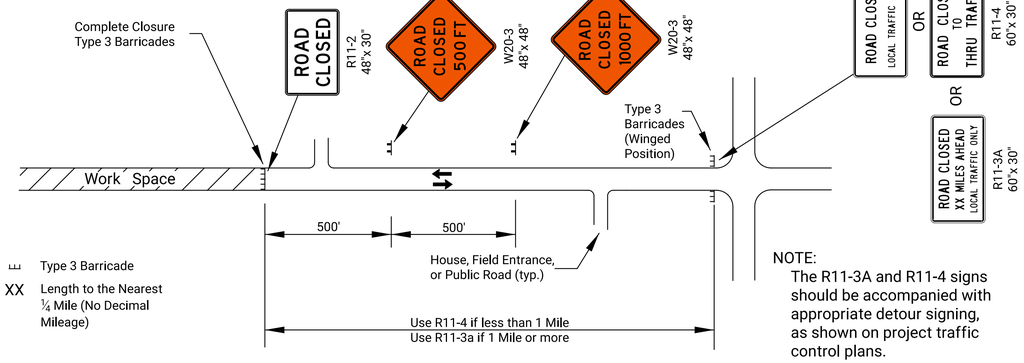
KDOT Graphics Certified 07-18-2022 Sh. No. 83

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : TE702.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	84	101

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)

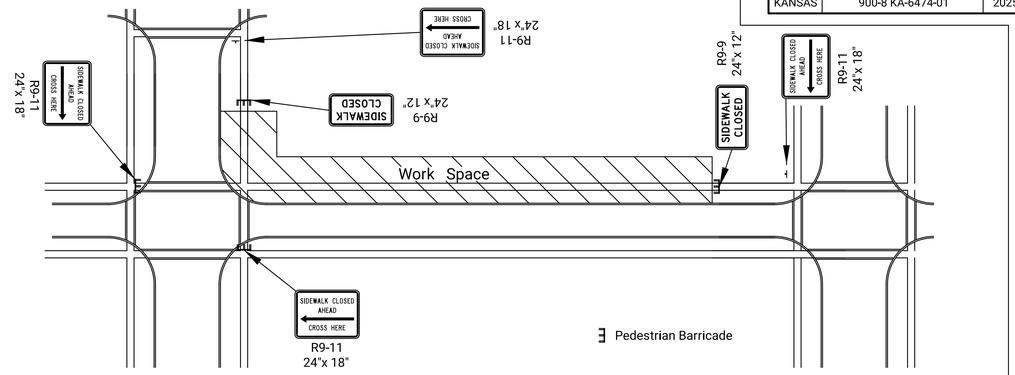


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE

Note: Sign shown for one approach to intersection (work zone).

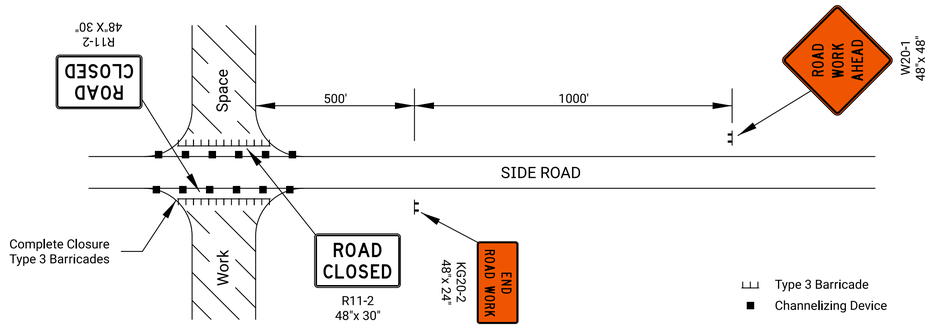


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

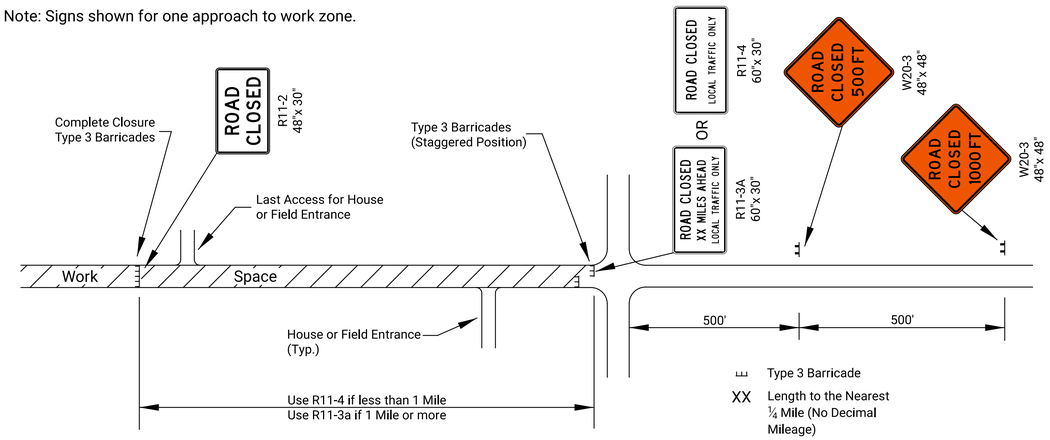
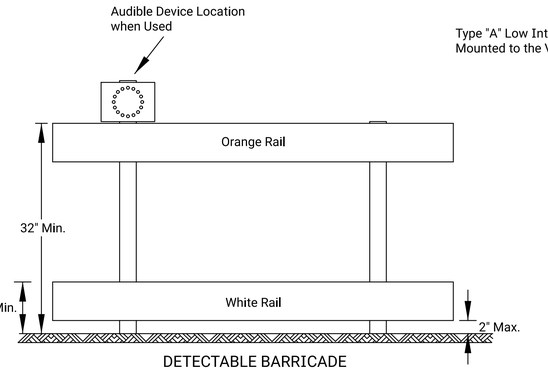
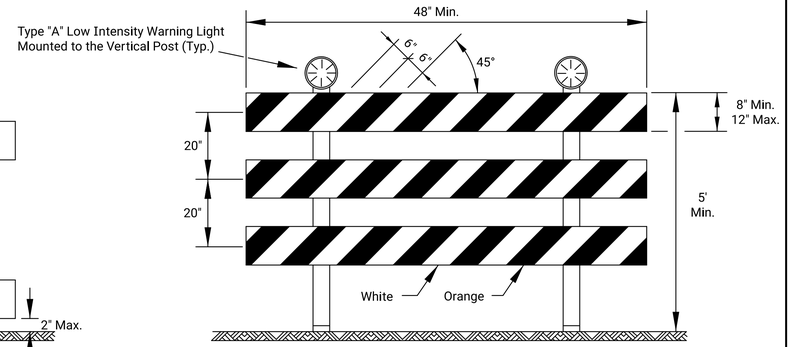


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS



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. 84

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : TE704.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	85	101

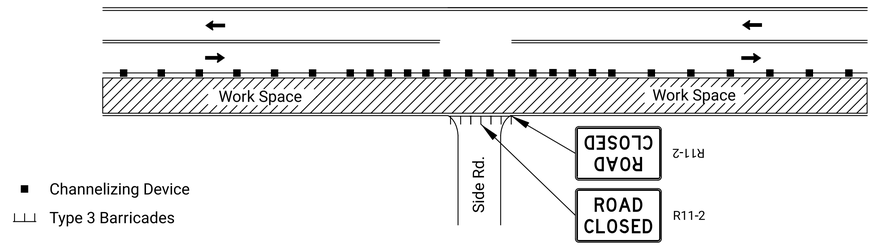


FIGURE 1: SIDE ROAD OR ENTRANCE CLOSED THROUGH WORK AREA

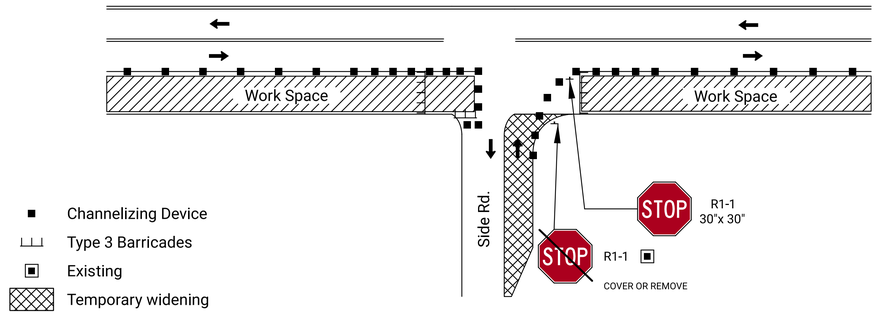


FIGURE 4: SIDE ROAD OR ENTRANCE CONSTRUCTED HALF AT A TIME: TWO WAY TRAFFIC REQUIRED

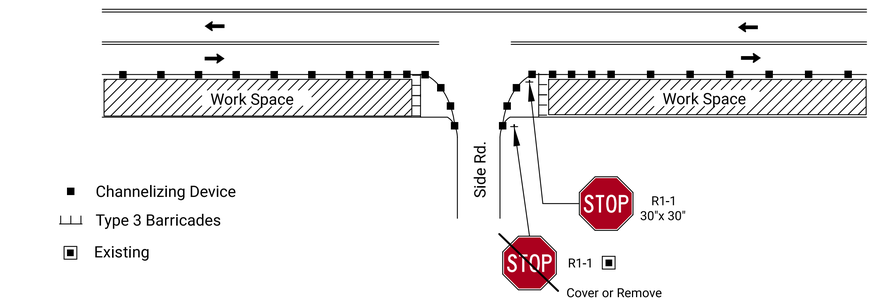


FIGURE 2: SIDE ROAD OR ENTRANCE OPEN THROUGH WORK AREA

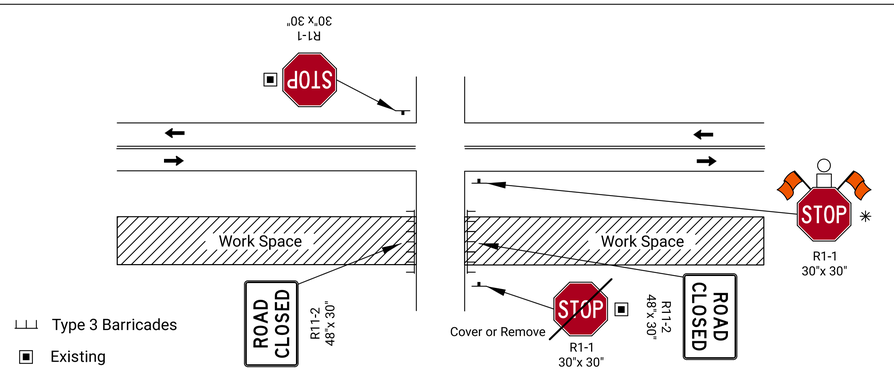


FIGURE 5: SIDE ROAD OPEN THROUGH WORK AREA ON DIVIDED ROADWAY

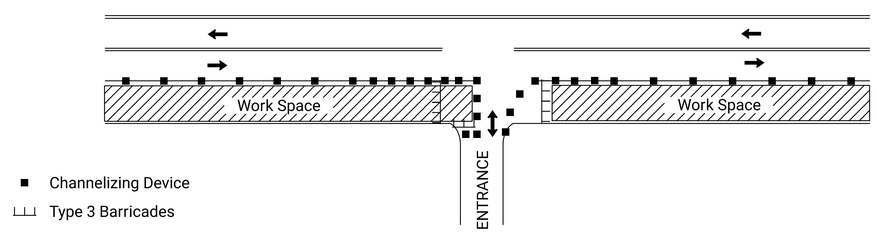


FIGURE 3: LOW VOLUME ENTRANCE CONTRUCTED HALF AT A TIME

Note: Consider large vehicles making right turns into and out of entrance and use figure 4 as needed

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. 85

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : TE705.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	86	101

SIGN LAYOUT INFORMATION

END ROAD WORK
KG20-2

Std. Size Expwy/Freeway
6" C
48"x 24"

WAIT FOR PILOT CAR
KG20-5

Std. Size Expwy/Freeway
6" C
48"x 24"

WORK ZONE
KM4-20

Std. Size	Expwy/Freeway
3" C	6" C
24"x 6"	48"x 12"

NEXT X MILES
W7-3a

Mileage to be Determined by the Engineer.


W8-17

Std. Size Expwy/Freeway
48"x 48"



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"



W8-11

Std. Size Expwy/Freeway
8" D
48"x 48"

SHOULDER DROP-OFF
W8-17P
(Optional)

Std. Size Expwy/Freeway
30"x 24"

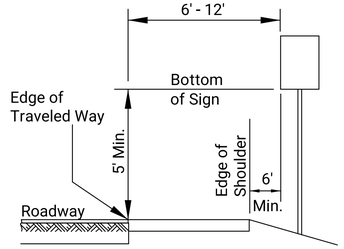
NB US-75 CLOSED
FOLLOW DETOUR
SP-01
(Special Sign)

Std. Size	Expwy/Freeway
6" C	10" D

US-75 CLOSED
NORTH OF Topeka
FOLLOW DETOUR
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.

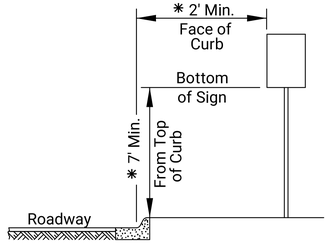


RURAL

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.

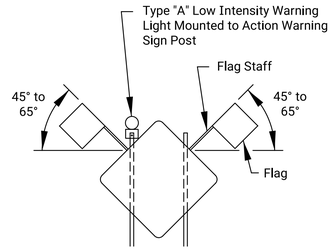
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

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.

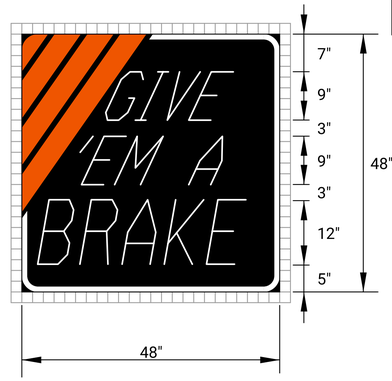
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

* 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.



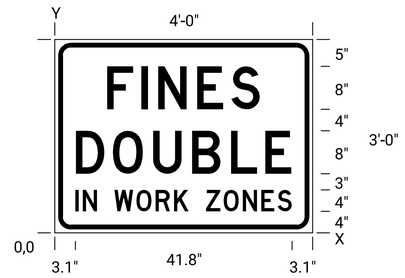
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

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	X	F	I	N	E	S	X									8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D	X	D	O	U	B	L	E	X								8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D	X	I	N	X	W	O	R	K	X	Z	O	N	E	S	X	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.	

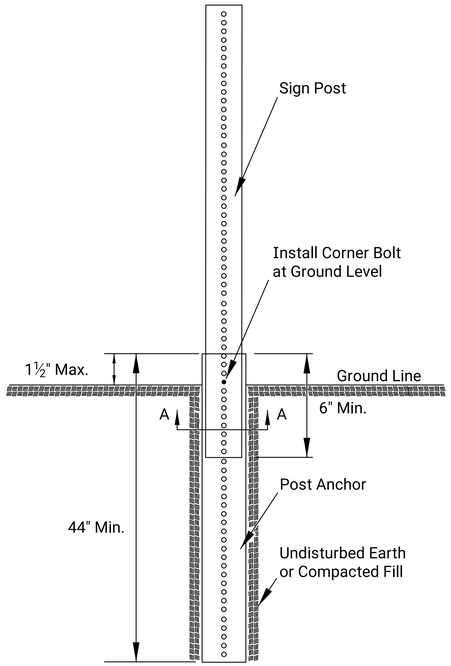
KDOT Graphics Certified 12-16-2022 Sh. No. 86

KDOT Graphics Certified

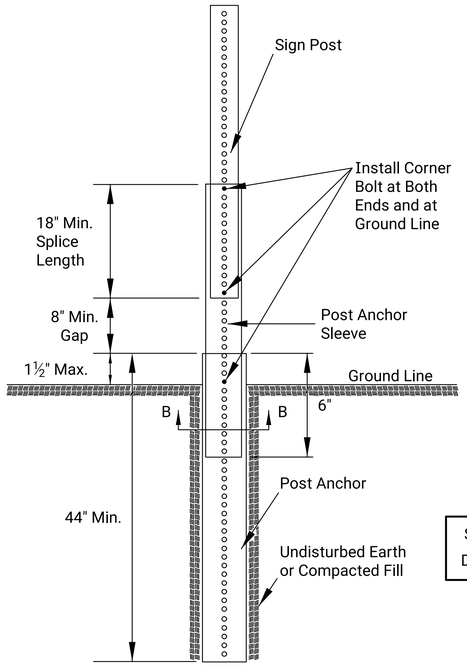
Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : TE710.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	87	101

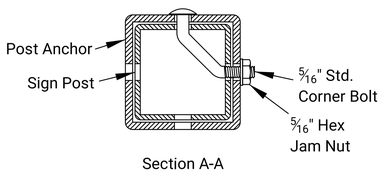
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



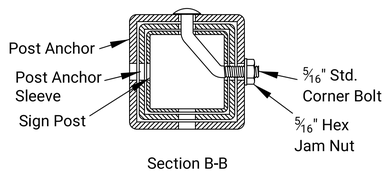
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

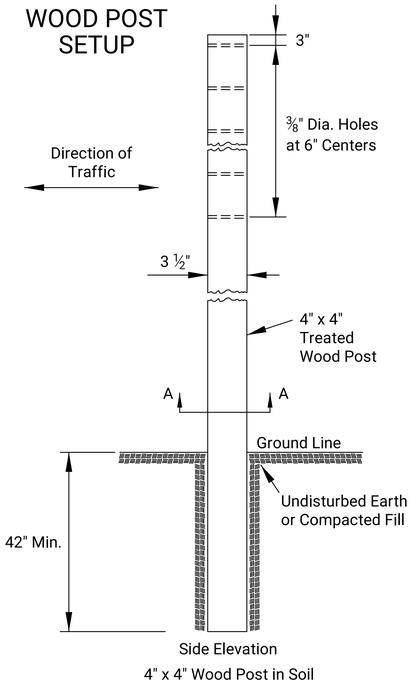


Section B-B

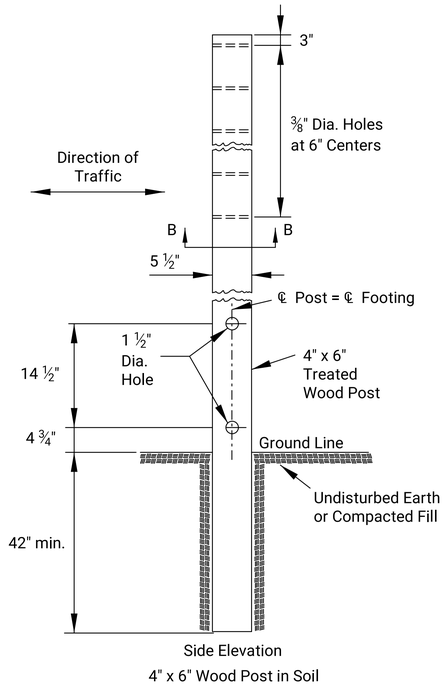
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

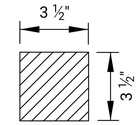
WOOD POST SETUP



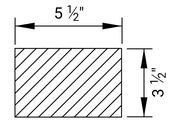
Side Elevation
4" x 4" Wood Post in Soil



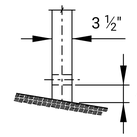
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



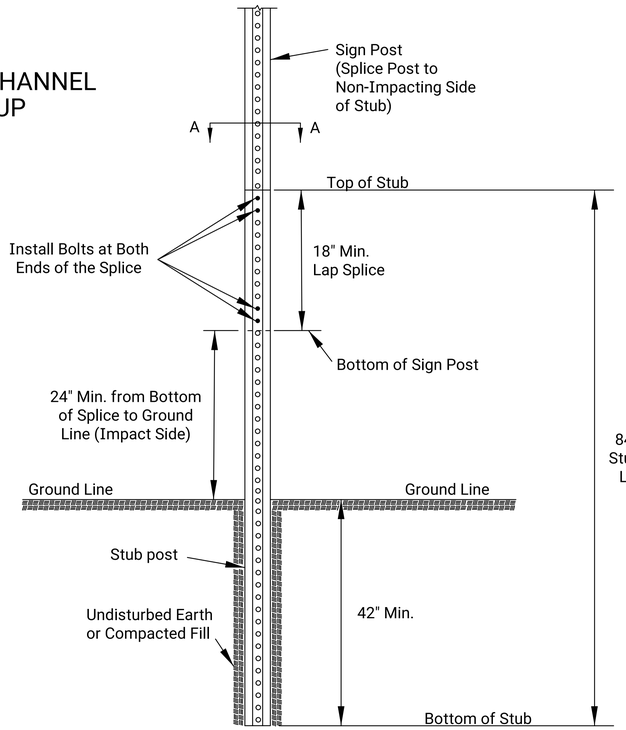
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

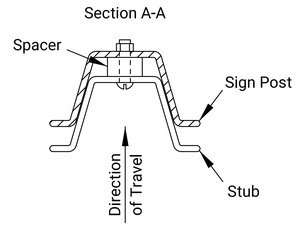
3 LB/F U-CHANNEL SETUP



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

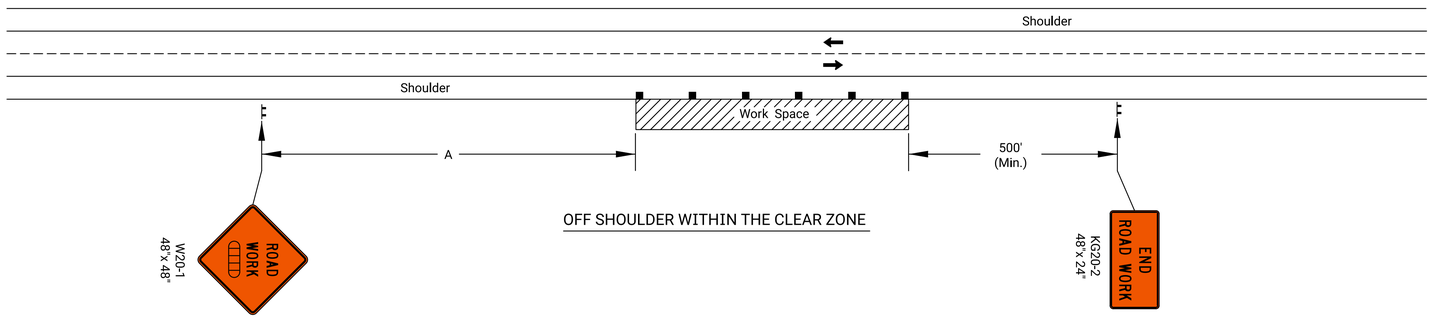
FHWA APPROVAL			06-01-15	APP'D.	Kristina Ericksen		
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED		
DESIGN CK.		DETAIL CK.		QUAN.CK.	TRACE CK.		

KDOT Graphics Certified 07-18-2022 Sh. No. 87

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
File : TE712.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	88	101

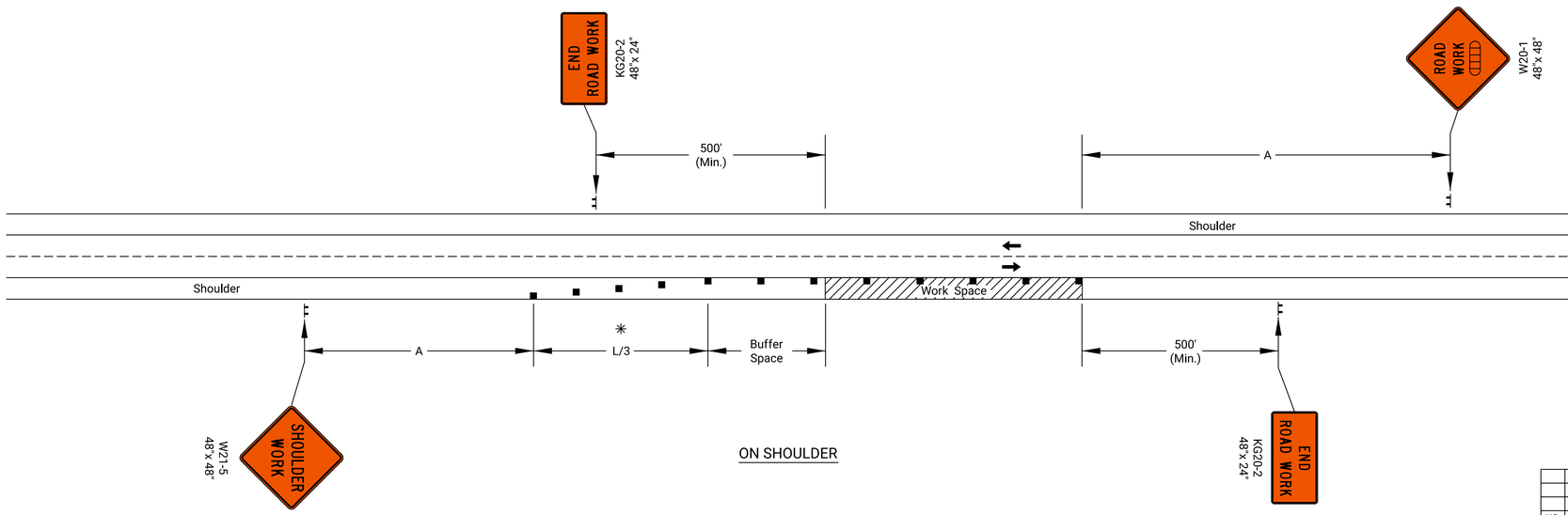


OFF SHOULDER WITHIN THE CLEAR ZONE

Notes:

No traffic control is required if the Work Space is located outside of the clear zone.

For operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with high-intensity rotating, flashing, oscillating, or strobe lights is used.



ON SHOULDER

✳ Omit taper if paved shoulder is less than 8' wide.

■ Channelizing Device

Ahead, 1500 ft, or 1 Mile

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SHOULDER WORK UNDIVIDED ROADWAY

TE720

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.	

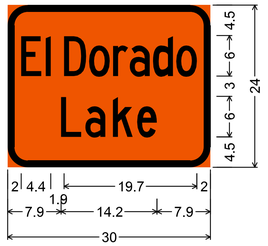
KDOT Graphics Certified 07-18-2022 Sh. No. 88

KDOT Graphics Certified

Plotted by : Keegan.Matheis@ks.gov 16-JUL-2025 15:09
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
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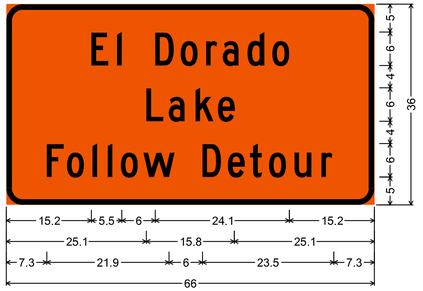
SP-2



3.0" Radius, 1.0" Border, Black on Fluorescent orange;
"El Dorado", C specified length;
"Lake", C 60% spacing;
Table of letter and object lefts

E 2.0	l 5.5						
	D 8.3	o 12.0	r 15.6	a 18.1	d 21.5	o 24.9	
L 7.9	a 11.5	k 15.6	e 19.2				

SP-1



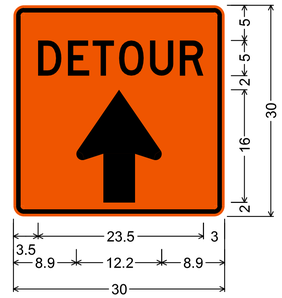
3.0" Radius, 1.0" Border, Black on Fluorescent orange;
"El Dorado", C; "Lake", C; "Follow Detour", C;
Table of letter and object lefts

E 15.2	l 19.9	D 26.7	o 31.3	r 35.8	a 38.8	d 43.2	o 47.7	
L 25.1	a 29.1	k 33.9	e 37.9					
F 7.3	o 10.9	l 15.4	l 18.2	o 20.5	w 24.6	D 35.2	e 39.7	t 43.7	o 47.1	u 51.7	r 56.5

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over
SP-1		1
SP-2	7	
SP-3	3	

SP-3



M4-9(R) STD;
1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
"DETOUR", D 75% spacing;
Standard Arrow Custom 16.0" X 12.1" 90^;
Table of letter and object lefts

D 3.5	E 7.7	T 11.3	O 15.0	U 19.4	R 23.6

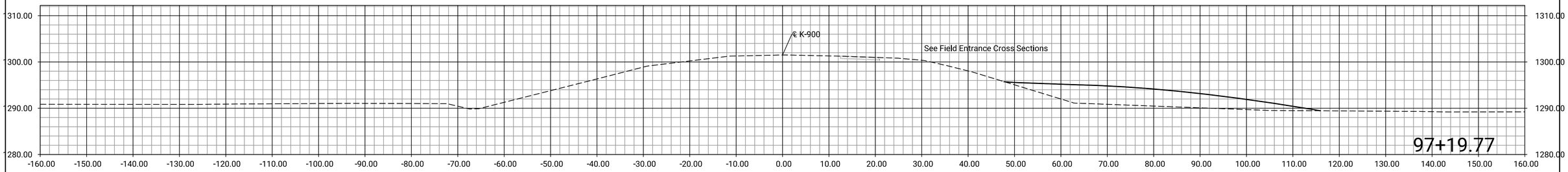
8.9

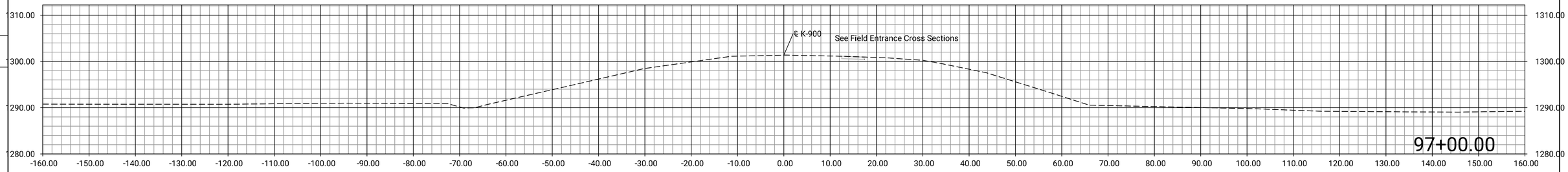
SUMMARY OF TRAFFIC CONTROL DEVICES (EACH PER DAY)

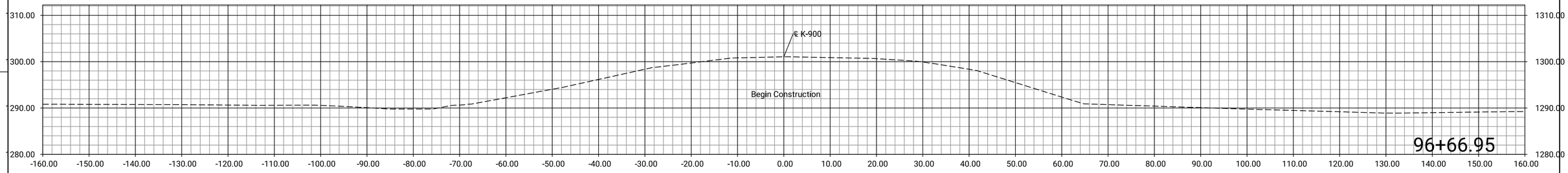
✳ Quantity most used on the project at any one time

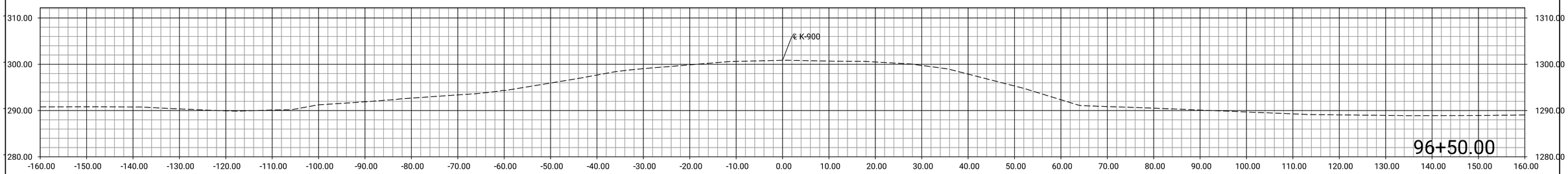
Work Zone Signs ✳			
Sign No.	Size - Sq.Ft.		
	0-9.25	9.26-16.25	16.26 & Over
W20-7		2	
W20-1		2	
W21-5		2	
KG20-2	2		
M4-8a	1		
M4-10	1		
M4-9		4	
R11-3a		1	
R11-4		1	
W20-3		4	
R11-2		2	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	90	101







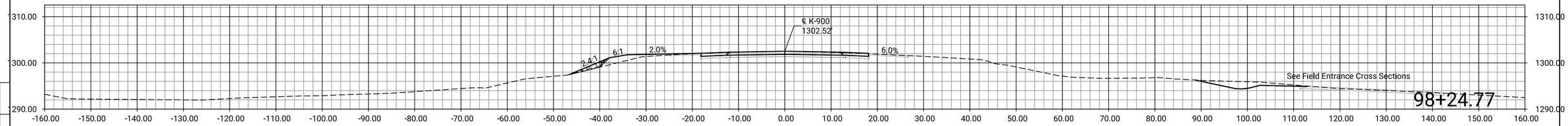


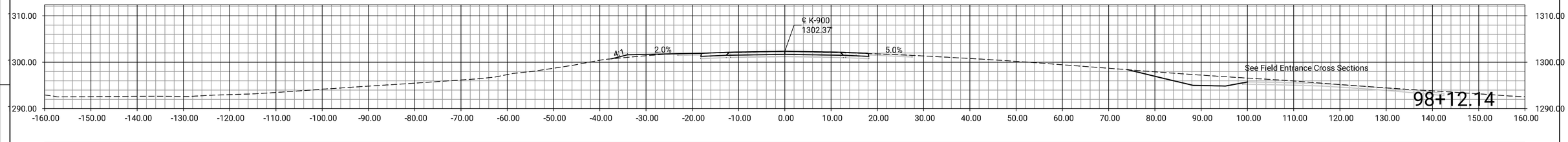
BY	DATE
REFERENCES NOTED	
REFERENCES CHECKED	

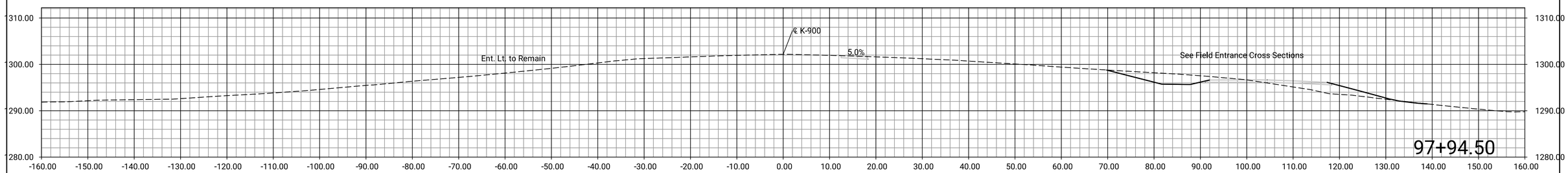
Plotted by : Jay.Sanders@ks.gov 2-MAY-2025 13:59
File : ka647401rxs-03.dgn

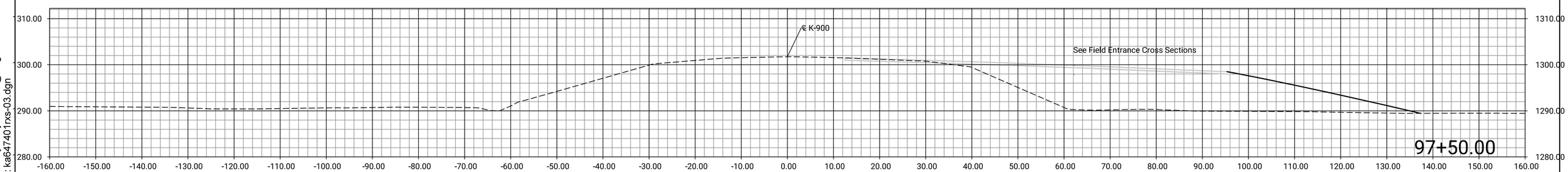
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	91	101

DATE
BY
REFERENCES NOTED
REFERENCES CHECKED





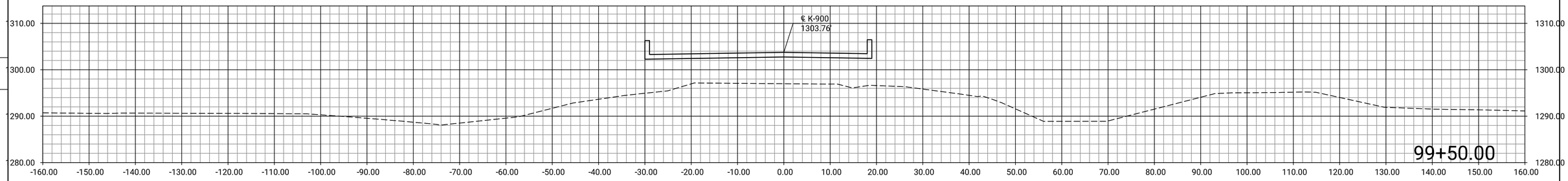


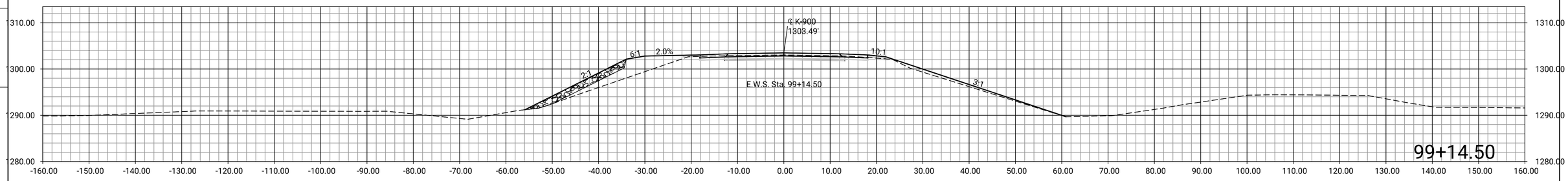


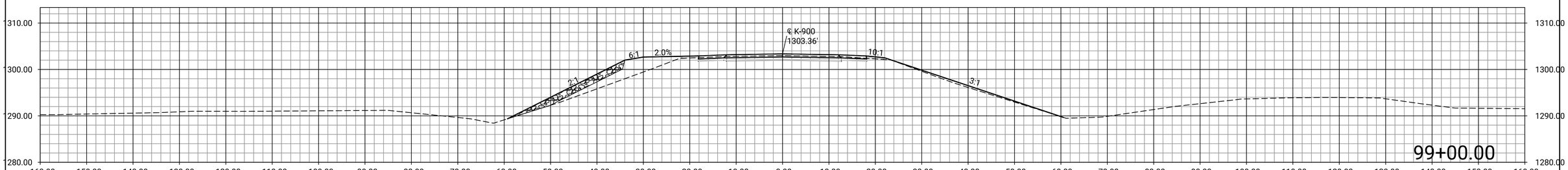
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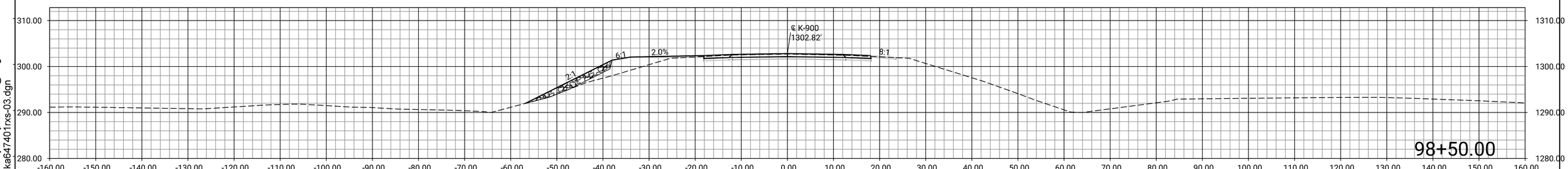
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	92	101

DATE	BY	REFERENCES NOTED
		REFERENCES CHECKED









Plotted by : Jay.Sanders@ks.gov 2-MAY-2025 13:59
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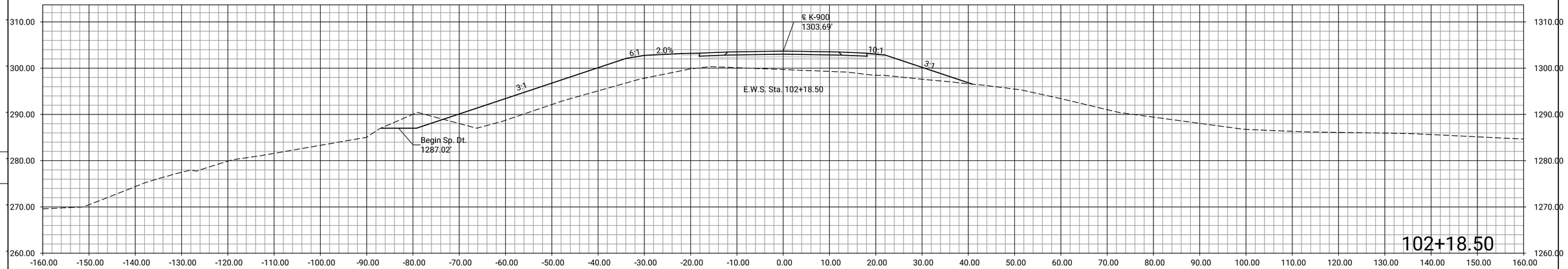
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KANSAS	900-8 KA-6474-01	2025	93	101

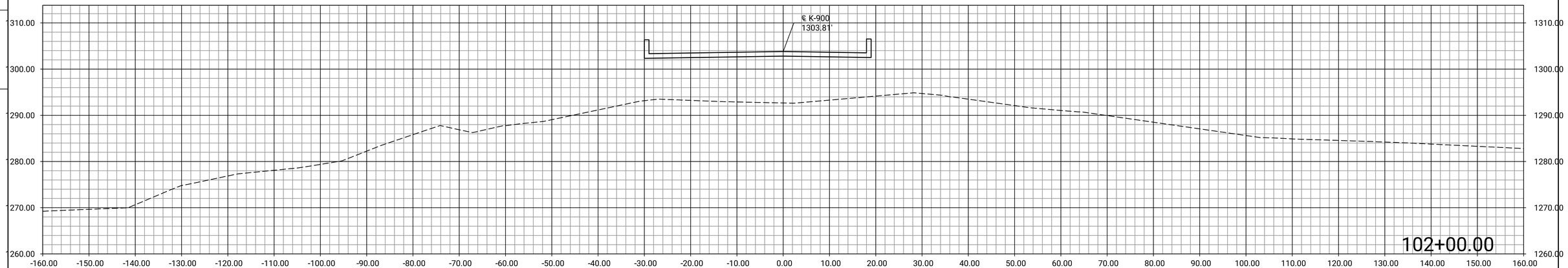
DATE
BY
REFERENCES NOTED
REFERENCES CHECKED

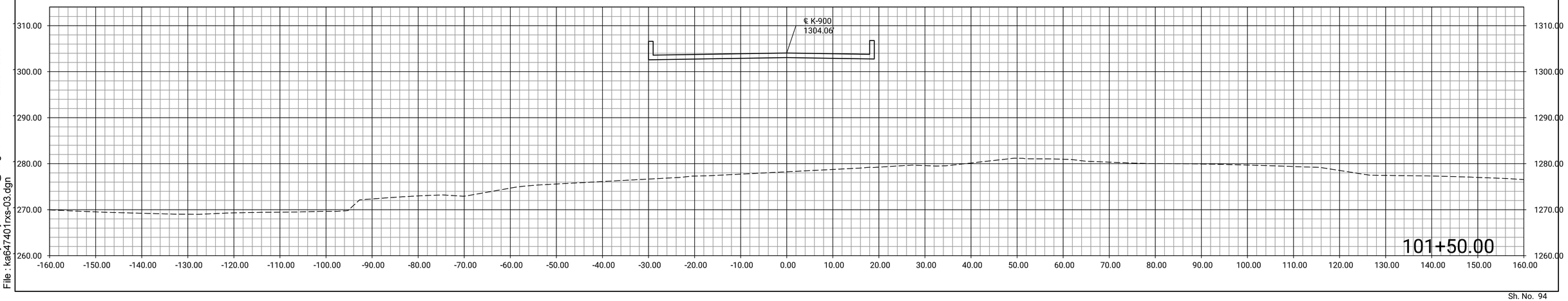
Plotted by : Jay.Sanders@ks.gov 2-MAY-2025 13:59
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	94	101

BY	DATE
REFERENCES NOTED	
REFERENCES CHECKED	

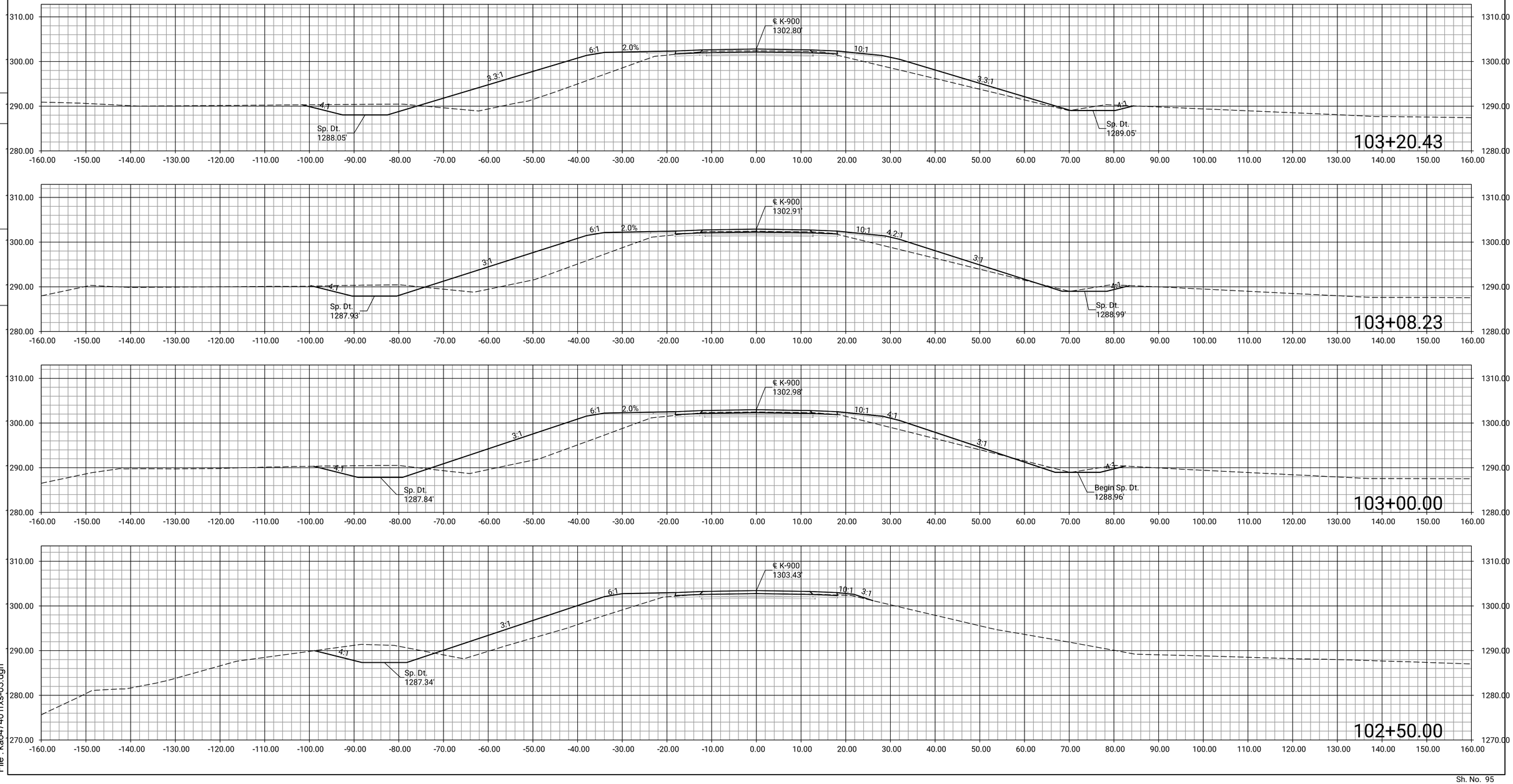






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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	95	101



DATE

BY

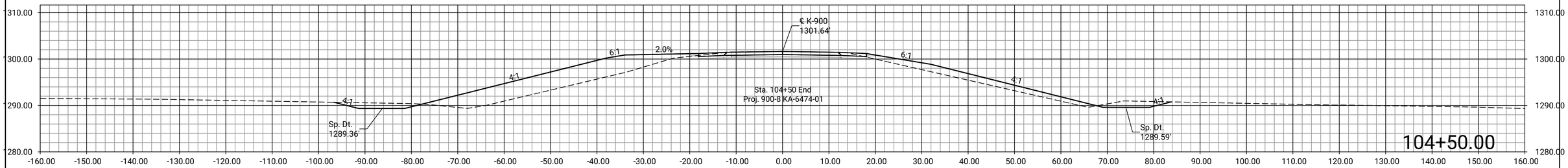
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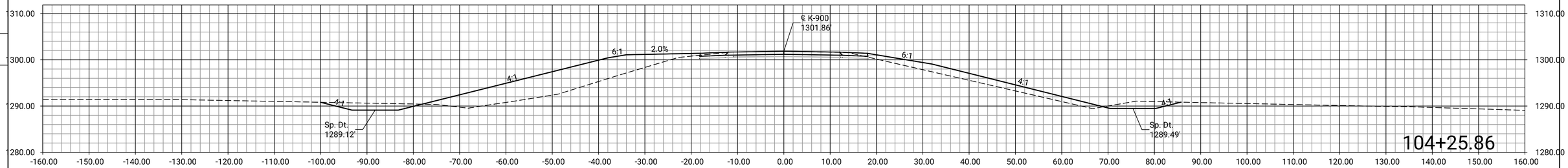
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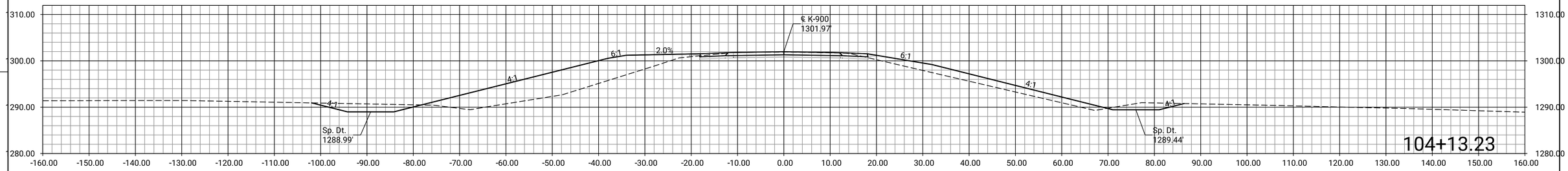
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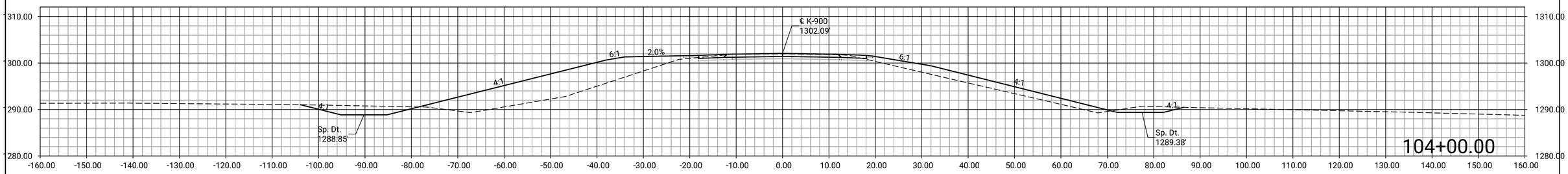
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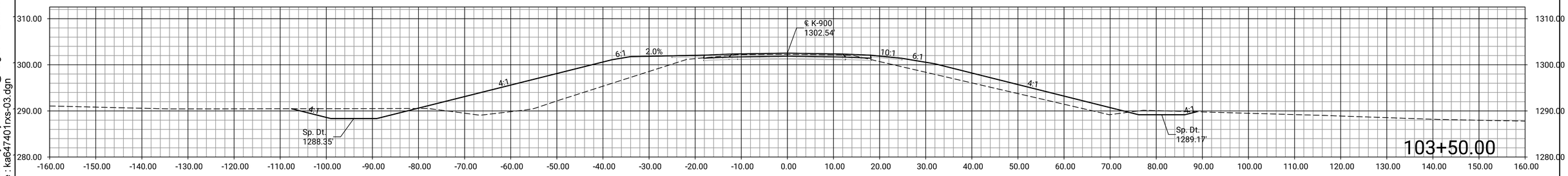
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KANSAS	900-8 KA-6474-01	2025	96	101









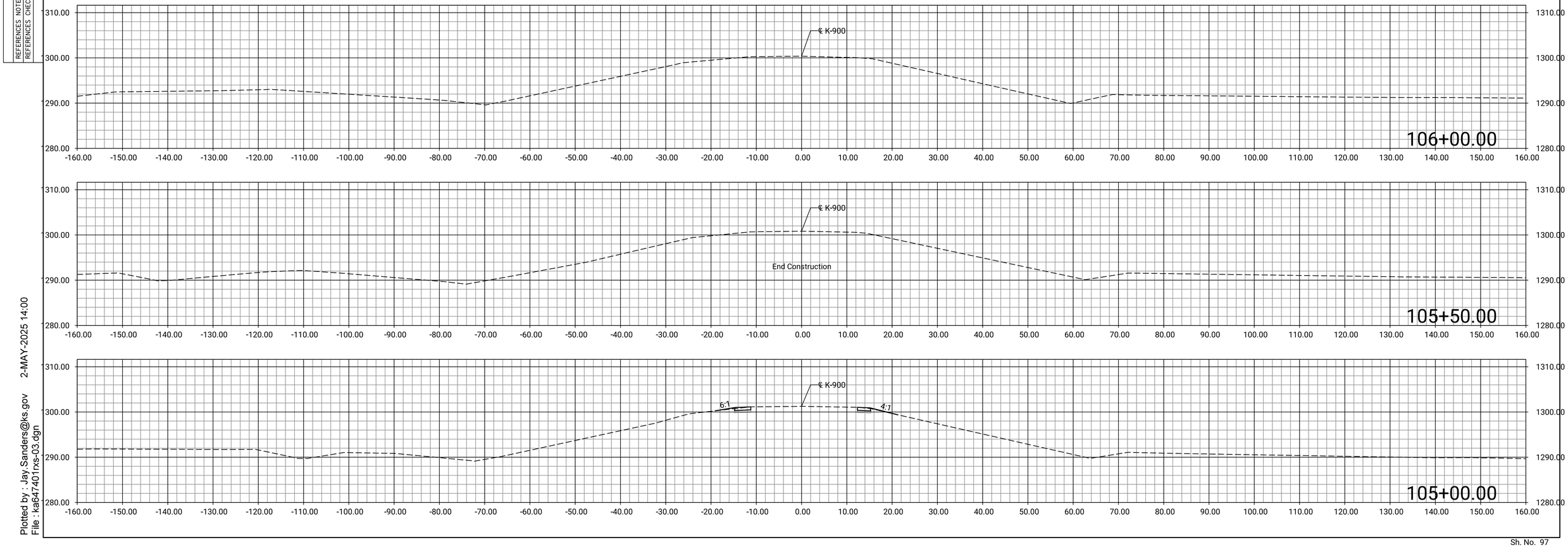


DATE	BY	REFERENCES NOTED
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	97	101

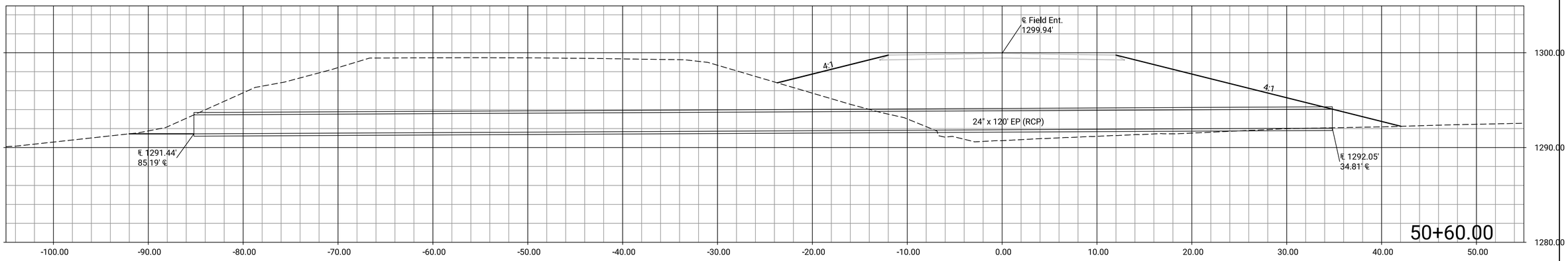
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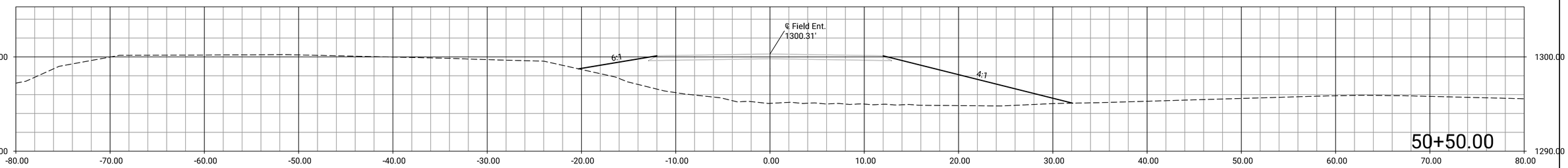


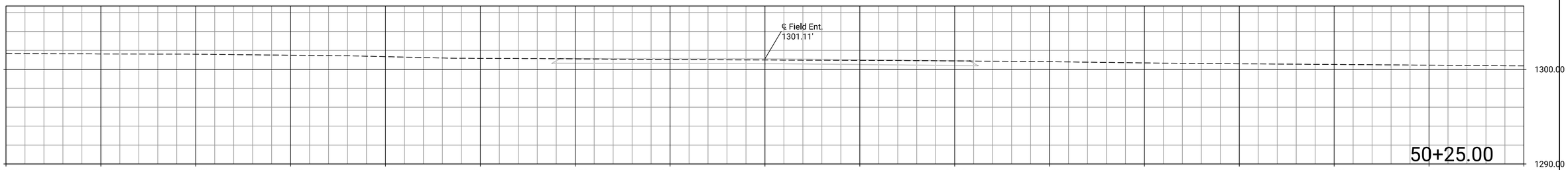
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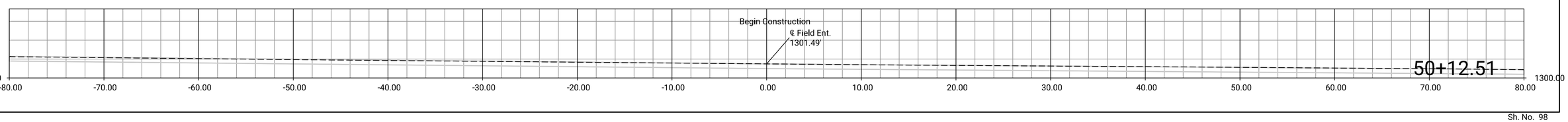
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	98	101

DATE	BY	REFERENCES NOTED	REFERENCES CHECKED



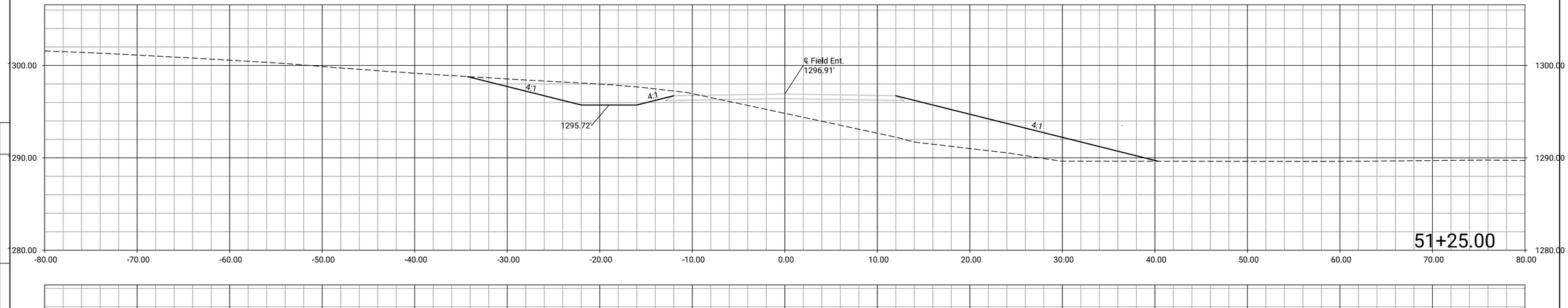


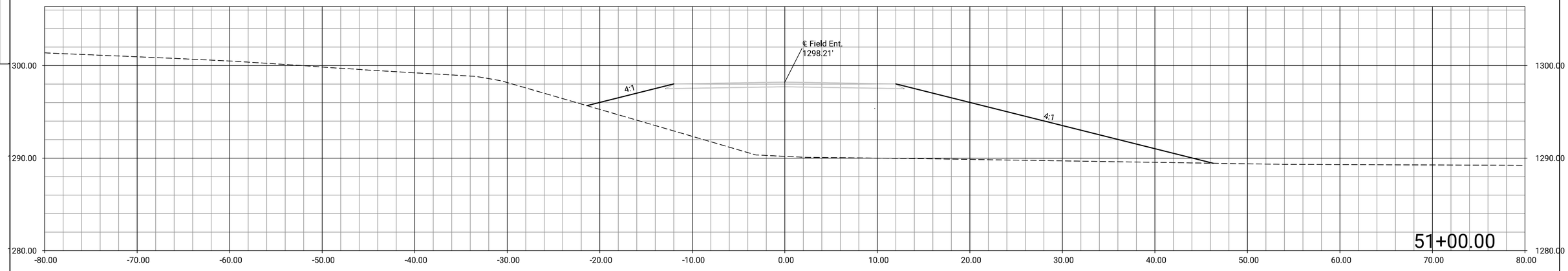


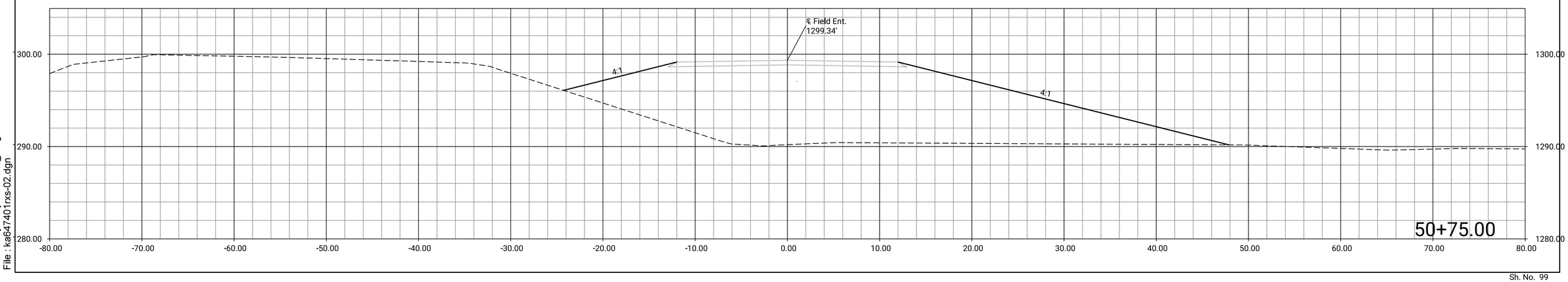


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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
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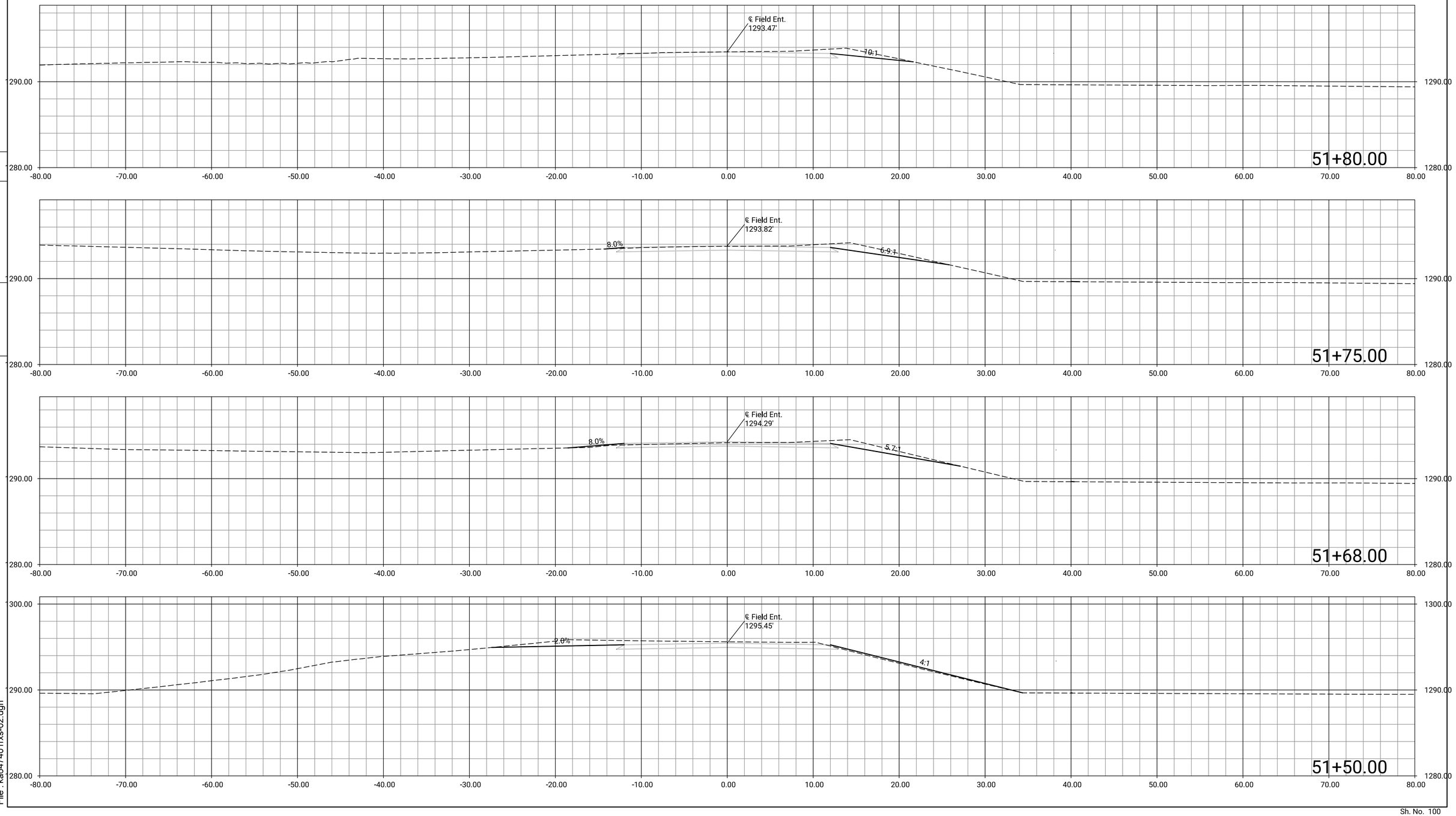




DATE	BY	REFERENCES NOTED
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	100	101

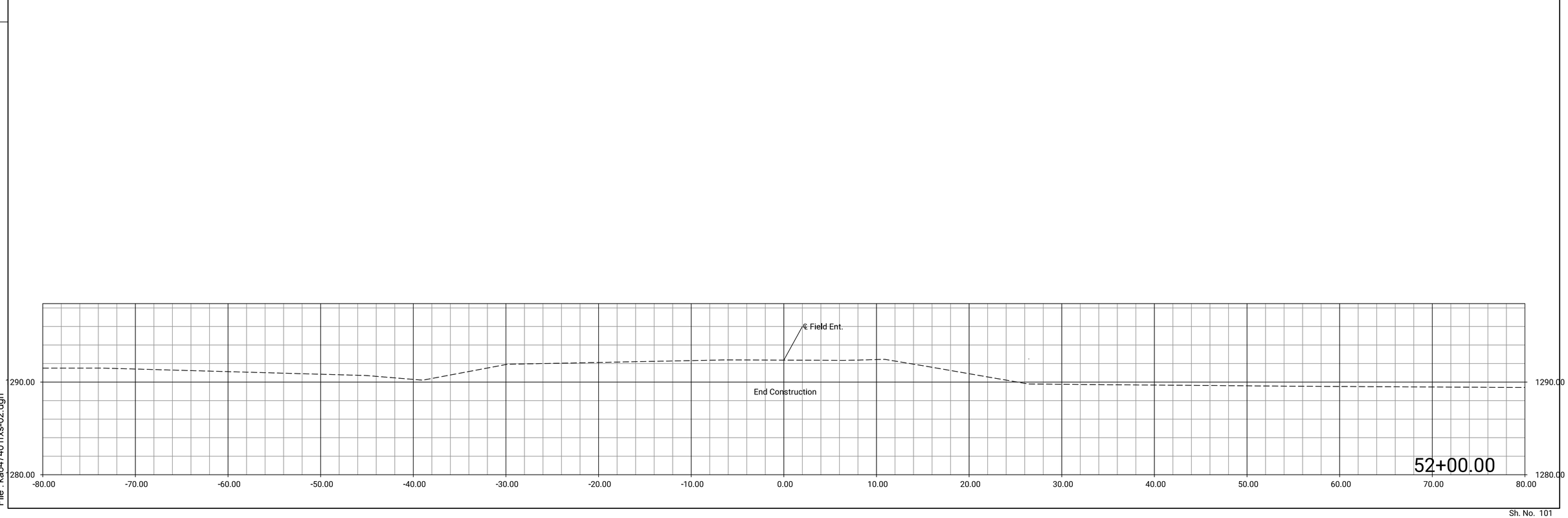


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REFERENCES CHECKED

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	900-8 KA-6474-01	2025	101	101

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REFERENCES NOTED		
REFERENCES CHECKED		



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