STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	1	118

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

PROJ. NO. 09-58 KA-5761-01
FEDERAL AID PROJ. NO. ACSTP-A576(101)

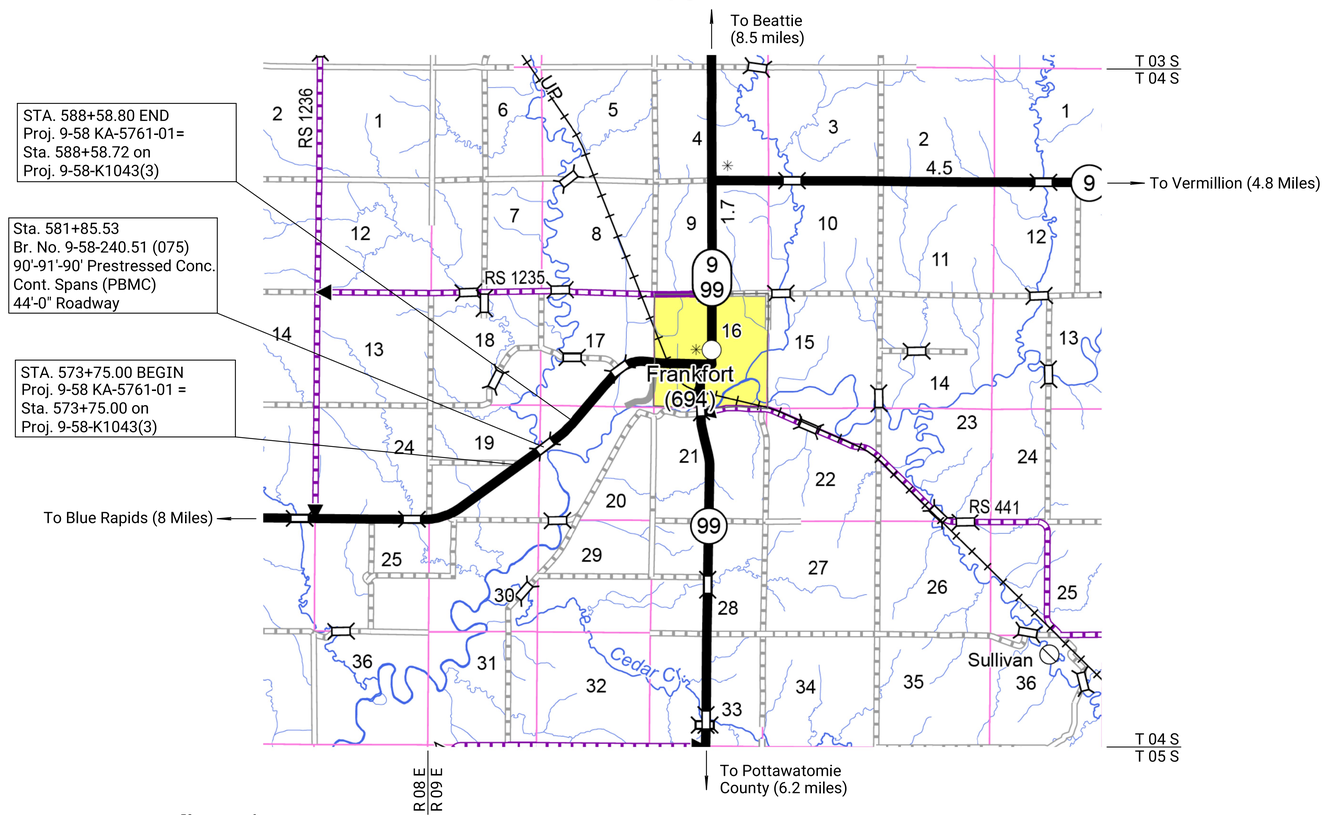
PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT
MARSHALL COUNTY
K-9

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

INDEX OF SHEETS

1	TITLE SHEET
2	SIGN & SEAL SHEET
3	TYPICAL SECTIONS
4	FOUNDATION TREATMENT
5	SALVAGED TOPSOIL
6	GENERAL NOTES SHEET
7-8	PLAN-PROFILE SHEETS
9	CHANNEL CHANGE PLAN-PROFILE SHEETS
10	SECTION CORNER MONUMENTATION DETAIL SHEET
11	R/W SURVEY MONUMENT DETAIL SHEET
12-14	PAVEMENT DETAILS
15-21	GUARDRAIL
22-26	CULVERT END SECTIONS
27-28	PIPE CULVERT DETAILS
29-56	BRIDGE NO. 9-58-240.51 (075)
57	SUMMARY OF QUANTITIES
58	SURFACING QUANTITIES
59-68	TEMPORARY EROSION & POLLUTION CONTROL
69	SEEDING
70-81	SIGNING AND PAVEMENT MARKING
82-83	CONSTRUCTION SEQUENCE
84-97	TRAFFIC CONTROL
98-102	CONCRETE SAFETY BARRIER (TEMPORARY)
103-115	CROSS SECTIONS
116-118	CHANNEL CHANGE CROSS SECTIONS





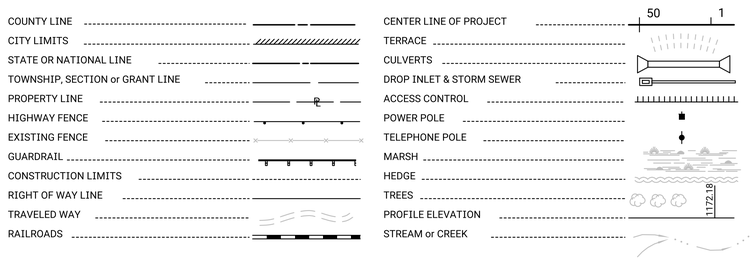
SCALE: 1" = 2/3 Mile

DESIGN DESIGNATION

AADT (2024)	=	900 vpd
AADT (2044)	=	1,100 vpd
DHV	=	11%
D	=	60%
T	=	15.0%
V	=	65 mph
C of A	=	None
Clear Zone	=	26'

NOTE: Traffic to be carried through staged construction.
See Sh. No. 82-83 for Construction Sequencing Details.

CONVENTIONAL SIGNS



GROSS LENGTH OF PROJECT	1,483.80	FT. (Includes Equations)	NET LENGTH OF PROJECT	1,483.80	FT.	0.281 MILES
EXCEPTIONS			NET LENGTH OF BRIDGES	274.00	FT.	0.052 MILES
			NET LENGTH OF ROAD	1,209.80	FT.	0.229 MILES

Approved: Oct 21, 2025
Date

State Transportation Engineer

By:

Chief, Bureau of Road Design

KANSAS DEPARTMENT OF TRANSPORTATION

DATE	BY	
2021	J. Sommers	SURVEY
2025	R. Meyer	CADD TECHNICIAN
2025	D. Newell (Road) / A. Haase (Bridge)	DESIGNERS
2025	R. Bowman (Road) / K. Peterson (Bridge)	SQUAD

Plotted by : Dylan.Newell@ks.gov 15-OCT-2025 13:10
File : ka576101rti-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	2	118

RYAN JAMES BOWMAN LICENSED 29109 KANSAS PROFESSIONAL ENGINEER Oct 15, 2025 Name: Ryan Bowman Co. Name: KDOT - Road Sheet Range: 1-28, 57-69, 82-83, 98-118	KAREN M.S. PETERSON LICENSED 17957 KANSAS PROFESSIONAL ENGINEER Oct 16, 2025 Name: Karen Peterson Co. Name: KDOT - BSGS Sheet Range: 29-56	NICHOLAS ROGERS LICENSED 19805 KANSAS PROFESSIONAL ENGINEER Oct 16, 2025 Name: Nicholas Rogers Co. Name: KDOT - Traffic Engineering Plan Section: Traffic Control	NATHAN T. JEFFRIES LICENSED 25390 KANSAS PROFESSIONAL ENGINEER Oct 16, 2025 Name: Nathan Jeffries Co. Name: KDOT - Traffic Plan Section: Permanent Signing	DONNA JO LEE LICENSED 12434 KANSAS PROFESSIONAL ENGINEER Oct 16, 2025 Name: Donna.Lee Co. Name: KDOT Traffic Engineering Plan Section: Pavement Marking			

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.

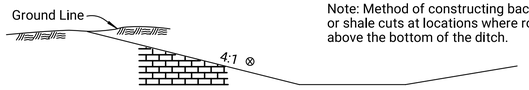
KDOT Graphics Certified 04-18-2022 Sh. No. 2

KDOT Graphics Certified

Plotted by : Dylan.Newell@ks.gov 09-OCT-2025 19:34
File : ka5761rti-02.dgn.bak

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	3	118

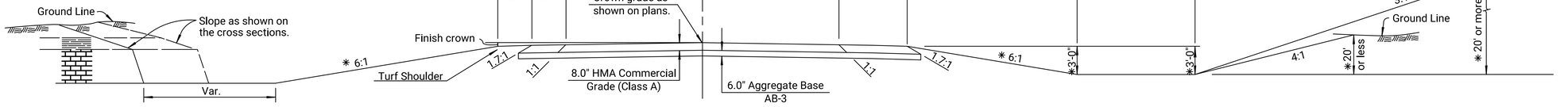
Guide to designer: Use this sheet when subgrading in rock or shale is not required.
See Soils and Geology Reports for additional plan notes.



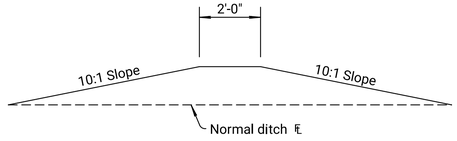
Note: Method of constructing backslope through shallow rock or shale cuts at locations where rock protrudes a short height above the bottom of the ditch.

CUT SECTION

⊗ Slope to be 3: 1 when depth of cut is 20' or more.



CUT SECTION

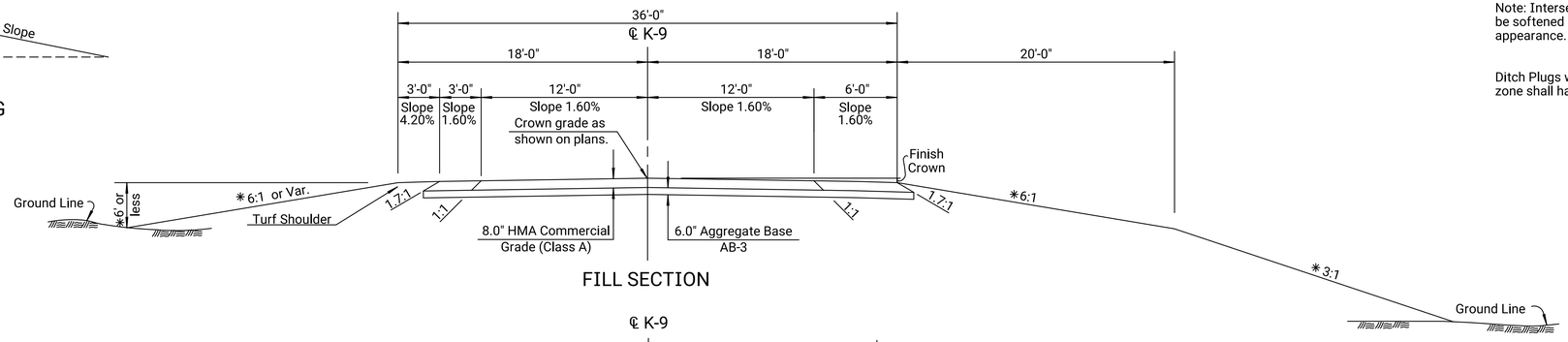


SKETCH OF DITCH PLUG

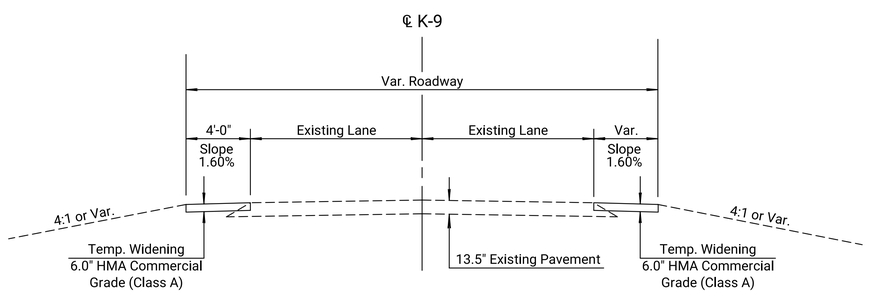
✳ Dimensions and slopes for standard ditches and fills. See plan and cross-sections for variations.

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

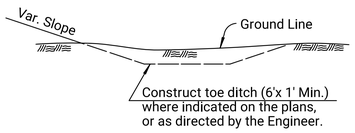
Ditch Plugs within the appropriate clear zone shall have side slopes of 10:1 or flatter.

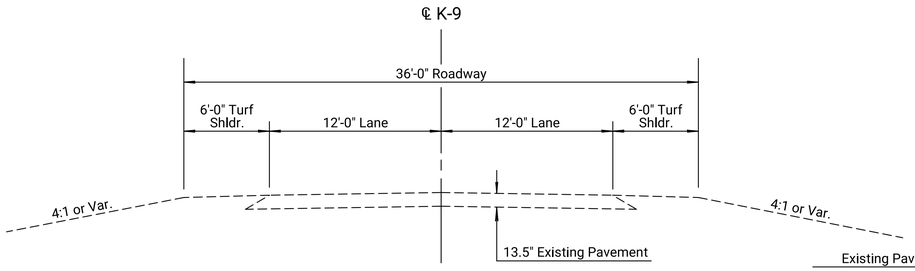


FILL SECTION



PHASE I TEMPORARY WIDEING





EXISTING SECTION
FOR INFORMATION ONLY

Existing Pavement History

2021	SR-12.5A	2.0" x 24'
2000	SR-12.5A	0.5" x 24'
1989	BM-1B	1.0" x 24'
1962	BC-1R	10.0" x 24'

SOIL FOR EMBANKMENT CONSTRUCTION: All soil used in the top 18" of the embankment shall conform to the following requirements: 10 ≤ PI ≤ 35 and 20 ≤ LL ≤ 55. 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

NO.	DATE	REVISIONS	BY	APP'D
21	1-25-13	Removed Slope, Pvmt. Edge	S.W.K.	J.O.B.
20	5-20-09	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.
18	5-10-00	Rev. Ditch Plug Slope 10:1	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION GRADING & SURFACING

~~RD600~~

FHWA APPROVAL	5-21-2013	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. W.L.H.

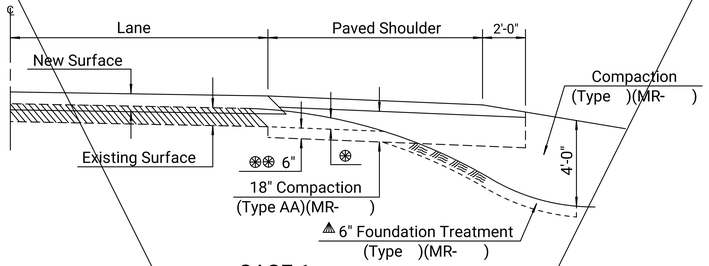
KDOT Graphics Certified 07-31-2025 Sh. No. 3

KDOT Graphics Certified

Plotted by: Joseph.Abboud@ks.gov 14-OCT-2025 13:04
File : ka576101rts-01.dgn

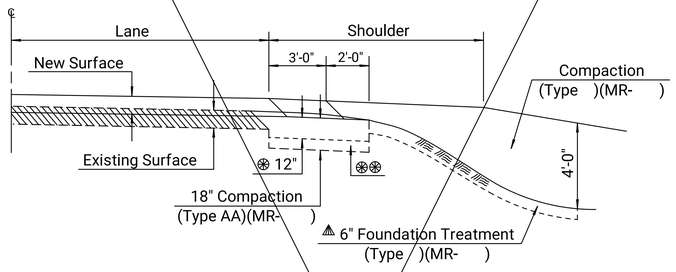
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	4	118

REHABILITATION



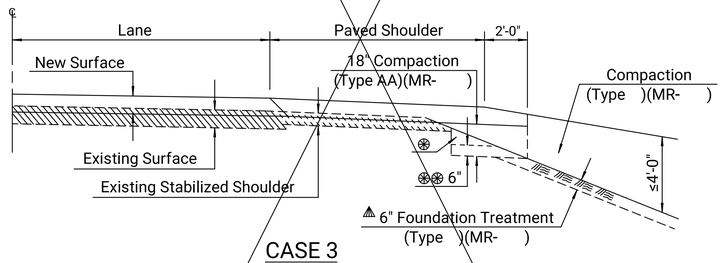
CASE 1

Overlay with Paved Shoulder



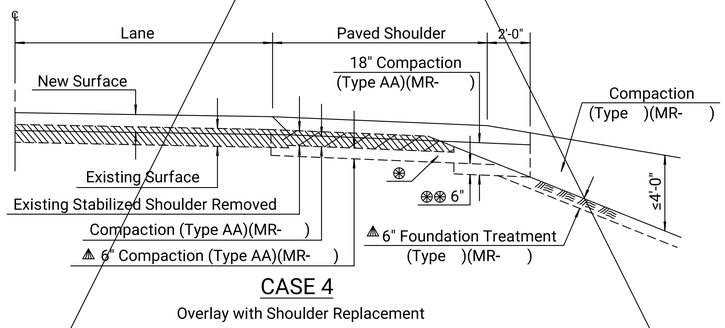
CASE 2

Overlay with Composite Shoulder



CASE 3

Overlay with Existing Paved Shoulder



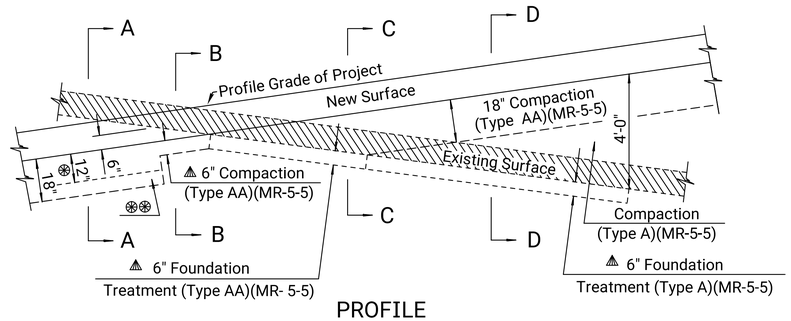
CASE 4

Overlay with Shoulder Replacement

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

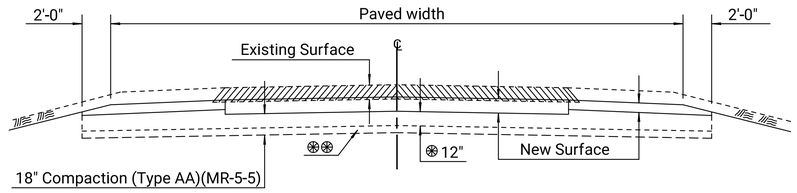
Note: These are 4 general cases. Specific compaction requirements are determined on a project-by-project basis.

RECONSTRUCTION

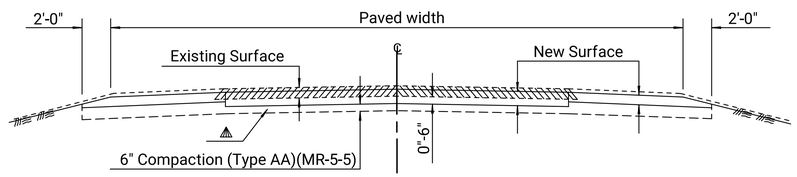


PROFILE

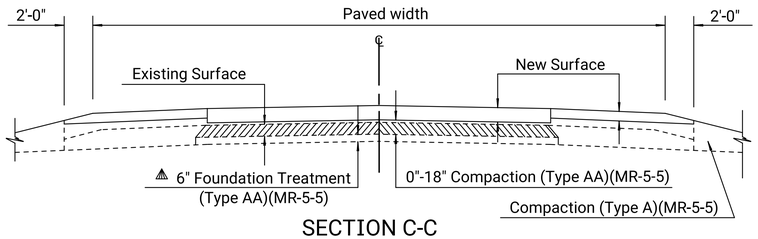
⊛ Excavation thru Cuts not Subgraded
⊛⊛ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



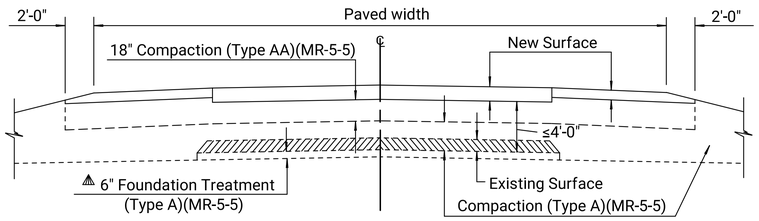
SECTION A-A



SECTION B-B

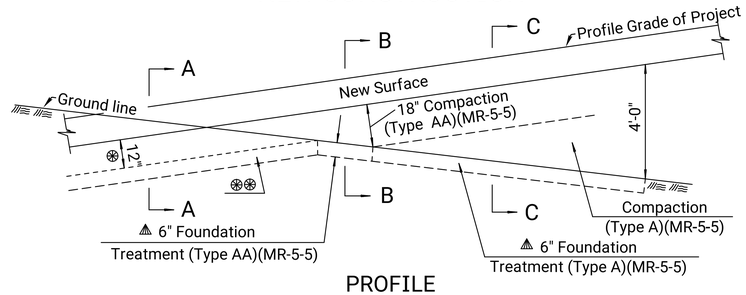


SECTION C-C



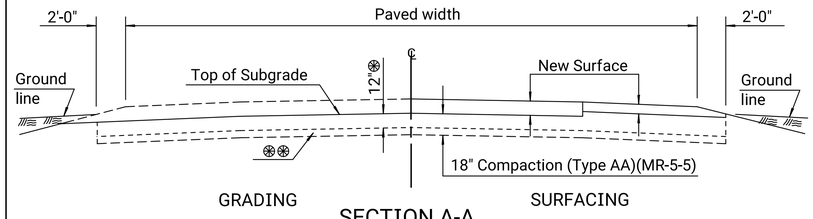
SECTION D-D

NEW CONSTRUCTION

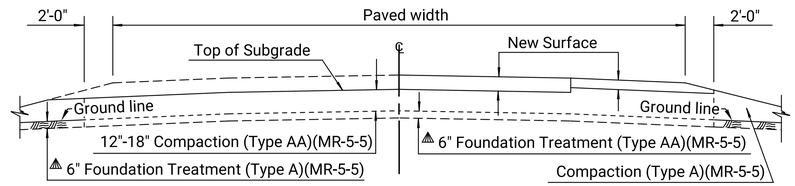


PROFILE

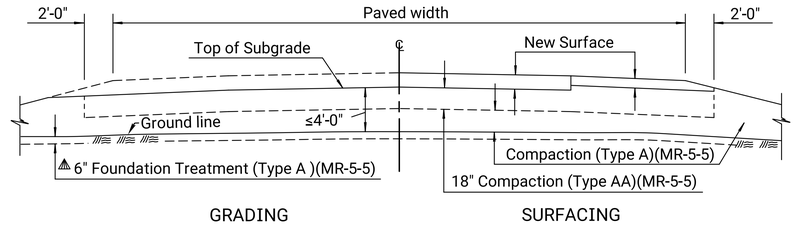
⊛ Excavation thru Cuts not Subgraded
⊛⊛ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



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
5	10-17-1 1	Revised General Note	S.W.K.	J.O.B.
4	1-05-1 0	Added additional subsidiary comp.	S.W.K.	J.O.B.
3	2-16-05	Redrawn, Rev. Recon. Sec. C-C & D-D	S.W.K.	J.O.B.
2	5-29-98	Revised Reconstruction Section B-B	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

FOUNDATION TREATMENT & COMPACTION OF EARTHWORK

~~RD605~~

FHWA APPROVAL 12-5-1 1		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 07-31-2025 Sh. No. 4

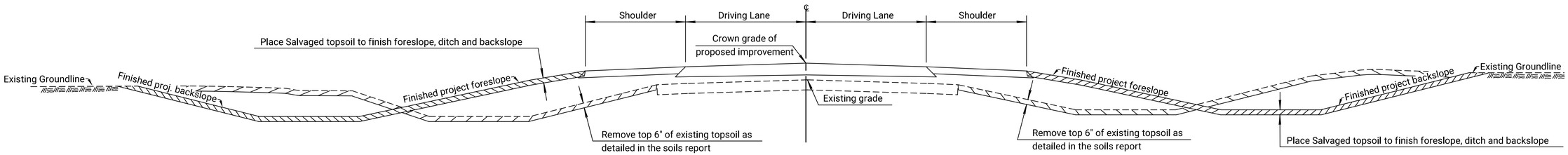
KDOT Graphics Certified

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:04
File : ka576101rss605-01.dgn

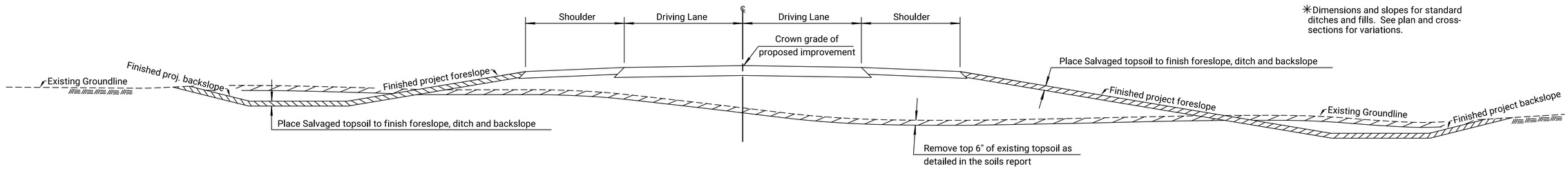
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2026	5	118

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)

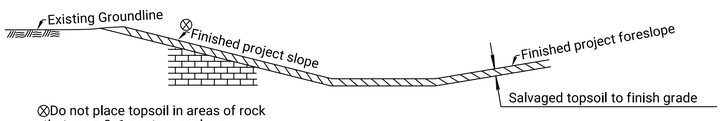


✳Dimensions and slopes for standard ditches and fills. See plan and cross-sections for variations.

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
3				
2				
1	12-16-09	Initial Release	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SALVAGED TOPSOIL

RD599A

FHWA APPROVAL 12-16-09		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 08-05-2025 Sh. No. 5

KDOT Graphics Certified

Plotted by: Joseph.Abboud@ks.gov 14-OCT-2025 13:04
File : ka576101rss559a-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	6	118

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.

ALL BORROW/WASTE LOCATIONS SHALL BE SUBMITTED FOR CLEARANCE FROM THE KANSAS HISTORICAL SOCIETY AND THE KANSAS DEPARTMENT OF WILDLIFE AND PARKS PRIOR TO ANY EXCAVATION OR WASTING OF MATERIAL. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS AND OTHER CLEARANCES THAT ARE REQUIRED.

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.

ALL SOIL USED IN THE TOP 18" OF THE EMBANKMENT SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: $10 \le PI \le 35$ AND $20 \le LL \le 55$. 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.

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.

DRAINAGE STRUCTURES WHICH ARE TO REMAIN, WHETHER EXTENDED OR NOT, SHALL BE CLEANED OUT BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PAID FOR UNDER THE BID ITEM "CLEANING OF EXISTING STRUCTURES".

A GROSS VMF OF 0.77 HAS BEEN ESTIMATED FOR THIS PROJECT, WHICH INCLUDES QUANTITIES FOR INITIAL CONSOLIDATION AND SETTLEMENT.

EXISTING PIPES AND GUARDRAIL THAT IS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PROJECT SITE.

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

UTILITY OWNERS

ATT (Fiber Optic Line)
1(800) 778-9140
Tao:
785-914-7654

Plotted by : Dylan.Newell@ks.gov 15-OCT-2025 13:08
File : ka576101rgn-01.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

KDOT Graphics Certified 10-15-2025 Sh. No. 6

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	7	118

℄ P.O.T. Sta. 568+88.92
N 721,156.476 E 10,303,453.021
1. Found ½" rebar 1.0' deep
2. ⅝" rebar with "JEO CP" cap (HCP 1) 57.7' SSE
3. T-post flush with ground (BM 11) 83.3' WNW
4. Mag. nail top cor. fence post 143.2' WSW

℄ P.C. Sta. 573+75.00
N 721,441.198 E 10,303,846.984
1. = ℄ Sta. 573+75.00
2. Not Set

℄ P.I. Sta. 575+02.16 (Bk.) =
P.I. Sta. 575+02.15 (Ahd.)
△ = 01° 07' 46" (Rt.)
N 721,515.681 E 10,303,950.045
1. = ℄ Sta. 575+02.16
2. Not Set

℄ P.R.C. Sta. 576+29.31
N 721,588.119 E 10,304,054.555
1. 2.51' Rt. of ℄ Sta. 576+29.29
2. Not Set

℄ P.I. Sta. 577+56.13 (Bk.) =
P.I. Sta. 577+56.13 (Ahd.)
△ = 01° 07' 36" (Lt.)
N 721,660.369 E 10,304,158.783
1. 5.0' Rt. of ℄ Sta. 577+56.09
2. Not Set

℄ P.T. Sta. 578+82.95
N 721,734.655 E 10,304,261.571
1. 5.0' Rt. of ℄ Sta. 578+82.91
2. Not Set

℄ P.C. Sta. 584+58.81
N 722,071.970 E 10,304,728.307
1. 5.0' Rt. of ℄ Sta. 584+58.78
2. Not Set

℄ P.I. Sta. 585+60.12 (Bk.) =
P.I. Sta. 585+60.11 (Ahd.)
△ = 00° 54' 00" (Lt.)
N 722,131.595 E 10,304,810.208
1. 5.0' Rt. of ℄ Sta. 585+60.09
2. Not Set

℄ P.T. Sta. 586+61.42
N 722,192.499 E 10,304,891.161
1. 2.70' Rt. of ℄ Sta. 586+61.37
2. Not Set

℄ P.C. Sta. 588+58.80
N 722,311.113 E 10,305,048.928
1. = ℄ Sta. 588+58.72
2. Not Set

℄ P.I. Sta. 594+83.58 (Bk.) =
P.I. Sta. 594+83.66 (Ahd.)
△ = 12° 26' 52" (Lt.)
N 722,686.613 E 10,305,548.374
1. 33.97' Rt. of ℄ Sta. 594+81.12
2. Not Set

Traverse Point #104
N 721,867.611 E 10,304,404.420
1. Found ½" rebar w/ KDOT cap, 0.1' deep
2. 24.09' Lt. of ℄ Sta. 580+76.57

Traverse Point #105
N 721,972.417 E 10,304,617.030
1. Set ⅝" x 24" rebar w/ "JEO CP" cap, 0.5' deep
2. 15.51' Rt. of ℄ Sta. 583+10.32

℄ P.C. Sta. 587+50.16
N 722,246.695 E 10,304,961.536
1. Found ½" rebar 1.0' deep
2. Mag nail in top 36" RCP 62.6' N
3. Mag nail in top 36" RCP 59.5' SE

℄ Curve Data
P.I. Sta. 577+56.13 (Bk.) =
P.I. Sta. 577+56.13 (Ahd.)
△ = 01° 07' 36" (LT)
D = 00° 26' 39"
R = 12,900.00'
T = 126.82'
L = 253.63'
E = 0.63'
Super = N.C.

℄ Curve Data
P.I. Sta. 585+60.12 (Bk.) =
P.I. Sta. 585+60.11 (Ahd.)
△ = 00° 54' 00" (LT)
D = 00° 26' 39"
R = 12,900.00'
T = 101.31'
L = 202.61'
E = 0.40'
Super = N.C.

℄ Curve Data
P.I. Sta. 594+83.58 (Bk.) =
P.I. Sta. 594+83.66 (Ahd.)
△ = 12° 26' 52" (Lt.)
D = 01° 00' 00"
R = 5,729.65'
T = 624.86'
L = 1,244.80'
E = 33.97'

℄ Curve Data
P.I. Sta. 575+02.16 (Bk.) =
P.I. Sta. 575+02.15 (Ahd.) =
△ = 01° 07' 46" (RT)
D = 00° 26' 39"
R = 12,900.00'
T = 127.16'
L = 254.31'
E = 0.63'
Super = N.C.

PROJECT SURVEY CONTROL

HORIZONTAL PROJECT DATUM
NAD83 (2011) KRCS Zone 10 Atchison

VERTICAL DATUM
North American Vertical Datum 88 (NGVD88) Geoid 18

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

UTILITY OWNERS

ATT (Fiber Optic Line)

℄ Sta. 568+50.00 Begin Construction

℄ Sta. 572+73.00 Clean Exist. 24" x 47' CMP To Remain

℄ STA. 573+75.00 BEGIN Proj. 9-58 KA-5761-01 = Sta. 573+75 On Proj. 9-58-K1043(3)

℄ STA. 588+58.80 END Proj. 9-58 KA-5761-01 = Sta. 588+58.72 On Proj. 9-58-K1043(3)

℄ Sta. 593+50.00 End Construction

℄ Sta. 572+83.00 Construct Field Entrance w/
24" x 86' EP 89' Rt.
Rotated 10° Rt.
Remove Exist. 24" x 41' RCP
See Sh. No. 22-28, 57

℄ Sta. 581+85.50 Remove Exist. Br. No. 9-58-240.51 (025)
55'-77'-55' Cont. Reinf. Conc. Haunched Tee Girder Spans (RDGH)
28'-0" Roadway

Sta. 587+65.00 Extend 36" x 120' CRP (RCP)
18' Lt. & 34' Rt.
with End Sections
See Sh. No. 23, 26-28, 57

℄ Sta. 592+55.00 Do Not Disturb Mound Entrance Rt.

℄ Sta. 581+85.53 Construct Br. No. 9-58-240.51 (075)
90'-91'-90' Prestressed Conc. Cont. Spans (PBMC)
44'-0" Roadway
See Sh. No. 29-56

Robidoux Creek

Mark W. Sandmann
NE ¼
Sec. 19, T4S, R9E

LCS Farms, LLC
TOL, NE ¼
Sec. 19, T4S, R9E

Mark W. Sandmann
NE ¼
Sec. 19, T4S, R9E

Daniel L. Howell
SE ¼
Sec. 19, T4S, R9E

Mark W. Sandmann
TOL, NW ¼
Sec. 20, T4S, R9E

LCS Farms, LLC
TOL, NW ¼
Sec. 20, T4S, R9E

LCS Farms, LLC
NW ¼
Sec. 20, T4S, R9E

Black Vermillion River

Black Vermillion River

Unicorn Rd

Exist. Perm. Drainage Esmt.

TELEPHONE CABLE AT&T

Telephone Cable AT&T

Exist. R/W

Const. Limits

Temp. Esmt.

Proposed Channel

+70 Temp. Esmt.= R/W 400' ℄

+95 Perm. Drain. Esmt. 230' ℄

+45 Perm. Drain. Esmt.= R/W 117.22' ℄

+90 Temp. Esmt.= R/W 119.29' ℄

+10 Perm. Drain. Esmt.= Temp. Esmt. 335' ℄

+50 Perm. Drain. Esmt. 225' ℄

+90 Perm. Drain. Esmt.= R/W 145' ℄

+95 R/W= Exist. R/W 65' ℄

+15 R/W 115' ℄

+90 R/W 115' Lt. ℄

+50 R/W 120' Lt. ℄

+80 R/W = Exist. R/W 65' ℄

+90 R/W = Exist. R/W 90' ℄

+80 R/W 120' ℄

+50 R/W 100' ℄

+50 R/W 145' ℄

+49.34 Exist. R/W = 88.15' ℄

+15 R/W = Exist. R/W 76.74' ℄

+46.88 Exist. R/W = 107.99' ℄

+01.71 Exist. R/W = 60.00' ℄

+99.76 Exist. R/W = 128.96' ℄

+73.00 Ent.

+83.00 Ent.

PC=75.00

PRC=29.31

PT=82.95

PC=583

PT=617.42

PC Sta. =58.72 = ℄ POT Sta. +58.80

TP 104

TP 105

℄ K-9

℄ to ℄ 143°45'57"

N 54°08'38" E

℄ Sta. 568+89.11 ¼ ℄

Sec. Line =21.53

¼ ℄ to ℄

90° 25' 57"

89° 49' 09"

¼ ℄ to ℄

126°40'00"

℄ to ℄

126°40'00"

Not to Scale

NE Cor. Sec. 19, T4S, R9E
N 723,918.519 E 10,304,323.427
1. Set ⅝" rebar w/ "J. Sommers PS 1542" ID cap, 1.0' deep
2. 2,155.24' Lt of ℄ Sta. 579+25.22 NE∠= 53°20'00"
3. 2,223.93' Lt of ℄ Sta. 610+11.57 SW∠= 51°08'27"

Center Cor. Sec. 19, T4S, R9E
N 721,168.368 E 10,301,668.973
1. Found ½" rebar w/ "Cohorst #669" ID cap, 0.1' deep
2. 1,784.24' Lt of ℄ Sta. 568+89.11 NE∠= 36°14'03"
3. Nail & bottlecap W face utility pole 14.2' S
4. Mag nail top S end 12" CMP 8.1' SSE

SE Cor. Sec. 19, T4S, R9E
N 718,511.048 E 10,304,258.513
1. Found Corps of Engineers brass cap flush w/ surface
2. Mag nail w/ 2 washers NW face of buried cable marker post 59.0' SW
3. Nail w/ plastic "survey marker" washer SW face utility pole 46.8' E
4. ℄ Valley Road 19.5' S

E ¼ Cor. Sec. 19, T4S, R9E
N 721,151.101 E 10,304,284.273
1. Found ½" rebar w/ "PETR" ID cap, 0.4' deep
2. 831.11' Rt of ℄ Sta. 568+89.11 NE∠= 36°14'03"
3. 612.45' Rt of ℄ Sta. 579+25.22 NE∠= 53°20'00"
4. Lone wood fence post NE side of rebar

B.M. #11 T-post NE cor. K-9 highway & Unicorn Rd.
61.7' Lt. of ℄ Sta. 568+32.88 Elev. = 1,148.50'

B.M. #12 Square cut on conc. @ SW cor. bridge.
19.3' Rt. of ℄ Sta. 580+81.69 Elev. = 1,148.98'

B.M. #13 Square cut on conc. @ NE cor. bridge.
19.2' Lt. of ℄ Sta. 582+89.16 Elev. = 1,148.33'

B.M. #14 T-post S side K-9 highway & W side field ent.
29.6' Rt. of ℄ Sta. 592+76.82 Elev. = 1,143.53'

KANSAS DEPARTMENT OF TRANSPORTATION

PLAN

STA. 563+00 TO STA. 595+00

KDOT Graphics Certified 08-06-2025 Sh. No. 7

DATE	BY	REFERENCES NOTED	REFERENCES CHECKED
12/2022	J. Austin		
1/2025	D. Newell		

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File : ka576101rpl-01.dgn

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	8	118

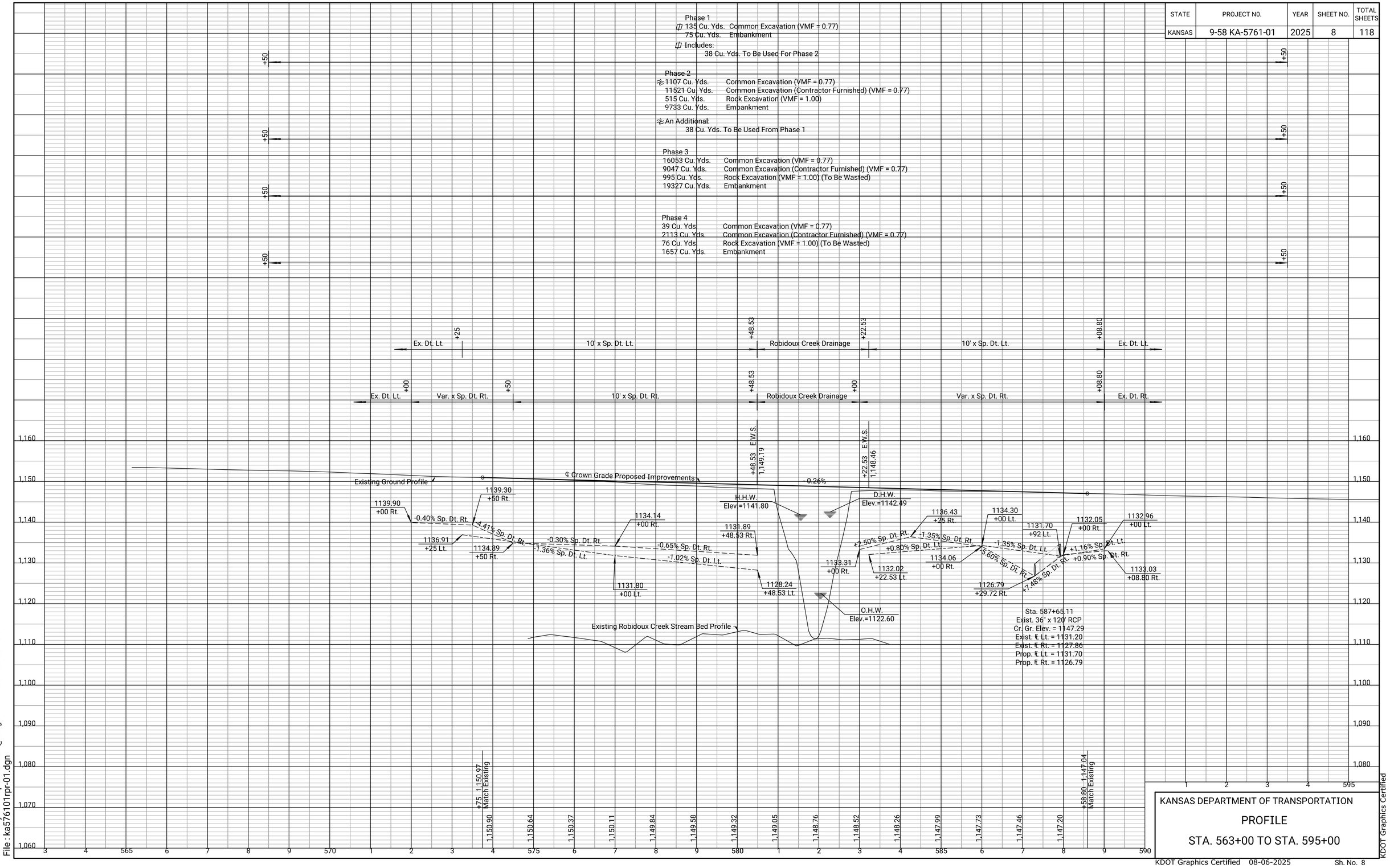
Phase 1
135 Cu. Yds. Common Excavation (VMF = 0.77)
75 Cu. Yds. Embankment
Includes:
38 Cu. Yds. To Be Used For Phase 2

Phase 2
1107 Cu. Yds. Common Excavation (VMF = 0.77)
11521 Cu. Yds. Common Excavation (Contractor Furnished) (VMF = 0.77)
515 Cu. Yds. Rock Excavation (VMF = 1.00)
9733 Cu. Yds. Embankment

An Additional:
38 Cu. Yds. To Be Used From Phase 1

Phase 3
16053 Cu. Yds. Common Excavation (VMF = 0.77)
9047 Cu. Yds. Common Excavation (Contractor Furnished) (VMF = 0.77)
995 Cu. Yds. Rock Excavation (VMF = 1.00) (To Be Wasted)
19327 Cu. Yds. Embankment

Phase 4
39 Cu. Yds. Common Excavation (VMF = 0.77)
2113 Cu. Yds. Common Excavation (Contractor Furnished) (VMF = 0.77)
76 Cu. Yds. Rock Excavation (VMF = 1.00) (To Be Wasted)
1657 Cu. Yds. Embankment



KANSAS DEPARTMENT OF TRANSPORTATION

PROFILE

STA. 563+00 TO STA. 595+00

KDOT Graphics Certified 08-06-2025 Sh. No. 8

KDOT Graphics Certified

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File : ka576101rpr-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	9	118

P.O.T. Sta. 2+27.56
N 722,020.504 E 10,304,170.620
1. 279.95' Lt. of ℄ Sta. 579+76.63
2. Not Set

P.C. Sta. 3+45.39
N 722,028.510 E 10,304,288.174
1. 217.58' Lt. of ℄ Sta. 580+76.60
2. Not Set

P.I. Sta. 4+59.35
N 722,036.990 E 10,304,412.707
1. 156.51' Lt. of ℄ Sta. 581+82.53
2. Not Set

P.T. Sta. 5+73.31
N 721,687.122 E 10,304,485.822
1. 26.69' Lt. of ℄ Sta. 581+82.50
2. Not Set

P.O.T. Sta. 8+80.16
N 721,687.122 E 10,304,665.561
1. 280.16' Rt. of ℄ Sta. 581+82.50
2. Not Set

LCS Farms, LLC
TOL, NE ¼
Sec. 19, T4S, R9E

LCS Farms, LLC
TOL, NW ¼
Sec. 20, T4S, R9E

Mark W. Sandmann
NE ¼
Sec. 19, T4S, R9E

Mark W. Sandmann
TOL, NW ¼
Sec. 20, T4S, R9E

Temp. Esmt.
Const. Limits
Perm. Drainage Esmt.
R/W
Exist. R/W
TELEPHONE CABLE AT&T
℄ K-9
℄ Proposed Channel
PT+73.31
POT+80.16
PCT+45.39
POT+27.56
Black Vermillion River
Robidoux Creek

℄ K-9
Sta. 581+82.53 =
℄ Proposed Channel
Sta. 6+05

Sta. 2+50 Begin
Channel Change Construction

Sta. 6+57.56 End
Channel Change Construction

✳ See Sh. No. 31 for Plan Details
Relating to the Channel Change

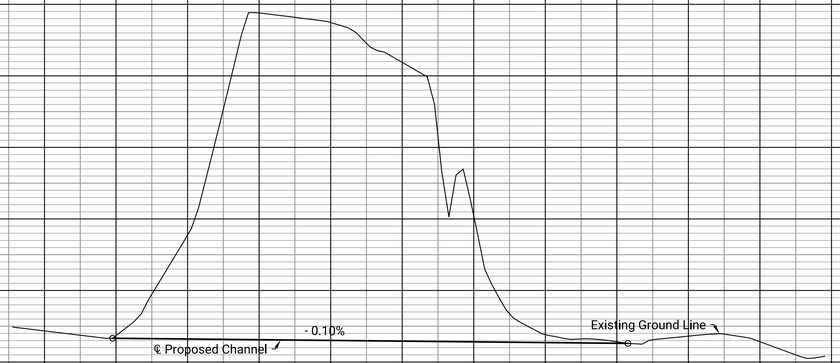
UTILITY OWNERS

ATT (Fiber Optic Line)

Channel Change Curve Data
P.I. Sta. 4+70.21 (Bk.) =
Sta. 4+48.49 (Ahd.)
△ = 25° 27' 53" (RT)
R = 225.00'
T = 124.82'
L = 227.92'
E = 32.30'

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

REFERENCES NOTED	BY	DATE
REFERENCES CHECKED	J. Austin	1/2022
	D. Newell	1/2025



KANSAS DEPARTMENT OF TRANSPORTATION
ROBIDOUX CREEK
CHANNEL CHANGE
PLAN AND PROFILE

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KDOT Graphics Certified

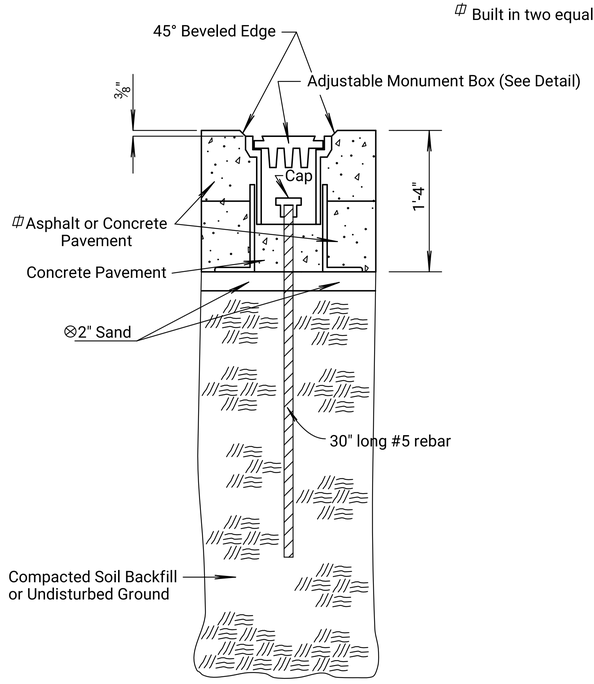
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	10	118

EXHIBIT

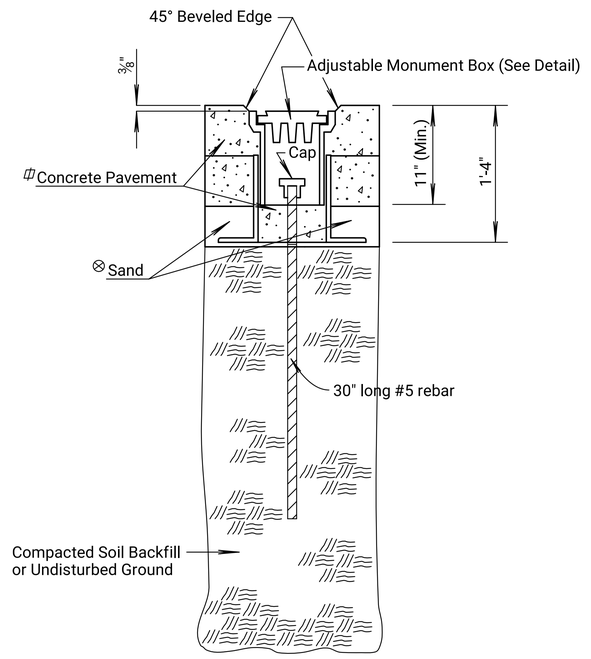
2" DIA. PRE-STAMPED ALUMINUM CAPS

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)

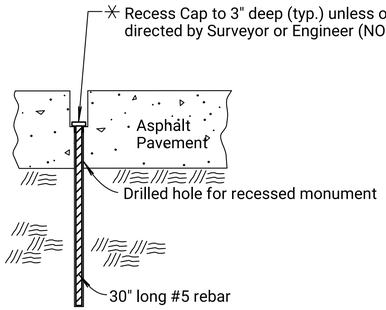


TYPE A-2

(Standard Land Corner Monument Box)

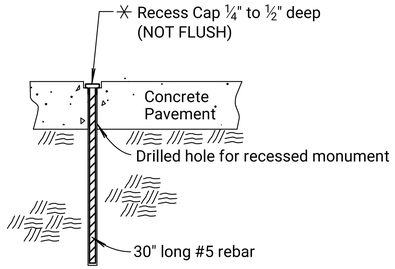
ADJUSTABLE MONUMENT BOX DETAIL

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



Type B

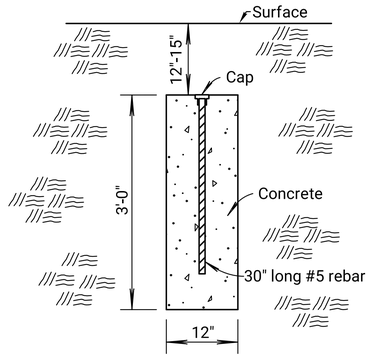
(Recessed Bar)



Type C

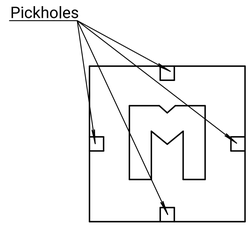
(Drilled Hole)

⚹ No Surface Monuments Allowed in Pavement



Type D

(Shoulder/Ditch Subsurface Monument)



MONUMENT BOX LID (PLAN VIEW)

Not to Scale

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.

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

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	11	118

EXHIBIT

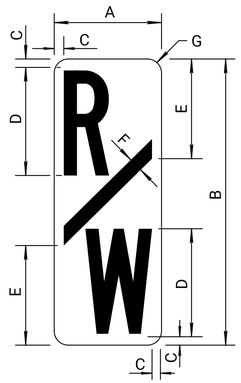
2" DIA. PRE-STAMPED ALUMINUM CAPS

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

NOTES:

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

KI-107

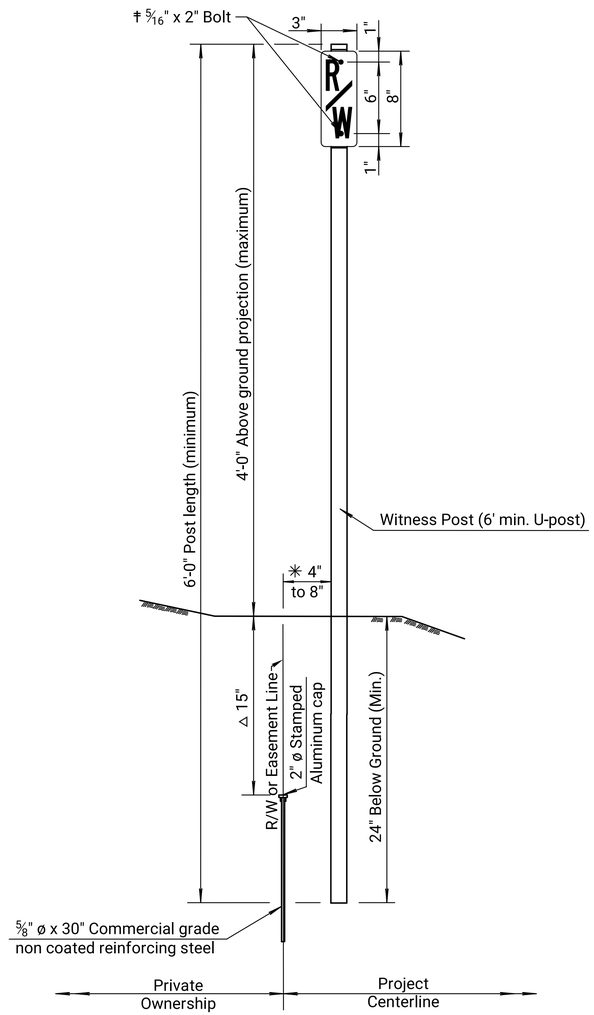


COLORS:

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

A	B	C	D	E	F	G
3"	8"	1/4"	3"	2 3/4"	3/8"	3/8"

R/W SIGN DETAIL



PLAN VIEW

NOTES

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

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

△ Or as directed by the Engineer.

GENERAL NOTE

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

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

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

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

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

Mount R/W survey monument signs facing the road.

✡ Additional R/W Survey Monuments set by Contractor

Station	Offset (Lt./Rt.)	Northing	Easting

✡ Additional R/W Survey Monuments set by Contractor

Station	Offset (Lt./Rt.)	Northing	Easting

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

KANSAS DEPARTMENT OF TRANSPORTATION

R/W SURVEY MONUMENT INSTALLATION DETAIL SHEET

RD995

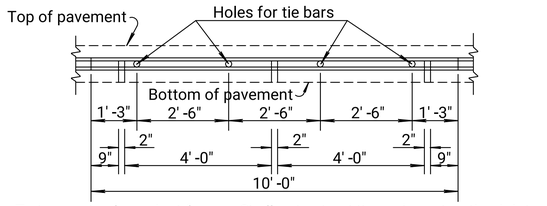
FHWA APPROVAL	03-16-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 07-27-2022 Sh. No. 11

KDOT Graphics Certified

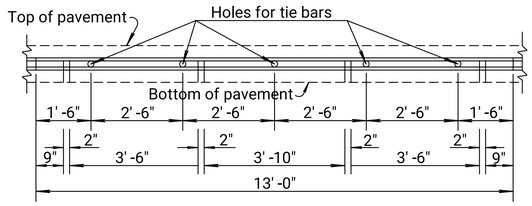
Plotted by: Joseph.Abboud@ks.gov 14-OCT-2025 13:22
File : KA5761011rd995.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	12	118



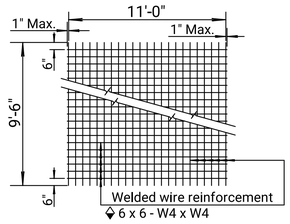
To be used only against forms. Shall not extend through contraction joints.

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



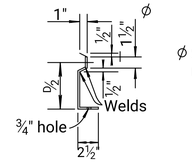
To be used only against forms. Shall not extend through contraction joints.

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

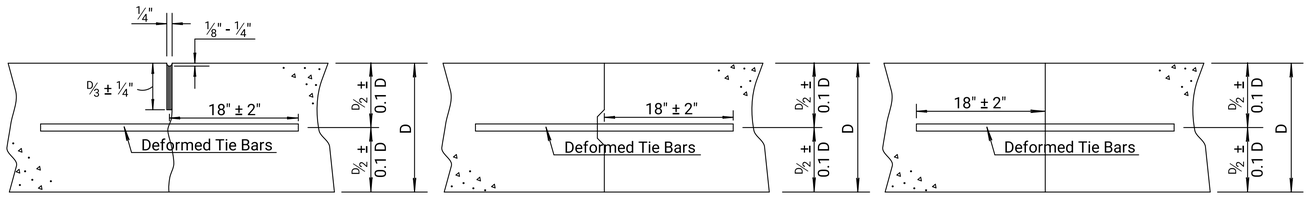
ϕ Snap-in leg or other approved designs may be used in lieu of welded leg.



DETAIL OF LAP FOR WELDED WIRE REINFORCEMENT

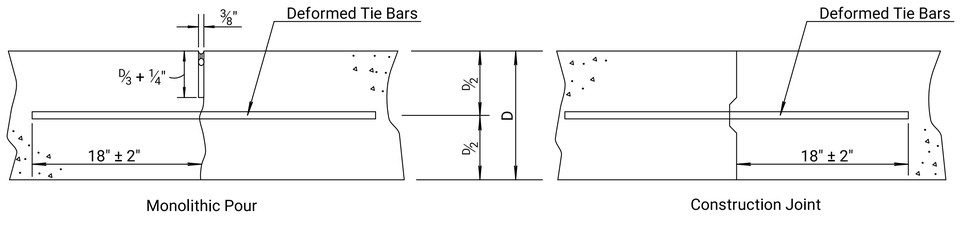
The lap shall extend beyond the first transverse or bag wire of each sheet.

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.

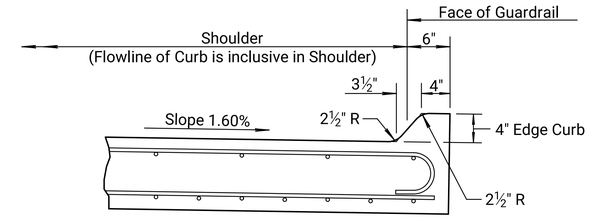
At each planned transverse joint location, a 4 to 6 inch wide strip of the pavement surface shall be protected from the texturing operation to provide a transverse textureless surface centered over the joint sawcut.

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

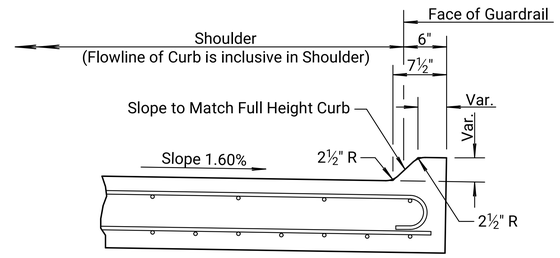
The 4 inch edge curb shall be constructed integral with the approach slab shoulder.

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.

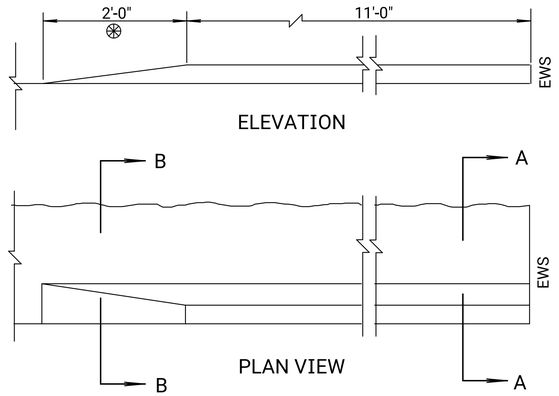


SECTION A-A



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.

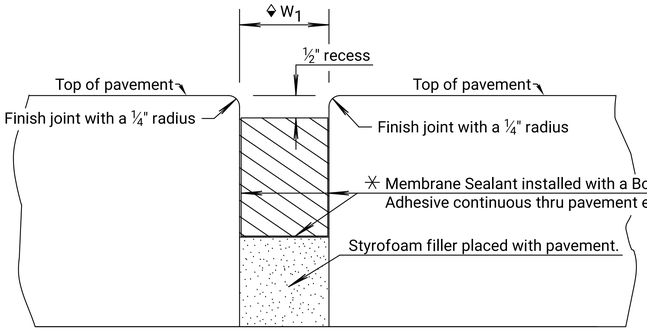
KDOT Graphics Certified 07-18-2022 Sh. No. 12

KDOT Graphics Certified

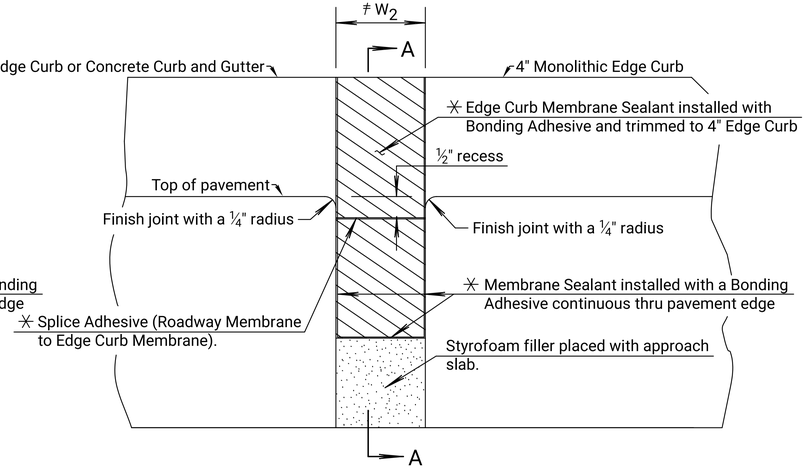
Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:22
File : KA576101rd711.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	13	118

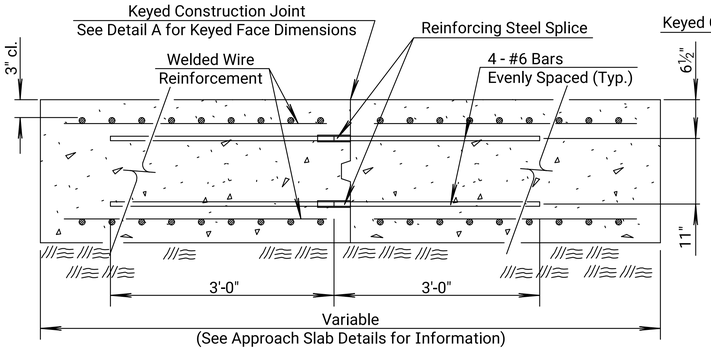
Note to Designer: For Membrane Sealant Expansion Joint on Non-skewed Bridges the maximum length of expansion is: 380' for Steel Bridges, 410' for Concrete Bridges.

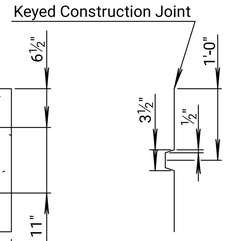


ELEVATION PRESSURE RELIEF JT.

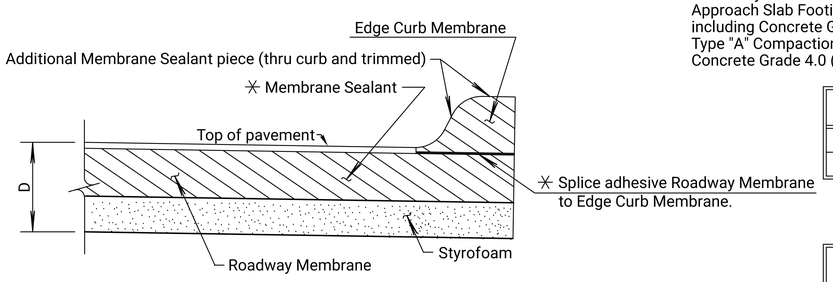


ELEVATION EXPANSION JT.





DETAIL A



SECTION A-A

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

GENERAL NOTES

EXPANSION/PRESSURE RELIEF JOINTS

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

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

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

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

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

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

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

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

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

Use splice materials and methods recommended by the Manufacturer.

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

BRIDGE APPROACH SLAB FOOTING

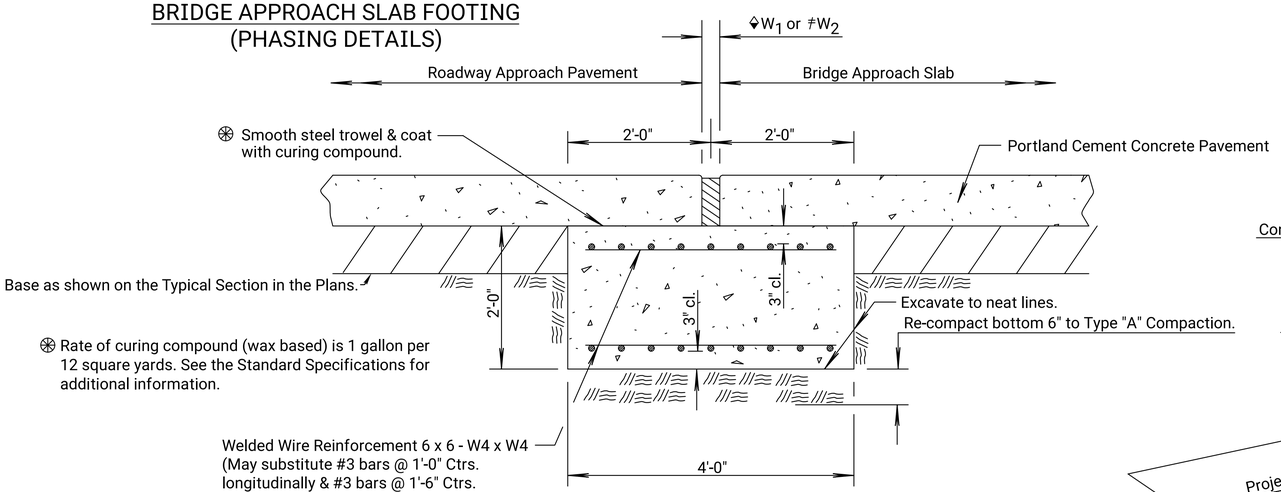
Pay for the Bridge Approach Slab Footing at the unit price bid per cubic yard for "Bridge Approach Slab Footing". This price will be full compensation for furnishing all materials and labor including Concrete Grade 4.0 (AE) Pavement, Reinforcing Steel (Gr. 60) (Epoxy Coated), excavation, Type "A" Compaction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

⧫ PRESSURE RELIEF JOINT WIDTH DETAILS (W_1)							
℉ Temperature (F°)	40°	50°	60°	70°	80°	90°	100°
Formed Concrete Opening Size	4.0"	3¾"	3½"	3¼"	3.0"	2¾"	2½"

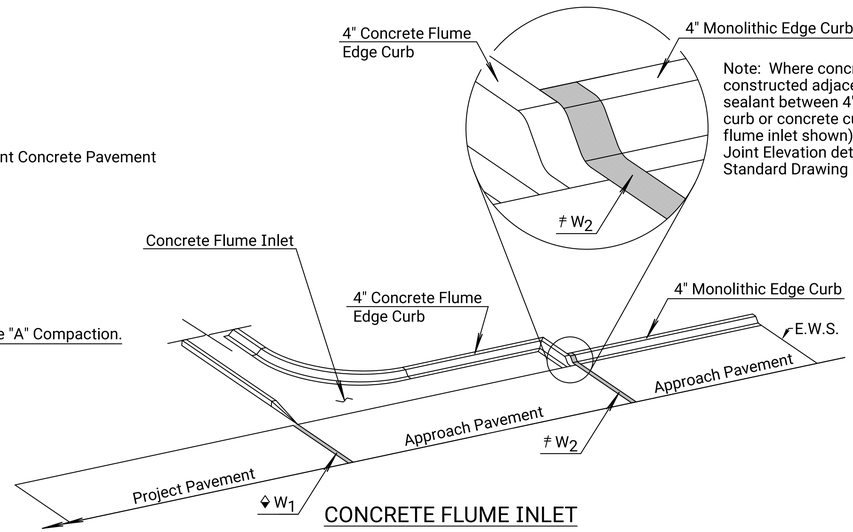
℉ Average Ambient Temperature over previous 24 hours.

≠ EXPANSION JOINT WIDTH DETAILS (W_2)
See bridge construction layout sheet for details.

BRIDGE APPROACH SLAB FOOTING (PHASING DETAILS)



BRIDGE APPROACH SLAB FOOTING



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

CONCRETE FLUME INLET

(Membrane Sealant Placed Through Edge Curb Detail)

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

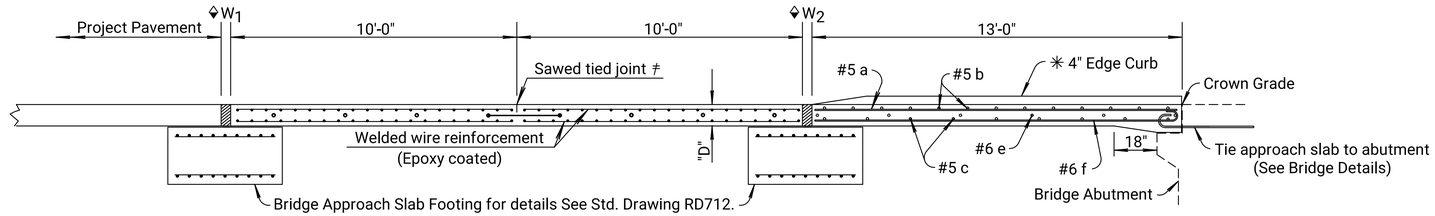
FHWA APPROVAL		02-01-16	APP'D.	Scott W. King
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

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

KDOT Graphics Certified

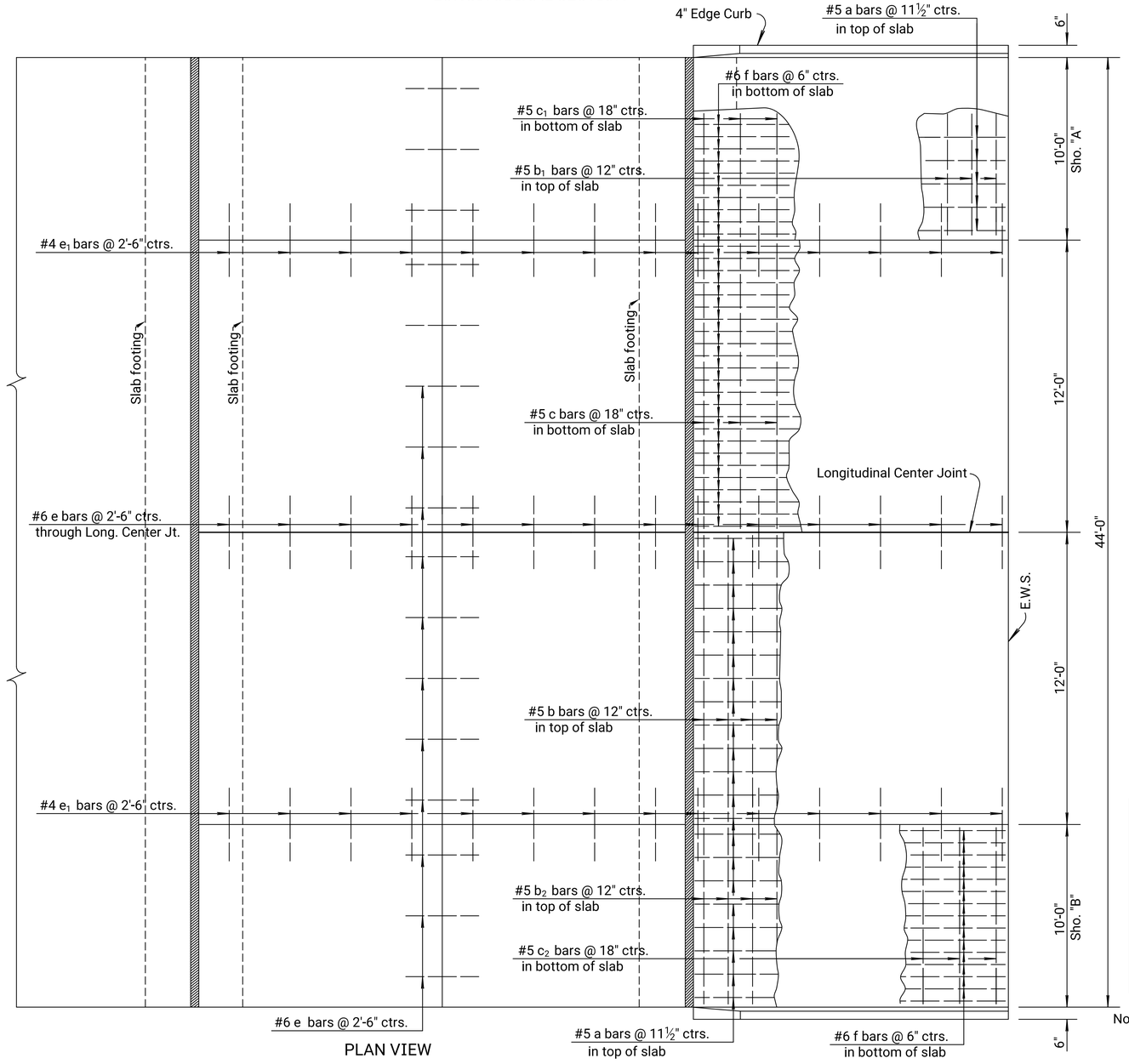
Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:22
File : KA576101rd712.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	14	118



"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.

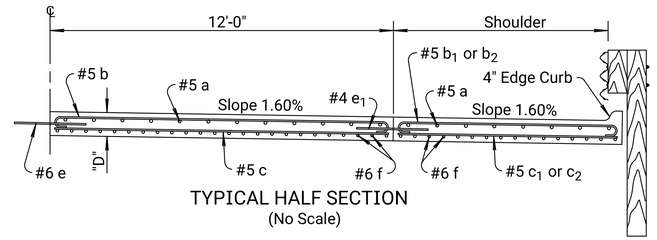
All reinforcing steel shall be epoxy coated.

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

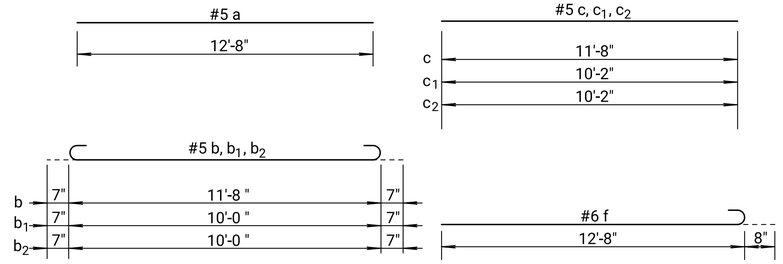
Clearance from the face of concrete for all reinforcing steel shall be 2 inches.

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.	48	26	13	13	18	9	9	32	28	90	
Size	#5	#5	#5	#5	#5	#5	#5	#6	#4	#6	
Length	12'-8"	12'-10"	11'-4"	11'-4"	11'-8"	10'-2"	10'-2"	3'-0"	3'-0"	13'-4"	

Reinforcing Steel (Grade 60) (Epoxy Coated)	3702	lbs.
Concrete Pavement (10" Unif.)(AE)	162.78	Sq. Yds.
Expansion Jt. Membrane Sealant	44.00	Lin. Ft.
Pressure Relief Jt. Membrane Sealant	44.00	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.

KDOT Graphics Certified 08-06-2025 Sh. No. 14

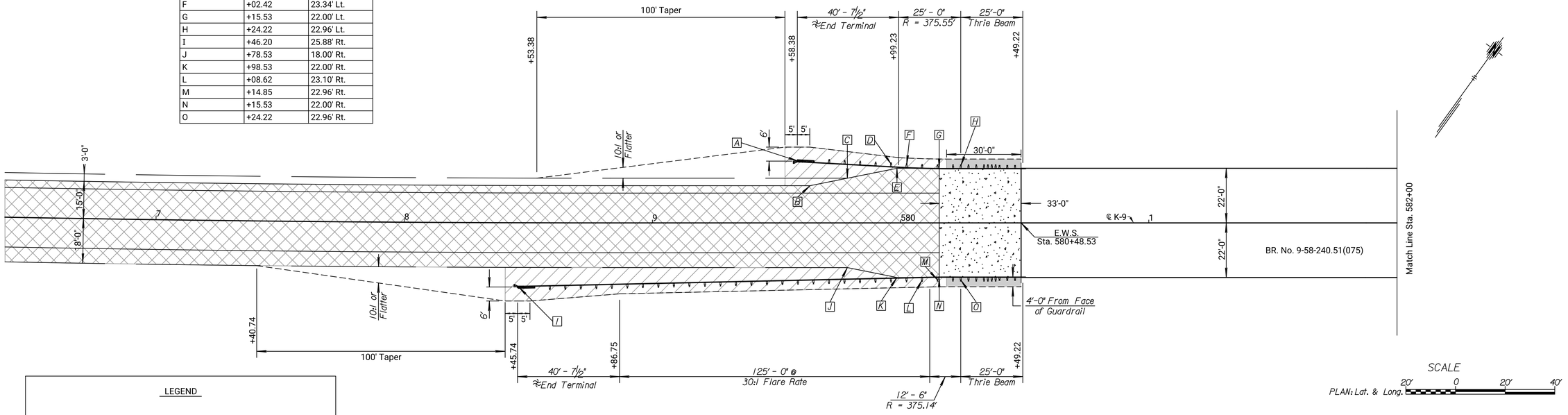
KDOT Graphics Certified

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 : Joseph.Abboud@ks.gov 14-OCT-2025 13:22
File : KA576101rd713.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	15	118

Point	Sta.	Offset
A	+58.67	24.89' Lt.
B	+63.53	15.00' Lt.
C	+78.53	18.00' Lt.
D	+96.18	23.68' Lt.
E	+98.53	22.00' Lt.
F	+02.42	23.34' Lt.
G	+15.53	22.00' Lt.
H	+24.22	22.96' Lt.
I	+46.20	25.88' Rt.
J	+78.53	18.00' Rt.
K	+98.53	22.00' Rt.
L	+08.62	23.10' Rt.
M	+14.85	22.96' Rt.
N	+15.53	22.00' Rt.
O	+24.22	22.96' Rt.



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

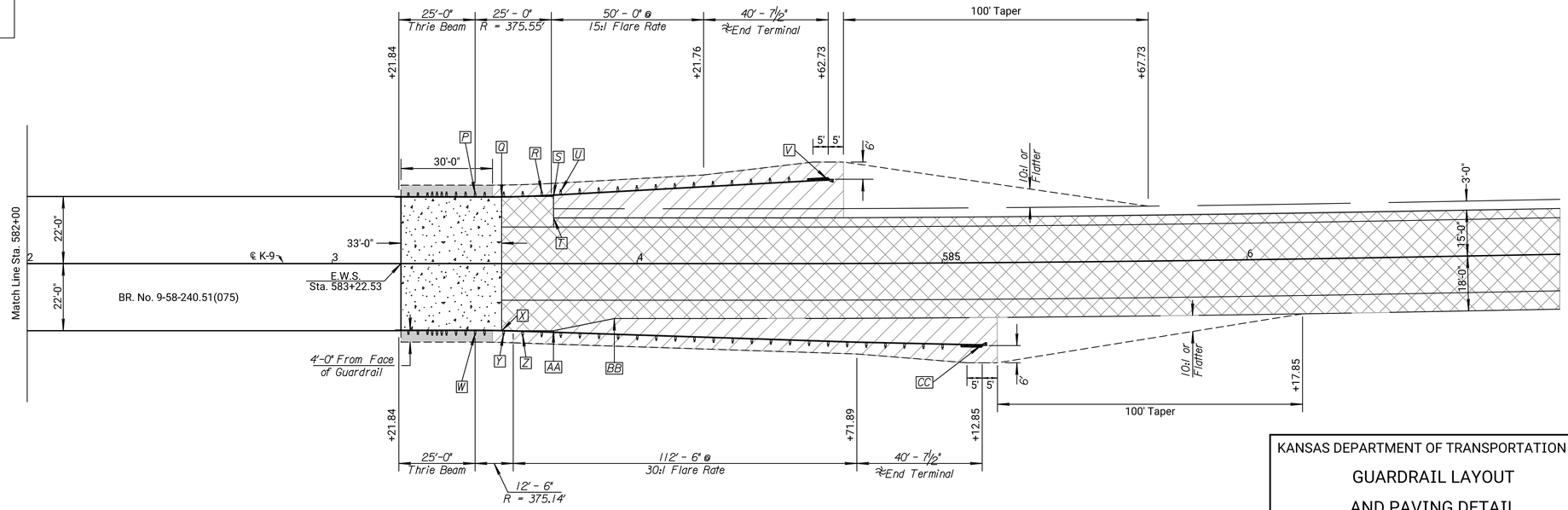
LEGEND

- Concrete Pavement (10" Uniform) (AE) (Br. App.)
- 4" HMA - Comm. Grade (Class A)
- Aggregate Shoulder (AS-1) (4")
- 8" HMA - Comm. Grade (Class A)

End Terminals will be MGS-SRT or MGS-FLEAT

Note: All Stations and offsets are to face of posts.
Note: All Stationing shown is perpendicular to ℄ K-9

Point	Sta.	Offset
P	+46.84	22.96' Lt.
Q	+55.53	22.00' Lt.
R	+68.68	23.34' Lt.
S	+72.53	22.00' Lt.
T	+72.53	15.00' Lt.
U	+74.89	23.68' Lt.
V	+62.42	27.65' Lt.
W	+46.84	22.96' Rt.
X	+55.53	22.00' Rt.
Y	+56.18	23.06' Rt.
Z	+62.42	23.26' Rt.
AA	+72.53	22.00' Rt.
BB	+92.53	18.00' Rt.
CC	+12.42	27.18' Rt.



KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL LAYOUT

AND PAVING DETAIL

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 15:48
File : ka576101rgr-01.dgn

CADconform Certify This File

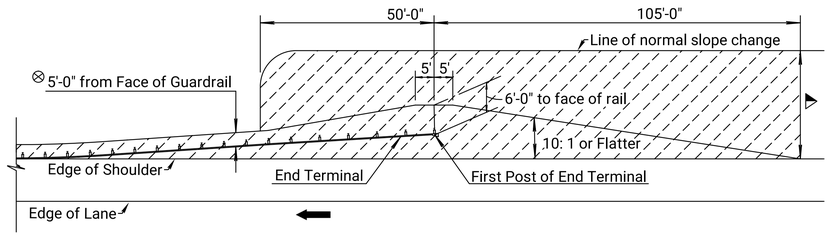
CADconform Certify This File

Sh. No. 15

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.



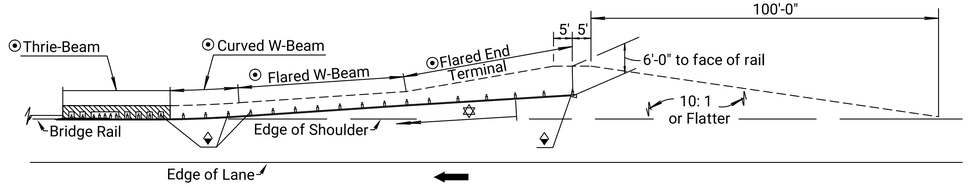
Keep Area Free of Stockpiled Material, Equipment, or Other Obstacles, Such as Temporary Signs, Regardless of Crash Worthiness. This Clear Area Extends 105 Feet in Advance of and 50 Feet behind the First Post of the Guardrail End Terminal and Then, in Order to Maintain Full Post Spacing, Continues 5 Feet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

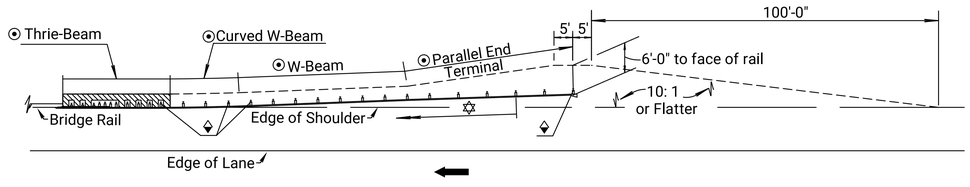
FLARED GUARDRAIL DETAIL

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	9-58 KA-5761-01	2025	16	118

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.

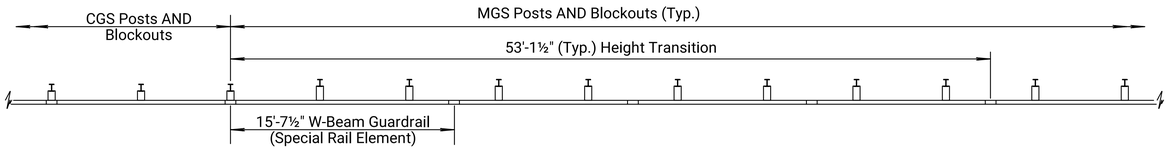
Lap w-beam and thrie-beam guardrail splices, in the direction of permanent traffic, even where temporary traffic may be carried in the opposite direction of the final traffic configuration. Lap end terminal splices per the Manufacturer's Installation Manual in the direction of permanent traffic, even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

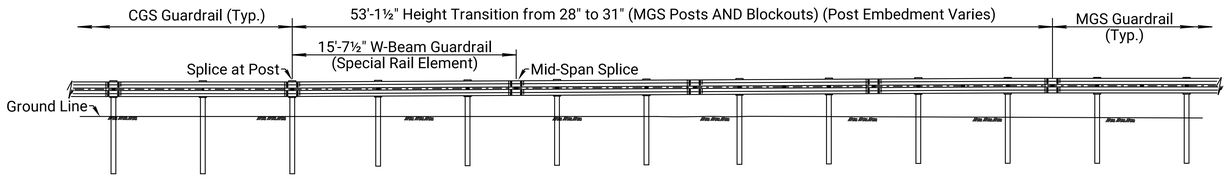
Where pavement with a thickness less than or equal to 8" is encountered during installation, use the details shown on KDOT's 'Guardrail Post Details' Standard Drawings to provide openings in the pavement for the guardrail posts. Where pavement with a thickness greater than 8" or geologic rock is encountered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

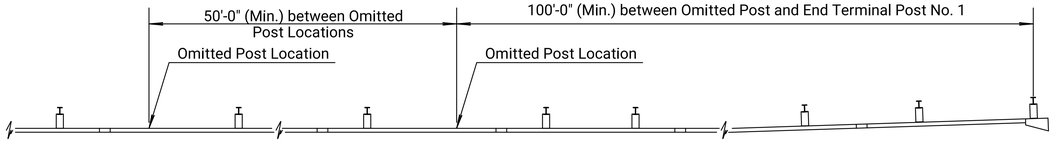
All work and materials required for guardrail end terminal installations are paid for under the bid item for the selected guardrail end terminal. See the table on this sheet for the appropriate end terminal bid item information.



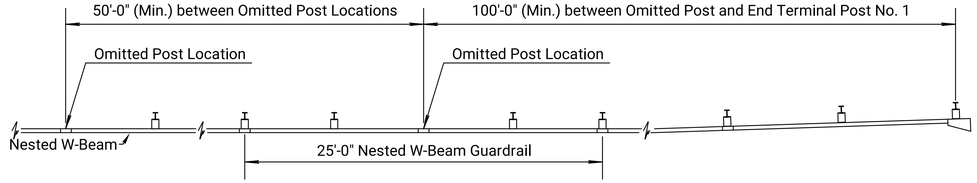
CGS TO MGS TRANSITION DETAILS (PLAN)



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

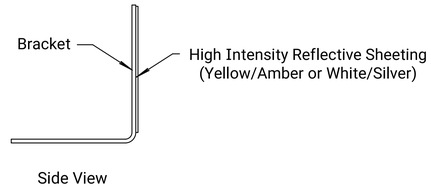
FHWA APPROVAL		09-25-18	APP'D.	Scott W. King
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

KDOT Graphics Certified 09-05-2024 Sh. No. 16

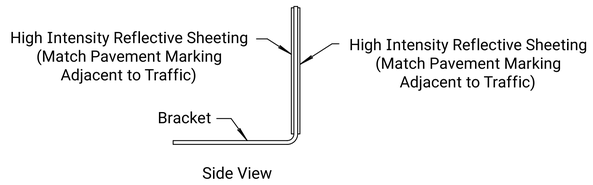
KDOT Graphics Certified

Plotted by : Joseph.Aboud@ks.gov 14-OCT-2025 13:16
File : KA576101rd606.dgn

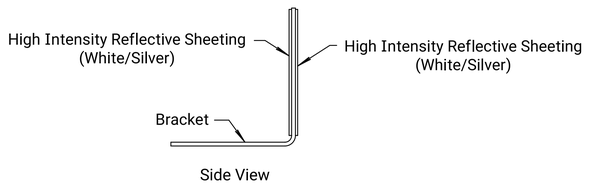
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	17	118



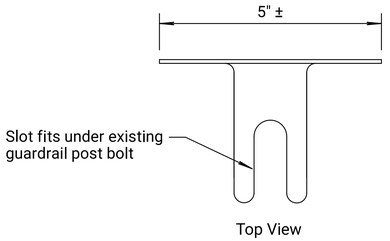
Flexible Marker
One-Way Traffic

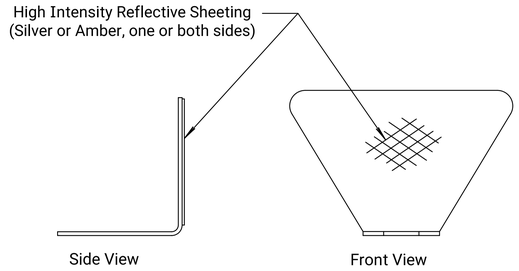


Flexible Marker
Median Locations



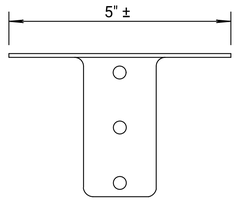
Flexible Marker
Two-Way Traffic



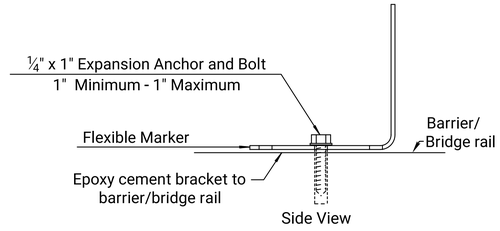


Flexible Guardrail Marker

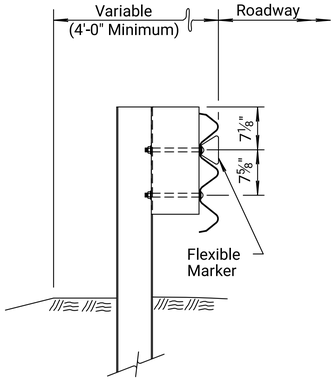
(High Impact Polycarbonate approx. .085" thick, 5¼" x 3")



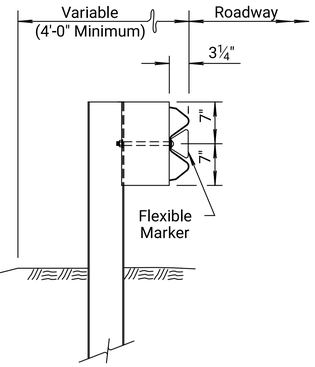
Barrier/Bridge Rail



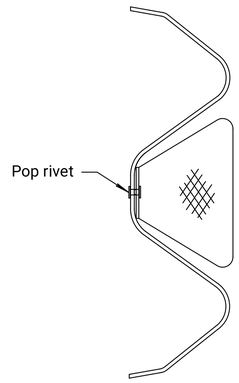
Method of Attaching Flexible
Marker to Barrier/Bridge Rail



THRIE-BEAM GUARDRAIL

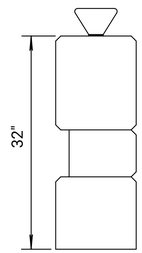


W-BEAM GUARDRAIL

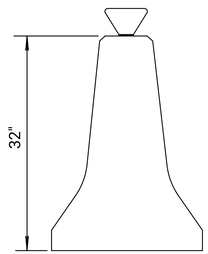


Typical Mounting on W-Beam

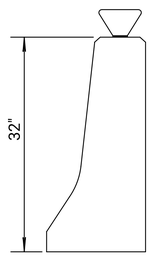
Pop rivet attachment to Guardrail when necessary.



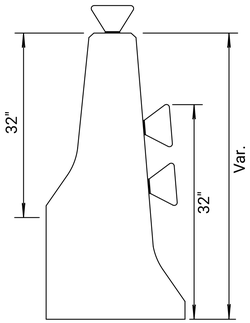
CORRAL RAIL



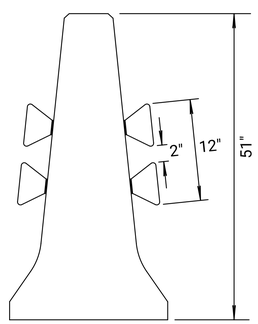
TYPE I CSB



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. 17

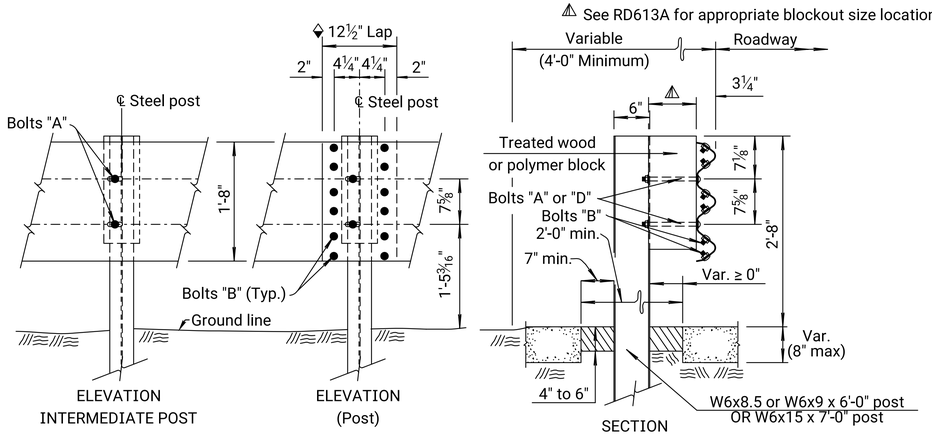
KDOT Graphics Certified

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:16
File : KA576101rd610.dgn

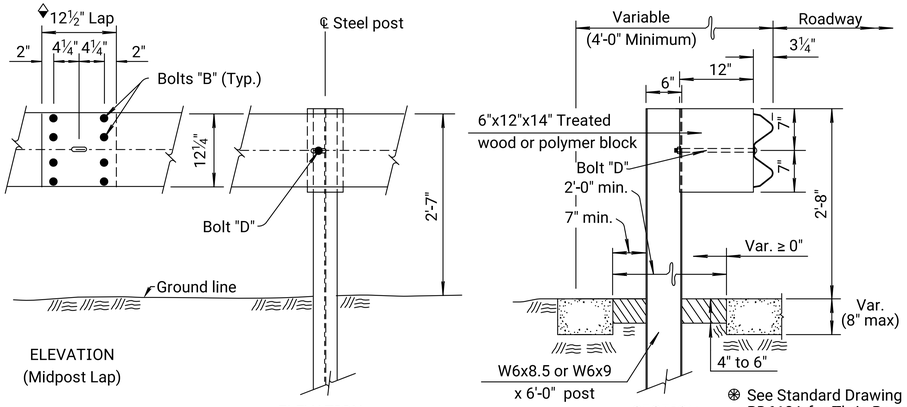
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	18	118

♦ 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

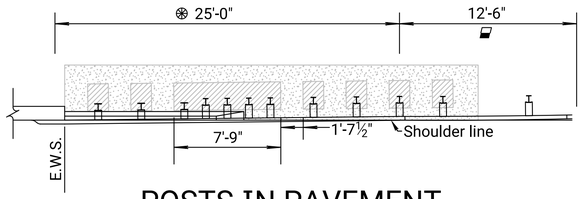


⊛ See Standard Drawing RD613A for Thrie-Beam Transition Section Blockout hole pattern.

✡ Non-Metallic (Polymer) or Treated Wood Block

See Guardrail Layout Sheets for Details.

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



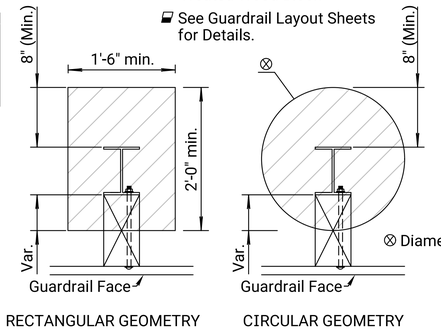
POSTS IN PAVEMENT

(Not to Scale)

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

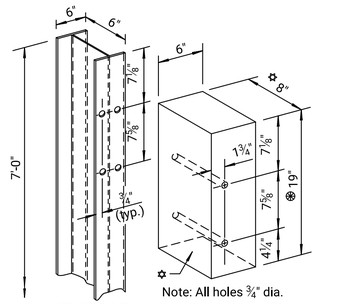
▢ Pavement (Concrete or Asphalt)

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.

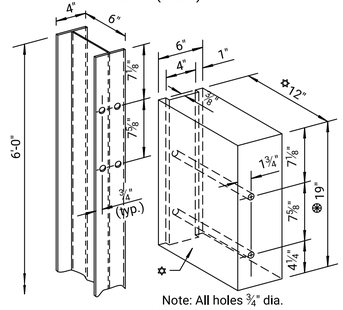


⊗ Diameter may vary from 1'-6" (min.) to 2'-0".

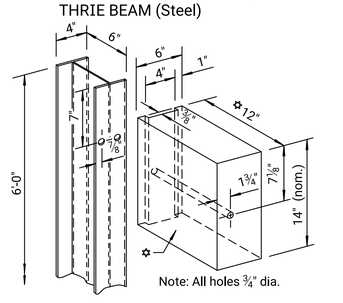
PLAN
(ALTERNATE GEOMETRIES)



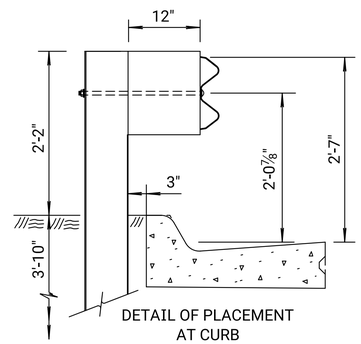
THRIE BEAM (Steel)



THRIE BEAM (Steel)

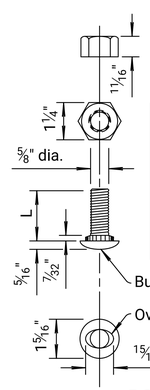


"W" BEAM (Steel)



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.



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 (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.

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. 18

KDOT Graphics Certified

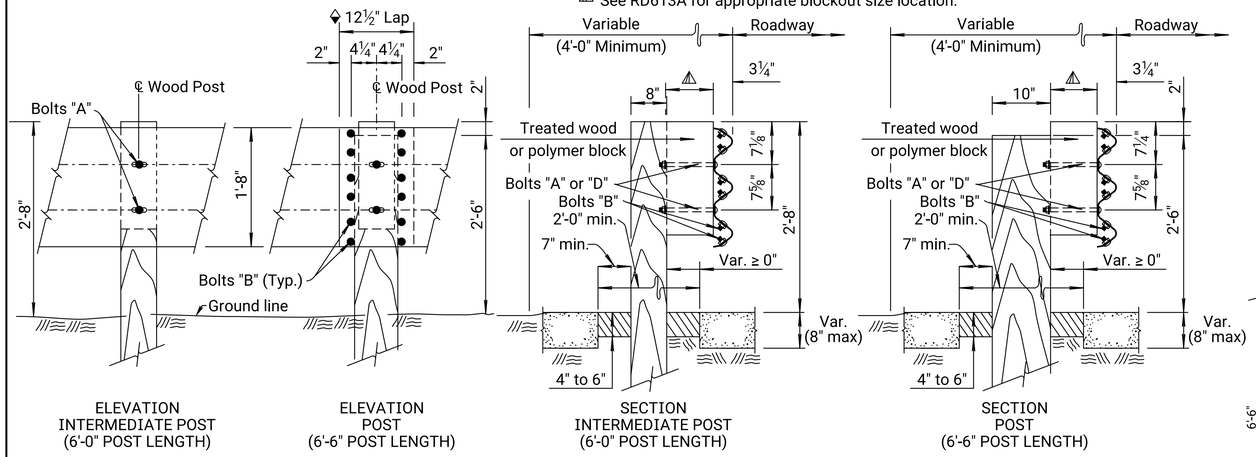
Notes to Designer: For posts installed in pavement thicker than 8" or posts installed in rock formations refer to AASHTO's Roadside Design Guide for details then revise this drawing and all supporting drawings appropriately.

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:16
File : KA576101rd611a.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
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◆ 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.



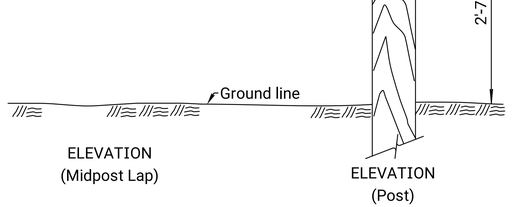
ELEVATION
INTERMEDIATE POST
(6'-0" POST LENGTH)

ELEVATION
POST
(6'-6" POST LENGTH)

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

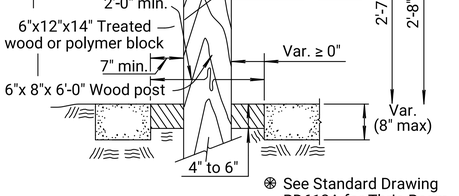
SECTION
POST
(6'-6" POST LENGTH)

THRIE BEAM POST DETAILS/POSTS IN PAVEMENT



ELEVATION
(Midpost Lap)

ELEVATION
(Post)

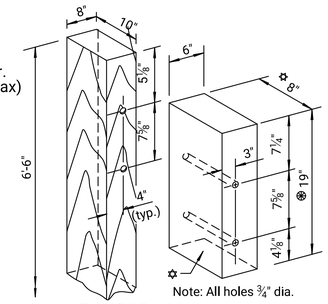


SECTION

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

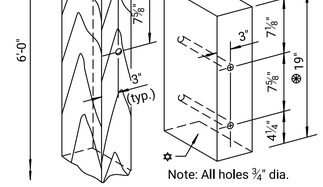
✡ Non-Metallic (Polymer) or Treated Wood Block

◪ See Guardrail Layout Sheets for Details.



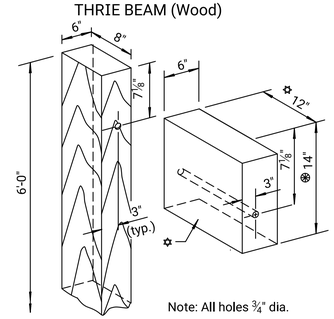
Note: All holes ¾" dia.

THRIE BEAM (Wood)



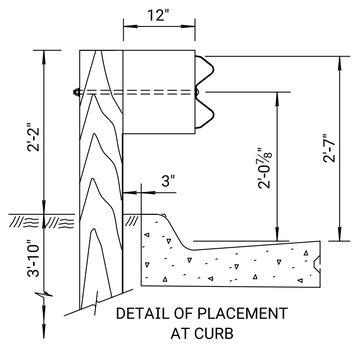
Note: All holes ¾" dia.

THRIE BEAM (Wood)



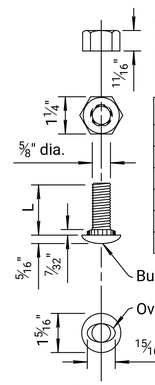
Note: All holes ¾" dia.

"W" BEAM (Wood)



DETAIL OF PLACEMENT
AT CURB

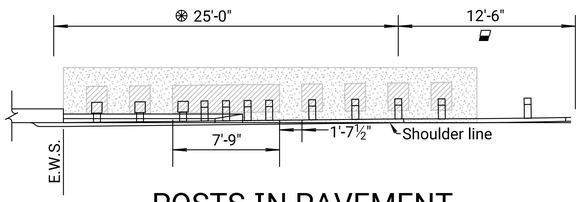
Note: Measure height of rail from the pavement surface at the curb/pavement joint as shown. A special design is needed when guardrail is not located as detailed. A Type II (laydown) curb & gutter is preferred when guardrail is adjacent to curb.



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



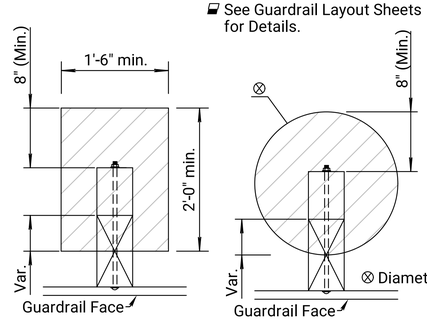
POSTS IN PAVEMENT

(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)

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.

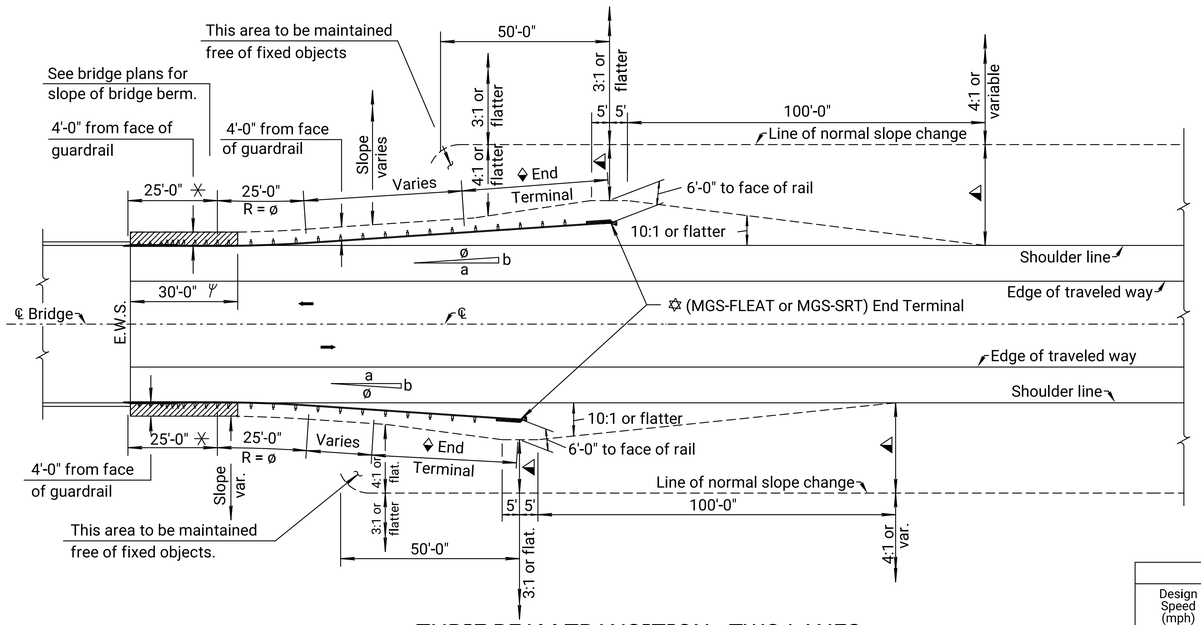
KDOT Graphics Certified 05-11-2022 Sh. No. 19

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.

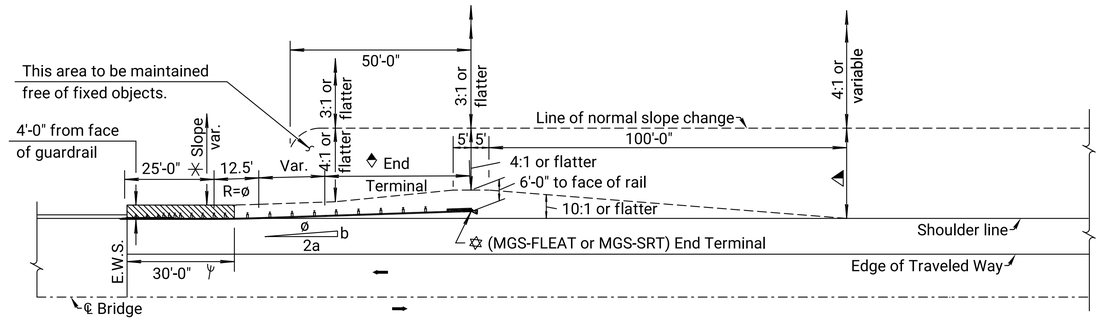
Plotted by: Joseph.Aboud@ks.gov 14-OCT-2025 13:16
File : KA576101rd611b.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	20	118



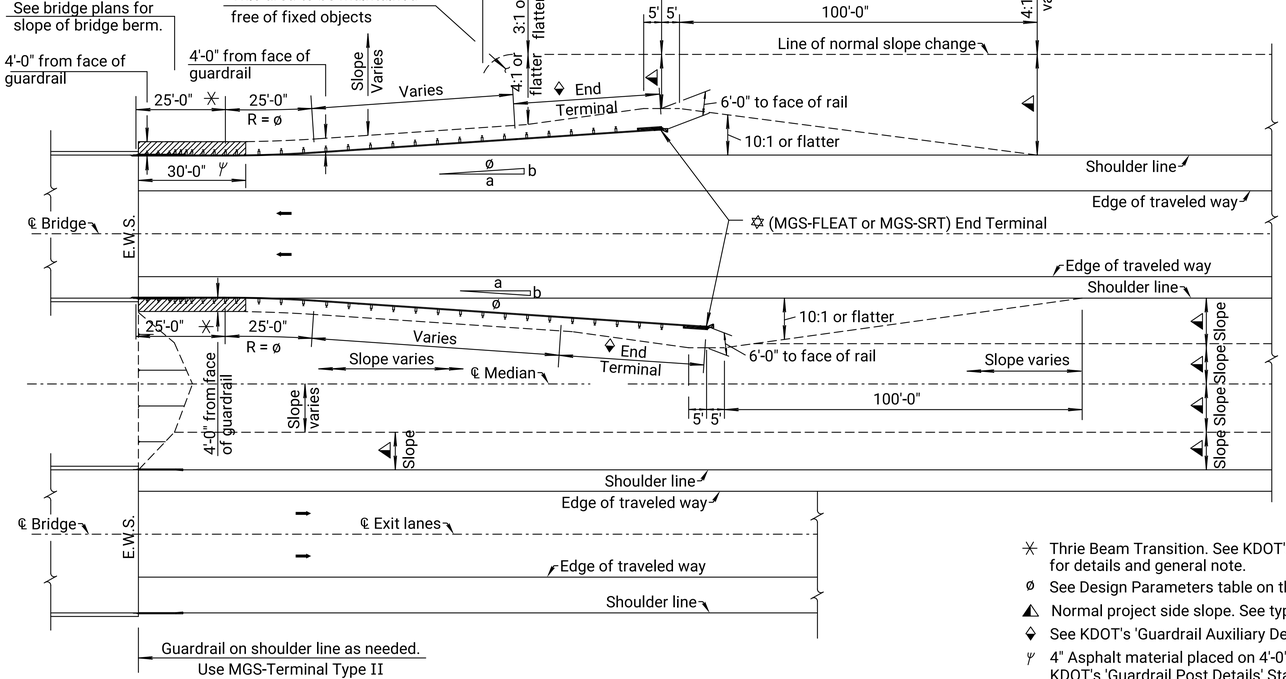
THRIE BEAM TRANSITION - TWO LANES

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.
- ℽ 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.

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

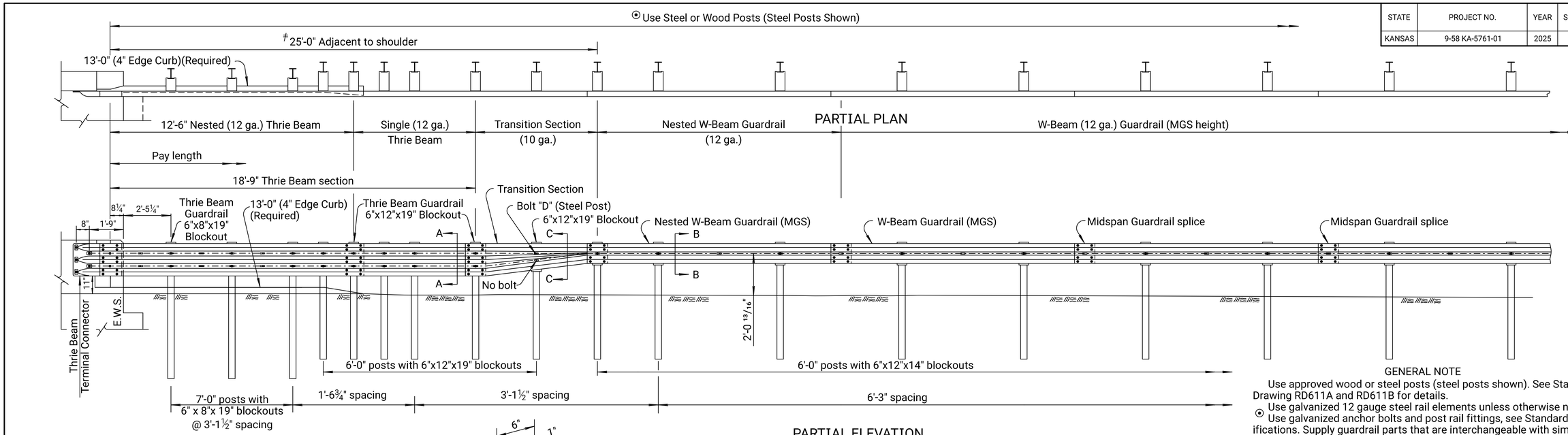
FHWA APPROVAL	06-19-18	APP'D.	Scott. W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

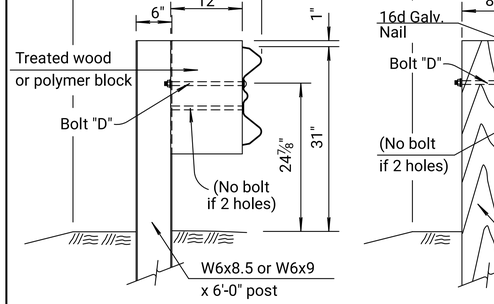
KDOT Graphics Certified 08-21-2022 Sh. No. 20

KDOT Graphics Certified

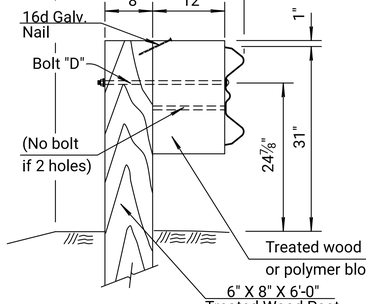
Plotted by : Joseph.Aboud@ks.gov 14-OCT-2025 13:16
File : KA576101rd612c.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	21	118

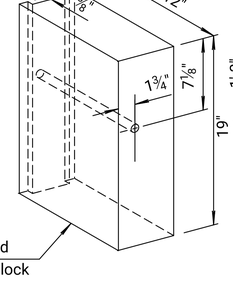




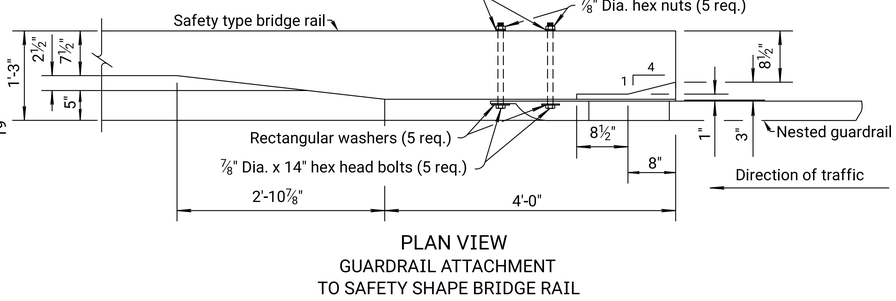
⊙ SECTION C-C (STEEL POST)



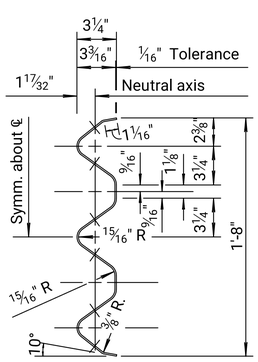
⊙ SECTION C-C (WOOD POST)



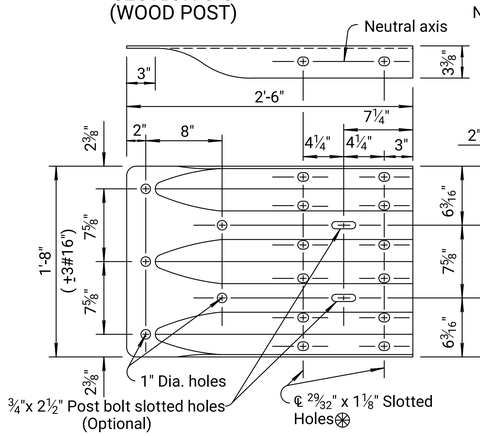
SECTION C-C (BLOCKOUTS)
Note: All holes ¾" dia.



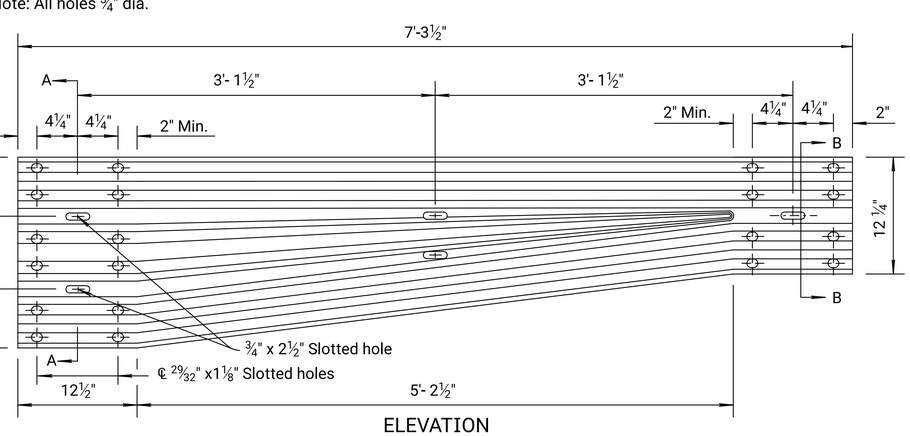
PLAN VIEW
GUARDRAIL ATTACHMENT
TO SAFETY SHAPE BRIDGE RAIL



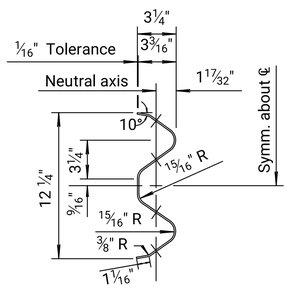
SECTION A-A
THRU RAIL ELEMENT
TYPICAL THRIE BEAM



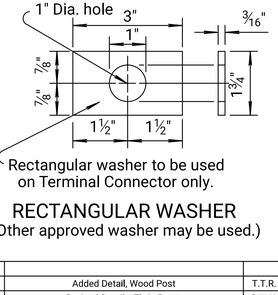
TERMINAL CONNECTOR
⊛ Optional 29/32" x 1¾" Slotted holes Rotated 50° (Typical) (12 req'd.)



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



SECTION B-B
THRU RAIL ELEMENT
TYPICAL W-BEAM



Rectangular washer to be used on Terminal Connector only.

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

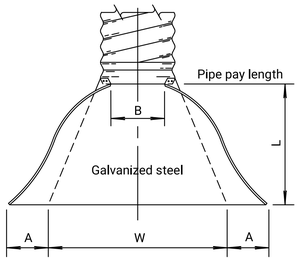
FHWA APPROVAL	04-21-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 12-06-2024 Sh. No. 21

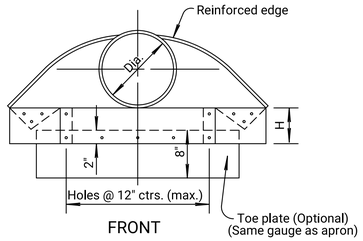
KDOT Graphics Certified

Plotted by: Joseph.Abboud@ks.gov 14-OCT-2025 13:16
File : KA576101rd613a.dgn

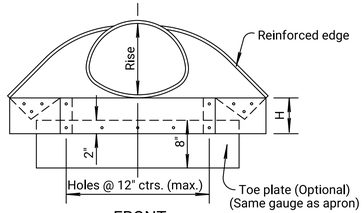
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	22	118



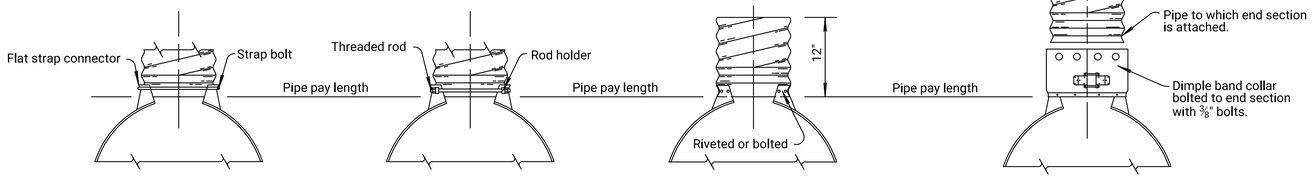
PLAN
(Illustrated with Type #3 Connection)



FRONT



FRONT



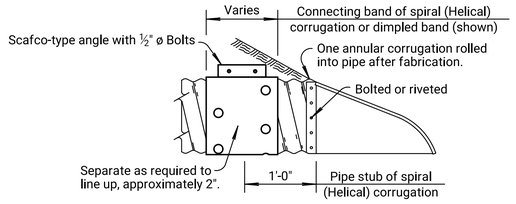
TYPE 1
Available in sizes 12" through 24" only.

TYPE 2
Available in sizes 30" and 36" Round and 17"x13" through 57"x38" Pipe-Arches.

TYPE 3
Available in sizes 42" through 96" Round and 60"x46" through 81"x59" Pipe-Arches.

TYPE 5
Available for all Round and equivalent Pipe-Arch sizes, (Type 1 and Type 2 connections are recommended for the smaller sizes with annular ends).

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



SPIRAL (HELICAL) CORRUGATION

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

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

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

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

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

GENERAL NOTE for END SECTIONS

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

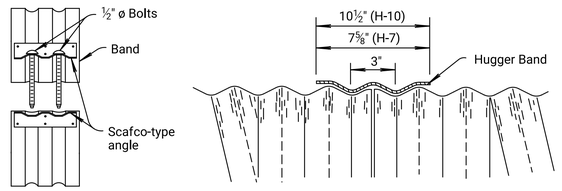
Toe plate extension, when specified, is an accessory and shall be the same gauge and metal as end section. Toe plate shall be punched to match holes in apron lip and attached with furnished 3#8" diameter nuts & bolts.

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

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

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

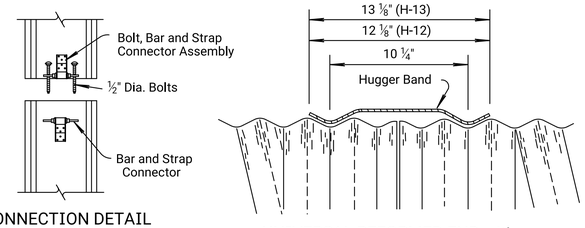
Connection of end sections by welding will not be permitted.



CONNECTION DETAIL
H-7 or H-10 BAND

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

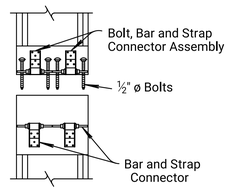
DETAILS FOR H-7 HUGGER BAND (12" thru 36")
or H-10 HUGGER BAND (12" thru 120")



CONNECTION DETAIL
SINGLE HARNESS

UNIVERSAL REFORMED END with
HUGGER BAND

DETAILS FOR H-12 or H-13 HUGGER BAND



CONNECTION DETAIL
DOUBLE HARNESS

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

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

GENERAL NOTE for METAL PIPE

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

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

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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

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

RD660

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

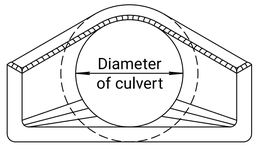
KDOT Graphics Certified 05-16-2022 Sh. No. 22

KDOT Graphics Certified

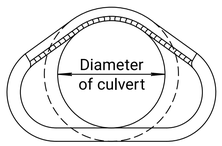
Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume 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: Joseph.Abboud@ks.gov 14-OCT-2025 13:17
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	23	118

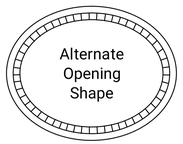


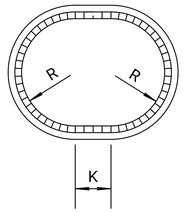
END ELEVATION (TYPE I)



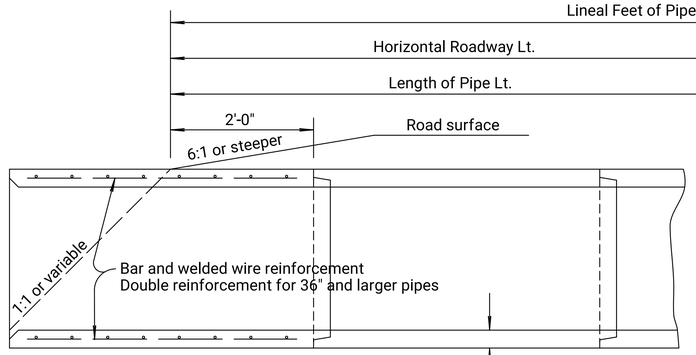
SECTION A-A

Showing rounding of inside edge of end section.

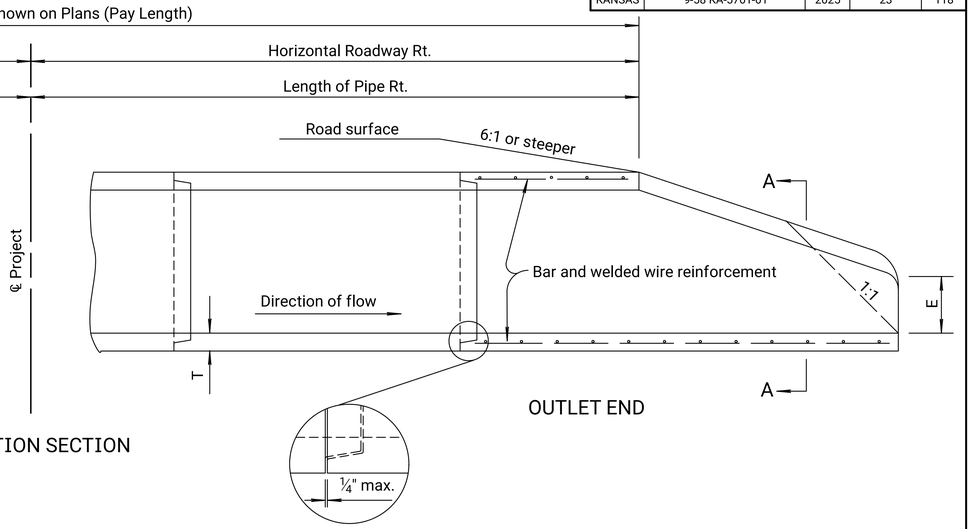




END ELEVATION
(TYPE III)



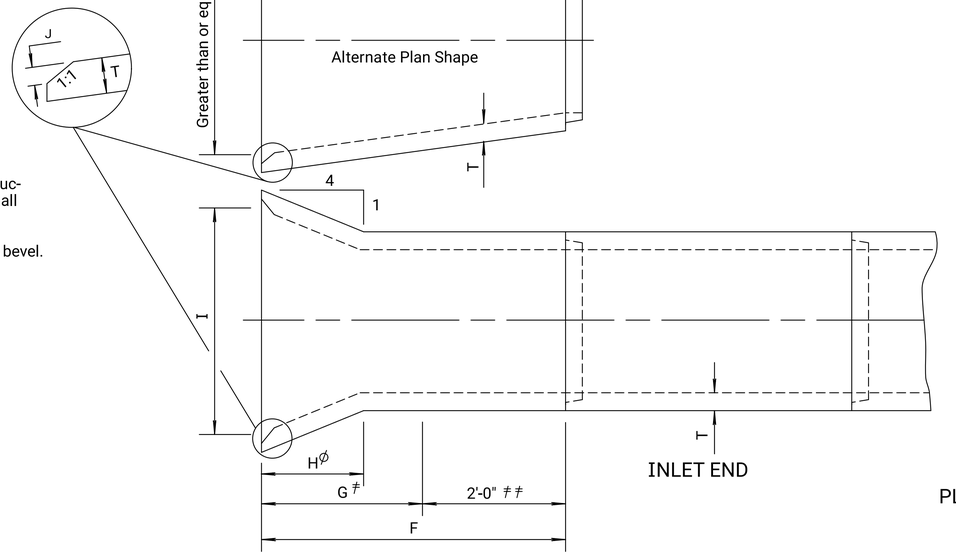
INLET END



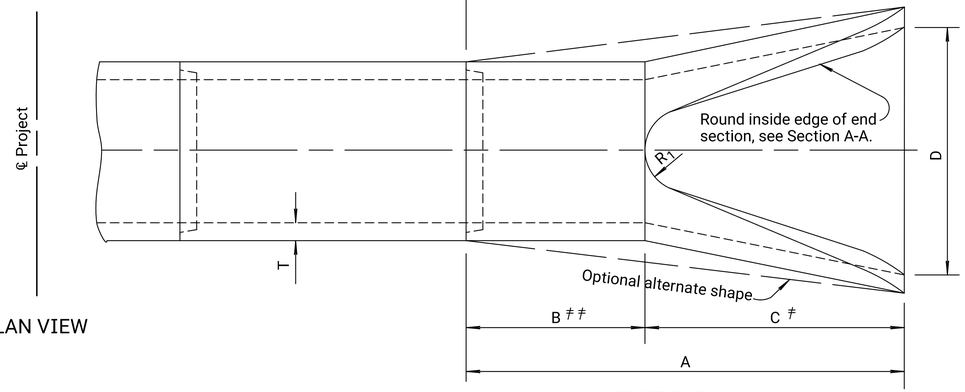
OUTLET END

ELEVATION SECTION

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



INLET END



PLAN VIEW

OUTLET END

∅ Transition to round pipe.
≠ Paid for as separate item of End Section, except when structures shall bid as alternates. In that case End Sections shall be subsidiary to bid item. "Drainage Structure No. ".
≠≠ Included in pay length of pipe.
⚹ Minimum waterway area is calculated at the inside of the bevel.

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

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

RD662

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

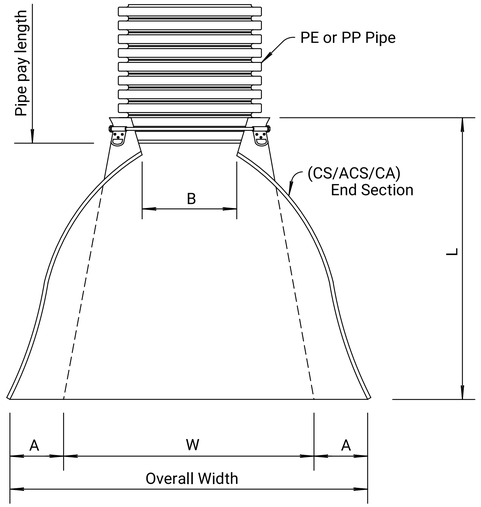
KDOT Graphics Certified 05-16-2022 Sh. No. 23

KDOT Graphics Certified

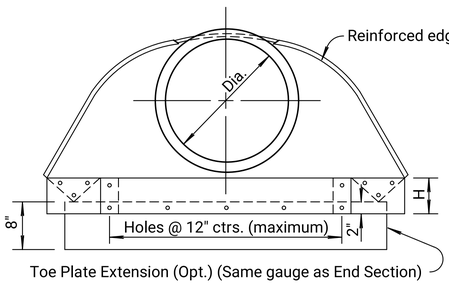
Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume 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.

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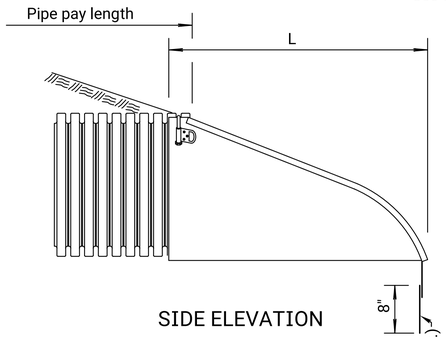
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	24	118



PLAN
(Illustrated with Type 2 Connector)

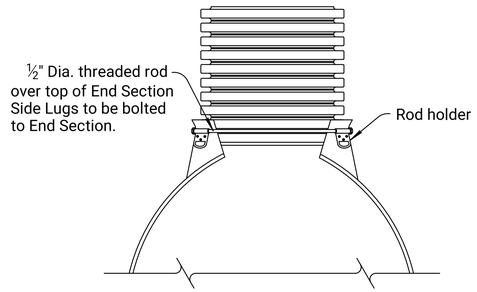


FRONT ELEVATION

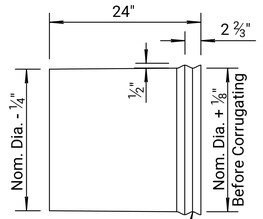


SIDE ELEVATION

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

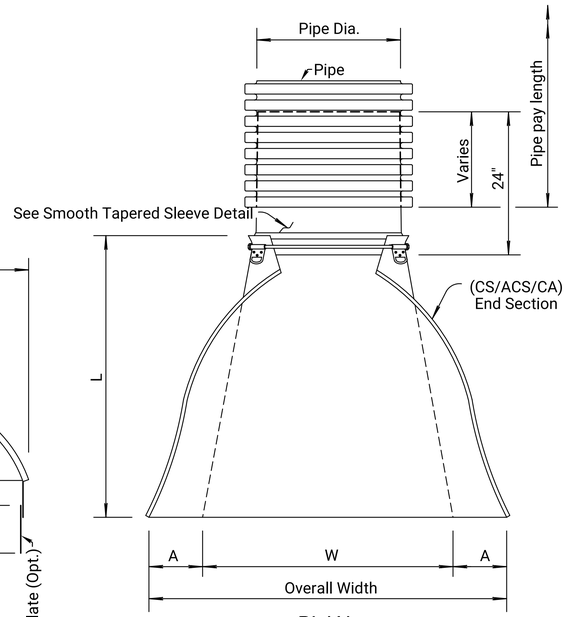


TYPE 2 CONNECTOR
(12" & Larger)

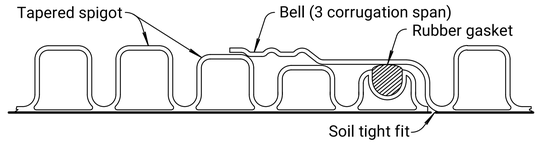


Form ½" x 2 ⅔" Corrugations in 12 ga. smooth CS (Galvanized) or ACS (Aluminized) metal, maintain inside diameter of sleeve.

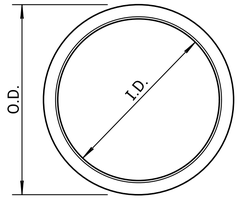
SMOOTH TAPERED SLEEVE DETAIL
(Required)



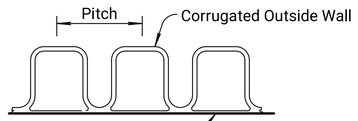
PLAN
TAPERED SLEEVE FOR ATTACHING
METAL END SECTION TO PE OR PP PIPE
(Illustrated with Type 2 Connector)



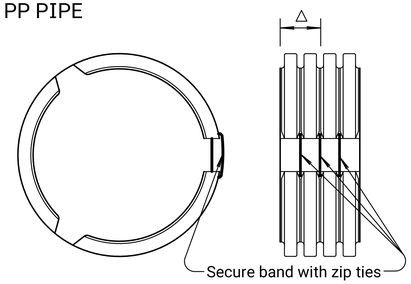
PE or PP PIPE BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT



DETAILS OF CORRUGATED
PE or PP PIPE

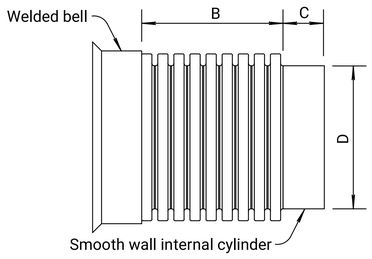


TYPICAL SECTION
CORRUGATED PE or PP PIPE



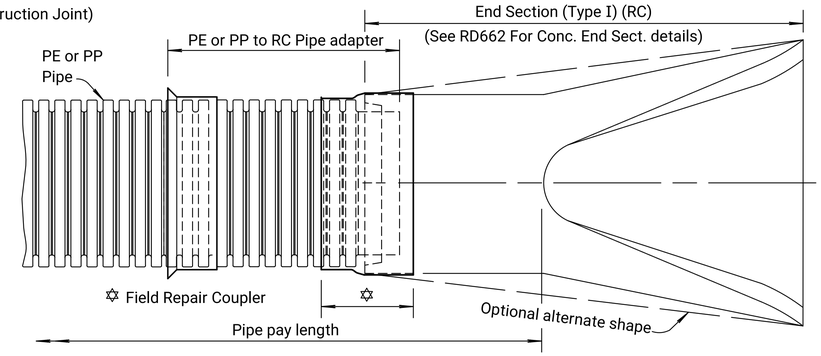
△ Two Full Corrugations (Minimum Overlap)

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



PE or PP to RC PIPE ADAPTER

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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

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

RD667

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

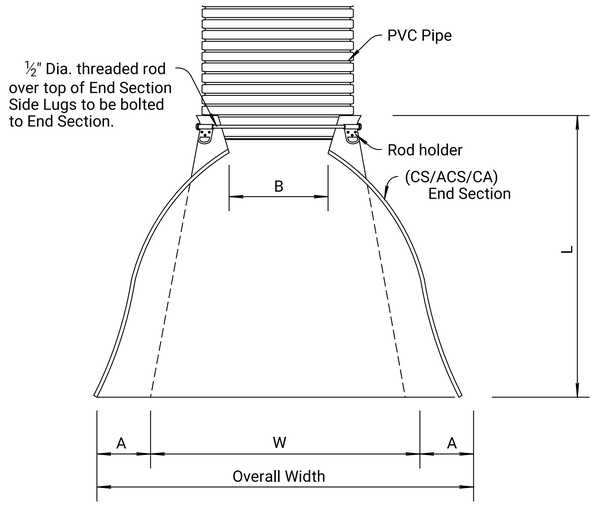
KDOT Graphics Certified 06-22-2022 Sh. No. 24

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

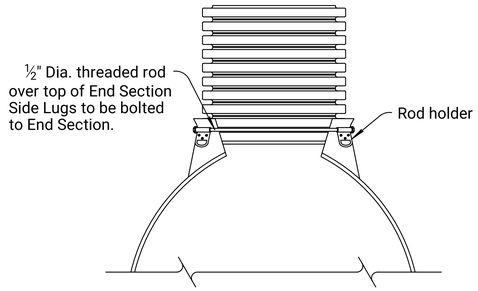
Plotted by : Joseph.Aboud@ks.gov 14-OCT-2025 13:17
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	25	118



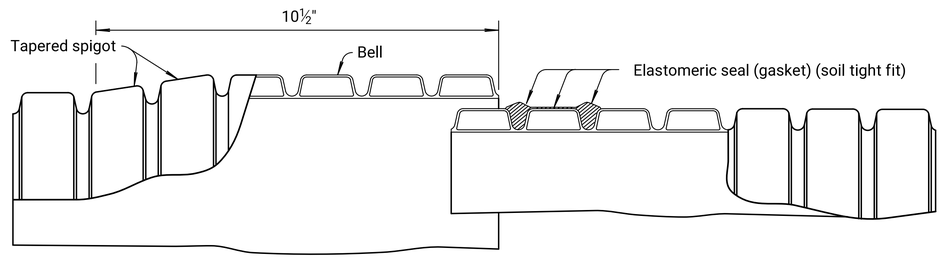
PLAN

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

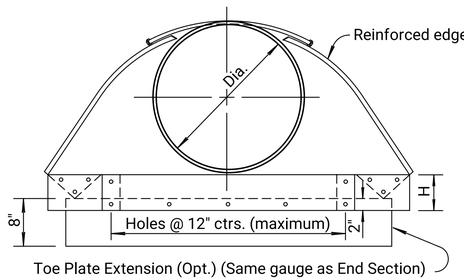


TYPE 2 CONNECTOR

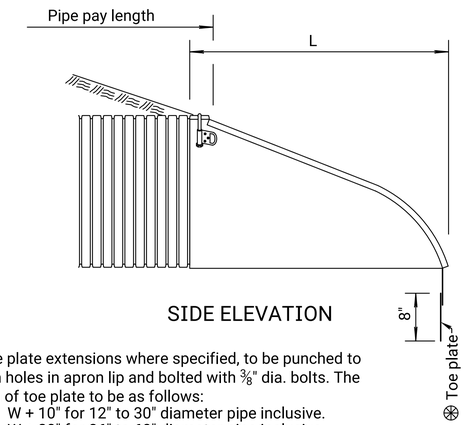
(12" & Larger)



PVC BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT

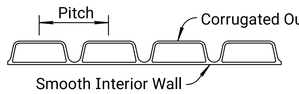


FRONT ELEVATION

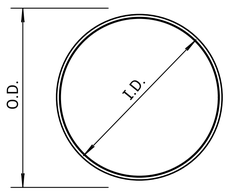


SIDE ELEVATION

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



TYPICAL SECTION
CORRUGATED PVC PIPE



DETAILS OF
CORRUGATED PVC PIPE

GENERAL NOTES

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

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

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

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

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

See Standard Specifications for PVC Pipe bedding and backfill.

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

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

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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

METAL END SECTION
(TYPE I)
for PVC PIPE

RD667B

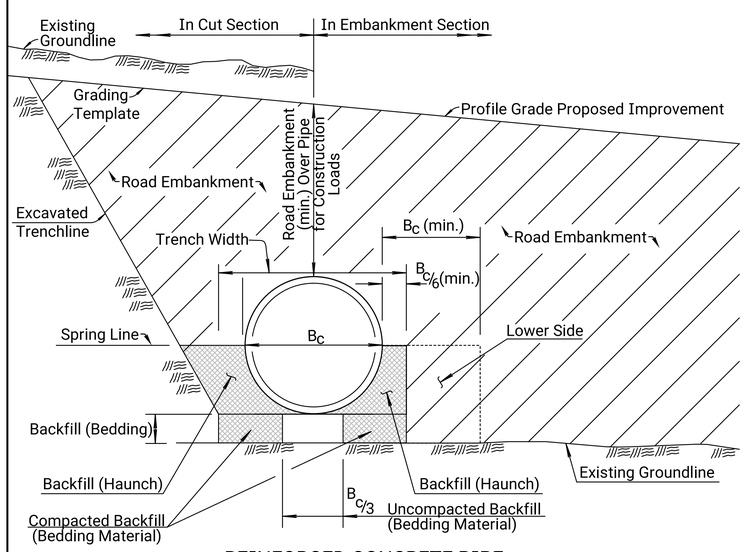
FHWA APPROVAL 06-27-08		APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	26	118

REINFORCED CONCRETE PIPE



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

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

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

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

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

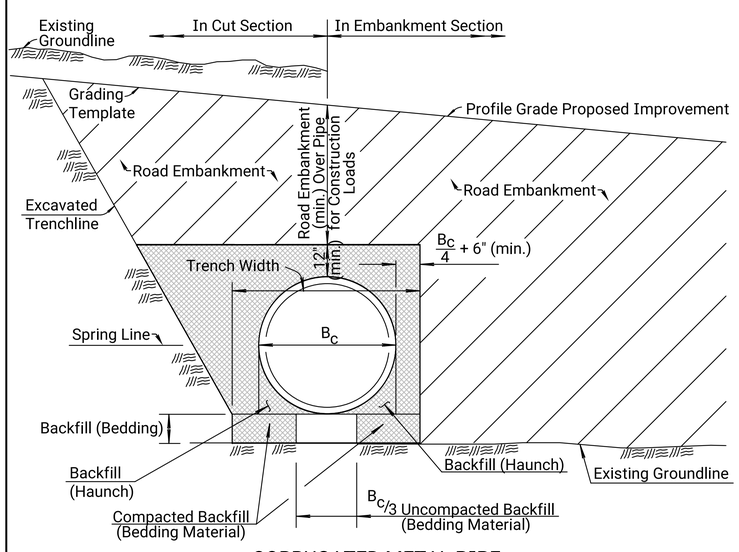
B_C: Outside Pipe Diameter

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

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

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

CORRUGATED METAL PIPE



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

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

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

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

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

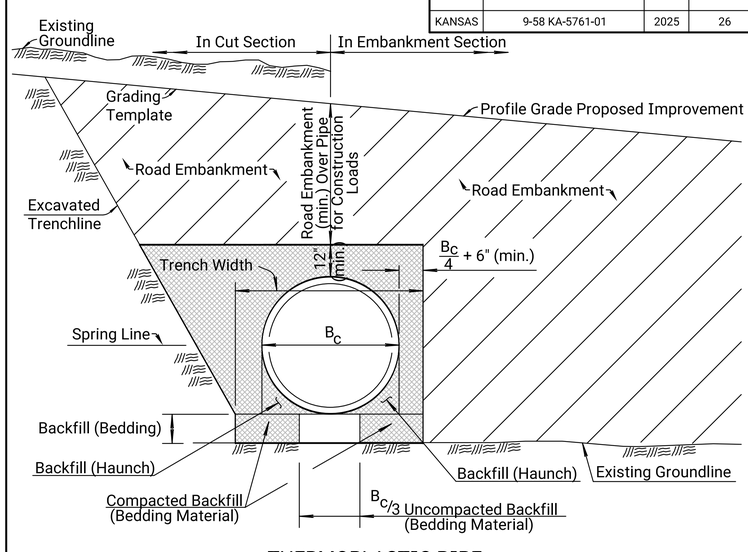
Trench Width: The minimum required trench width is the greater of:
$1.50 \times B_C + 12"$ or $B_C + 16"$

B_C: Outside Pipe Diameter

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

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

THERMOPLASTIC PIPE



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

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

Compacted Backfill Material: Use Type B compaction.

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

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

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

B_C: Outside Pipe Diameter

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

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

GENERAL NOTES

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

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

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

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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

PIPE INSTALLATION DETAILS

RD658

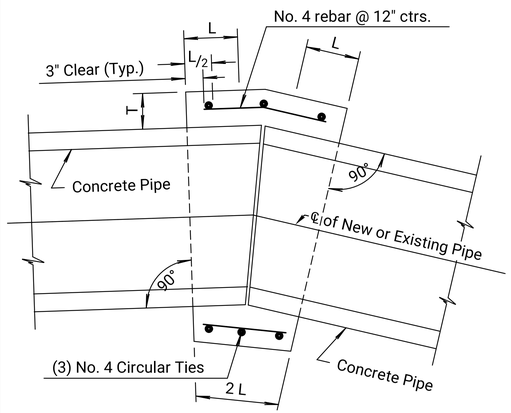
FHWA APPROVAL		06-08-22	APP'D.	
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

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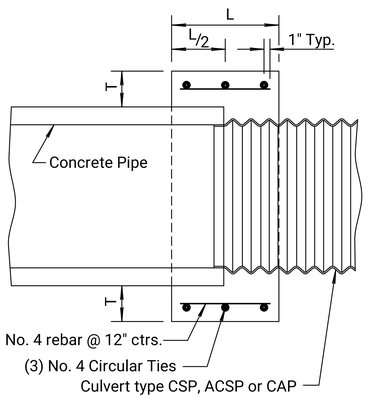
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	27	118



PIPE COLLAR AT CHANGE IN ALIGNMENT

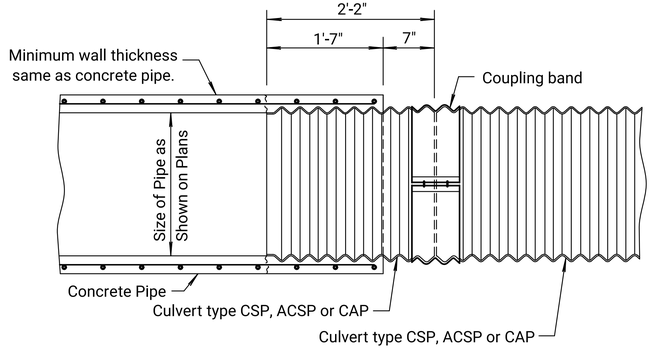
TYPE A COLLAR



PIPE COLLAR AT CHANGE IN PIPE MATERIAL

TYPE B COLLAR

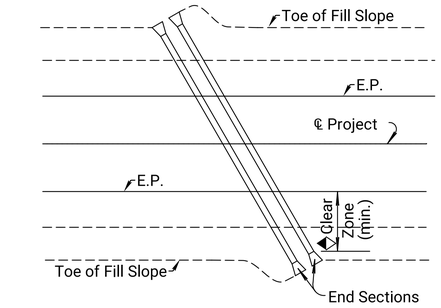
CONCRETE PIPE COLLAR		
Pipe Dia.	L	T
18"	1'-0"	6"
24"	1'-0"	6"
36"	1'-6"	8"
48"	1'-6"	10"
60"	1'-9"	11"



(CONCRETE PIPE CONNECTED TO CORRUGATED METAL PIPE)

TYPE C COLLAR ⚠

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



PLACEMENT OF ROTATED PIPES
RELATIVE TO FILL SLOPE
AND CLEAR ZONE

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

General Notes:

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

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

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

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

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

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

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

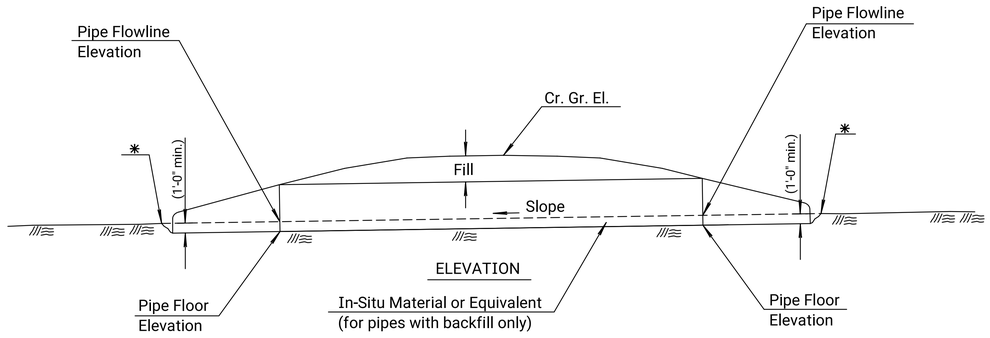
PIPE COLLARS

GENERAL NOTE

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

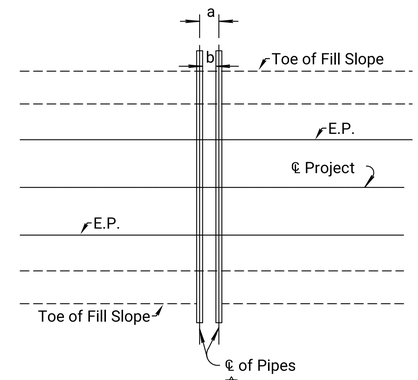
For pipes where the height or rise is less than or equal to 4'-0" install the pipe such that embedment will occur through natural sedimentation. See Pipe Embedment detail shown on this sheet.

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



PIPE EMBEDMENT

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



a = Face width of end section ✡ + 1'.

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

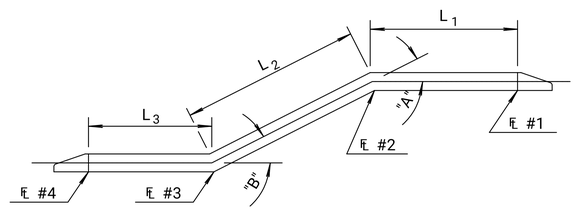
Type I Concrete = D
Type III Concrete = I
Type I CM = W+ 2A
Type III CM = G
Type IV = W+ 2A

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

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

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

MULTIPLE PIPE SPACING



Sketch Along ℄ CRP (CMP)
Broken-Back

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS
PIPE CULVERT DETAILS

RD668

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

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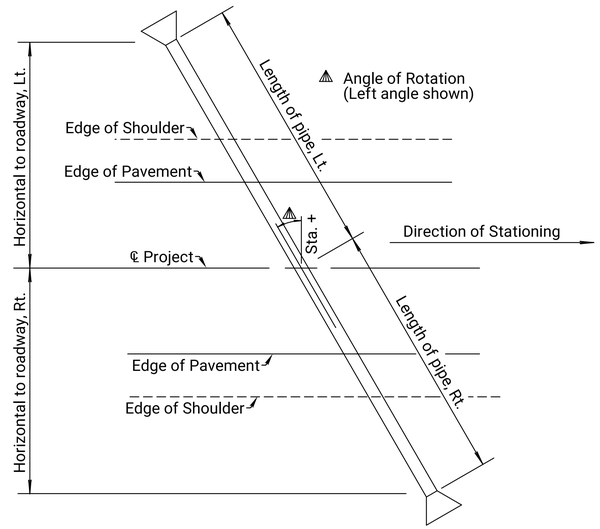
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	28	118

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
See Sh. No. 57 for Drainage Structure Quantities																				

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

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



PLAN
(Showing Rotation about ℄)

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

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

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

▱ When inside diameter of pipe is 60" or less.

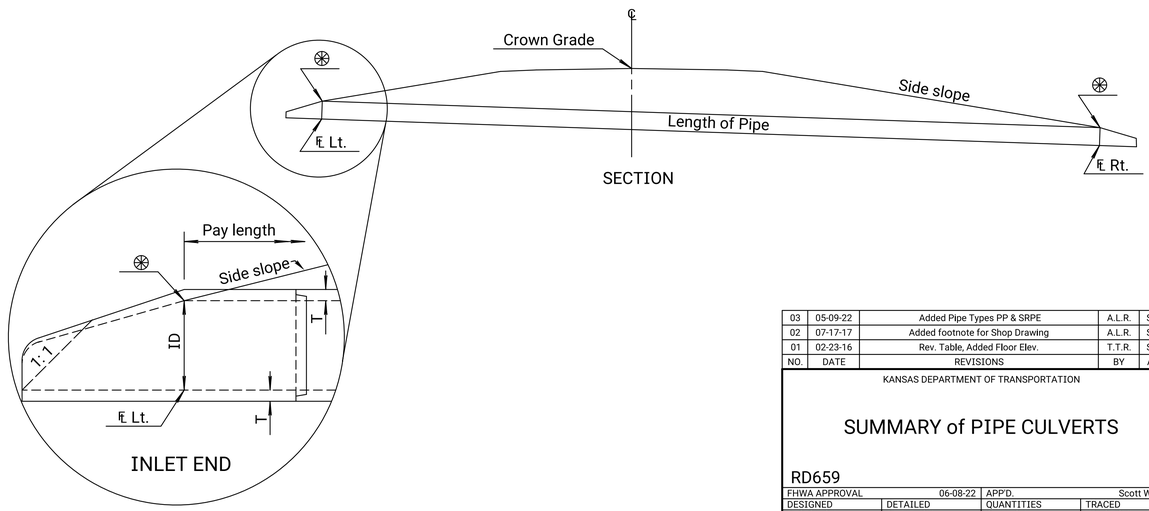
≈ For inside diameter: ≥ 30"

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

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

Ψ Submit Shop Drawing of connection for review

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



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

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY of PIPE CULVERTS

RD659

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

KDOT Graphics Certified 08-06-2025 Sh. No. 28

KDOT Graphics Certified

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	9-58 KA-5761-01	2025	29	118

SUMMARY OF QUANTITIES

Item / Location	Excavation	Concrete		Reinforcing Steel		Prestressed Concrete Beams (NU35+2)	Steel Piles HP12x63 *	Test Pile (Special) (HP12x63) *	Drilled Shaft (42") (Cased)	Core Hole (Investigative)	Sonic Test (Drilled Shaft) (Set Price)	Bridge Backwall Prot. System	Abutment Aggregate Drain	Bridge Deck Grooving	Slope Protection (Riprap Stone)	Temporary Shoring	Cast Steel Pile Points
	Class I Cu. Yds.	(Grade 4.0) (AE) (SW) Cu. Yds.	(Grade 4.0) (AE) Cu. Yds.	(Grade 60) (Epoxy Coated) Lbs.	(Grade 60) Lbs.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Sq. Yds.	Cu. Yds.	Sq. Yds.	Cu. Yds.	Lump Sum	Each
Abutment No. 1	140	**	21.4	**			469	77				39	61		1,044		
Pier No. 1	36		51.8		13,830				236	130							
Pier No. 2	0		45.4		12,570				248	136							
Abutment No. 2	140	**	21.4	**			528					39	61		883		
Substr. Total	316		140.0		26,400		997	77	484	266	1	78	122		1,927		
Superstr. Total		504.9		153,410		1,620								1,218			
Total	316	504.9	140.0	153,410	26,400	1,620	† 997	† 77	484	266	1	78	122	1,218	1,927	1	16

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

*NOTE: Only steel pile HP12X63 shall be used on this project.

† Summary of Piling
Abutment No. 1 7 @ 67'
1 Test @ 77'
Abutment No. 2 8 @ 66'

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

GENERAL NOTES

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

EMBANKMENT: Complete the embankment at the abutments as shown on the Bridge Excavation sheet prior to driving the abutment piling.

BRIDGE EXCAVATION: Elevation 1124.10 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: Backfill compaction shall be required at abutments.

PILING: Drive all piling to penetrate or bear upon the Hamlin Shale Member. Driving shall stop when in the opinion of the Engineer additional driving may damage the piling. Drive all piling to the Pile Driving Formula Load of:

Abutment No. 1	129.5 Tons
Abutment No. 2	129.5 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.

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

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

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

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

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 9 inches.

The theoretical amount of concrete required for the fillets is 52.5 Cu. Yds. 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 course 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").

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.

BROKEN CONCRETE: Waste the broken concrete from the existing bridge on sites provided by the Contractor and approved by the Engineer.

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

SLOPE PROTECTION (Riprap Stone): Place Slope Protection (Riprap Stone) to the limits and thicknesses shown on the plans or as directed by the Engineer.

Use ¼ton Heavy Series Riprap Stone as described in Division 1100 placed to the limits shown on the plans.

DRIP LINE PROTECTION: 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.

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

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 Cu. Yds./hr., 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.

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.

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.

DEMOLITION PLANS: This is a Category B Demolition. Submit detailed Demolition Plans to the Field Engineer at least 2 weeks before the demolition meeting. Identify, on the plans, the Demolition Supervisor meeting the requirements of the KDOT Specifications. No Demolition work will begin without approved Demolition Plans. A Licensed Professional Engineer is not required.

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

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.

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.

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

ASBESTOS INFORMATION: Samples of this structure weretested to determine the amount of Asbestos ContainingMaterials (ACM) present in the components. The results arelisted below:

Concrete: 0%

Date of Report: October 28, 2021

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

GEOTECHNICAL REPORT: The geotechnical report (Dated April 17, 2024) includes soil parameters for retaining wall (sheet pile) design. The report recommends a traffic surcharge of 250 lb/ft². The geotechnical information shown on the plans is the best information available. The report is available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison, Topeka, KS.

INDEX OF BRIDGE DRAWINGS

Sheet No.	Drawing
29 - 30	General Notes and Quantities
31	Contour Map
32	Construction Layout
33	Channel Armoring Details
34	Engineering Geology
35	Phase II Construction
36	Phase III Construction
37	Abutment Aggregate Drain
38 - 40	Abutments Details
41	Drilled Shaft Details
42 - 43	Pier Details
44	Standard Prestressed Beam Details
45	NU35+2 Beam Details
46	Temporary Diaphragm Details
47	Typical Section
48 - 49	Slab & Auxiliary Details
50 - 51	Corral Rail Details
52 - 53	Bill of Reinforcing Steel and Bending Diagrams
	Standards
54	Bridge Excavation
55	Standard Pile Details
56	Supports and Spacers for Reinforcing Steel

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 = 8 ksi
Reinforcing Steel (Grade 60)	fy = 60 ksi
Steel Pile (Grade 50)	fy = 50 ksi
Prestressed Strand	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 No. 1 & 2	129.5	88.4	0.65

LRFD DESIGN DRILLED SHAFT LOAD:

Design Loading (Tons/Shaft)	Strength I	Service I	Phi
Piers No. 1 & 2	417.0	298.0	
		End Bearing	0.50
		Side Friction	0.50

TRAFFIC DATA - (075)	
AADT (2024)	900
AADT (2044)	1,100
DHV	11%
D	60/40
T	15.0%

LFD & LRFR RATING FACTORS		
Truck / Rating Level	Inventory	Operating
HS-20 (36T)	1.11	2.13
Type HET (110T)		1.07
2002 LFD Rating. 17th Edition AASHTO		
HL-93 Loading	1.57	2.04
2018 Manual for Bridge Evaluation		

NO.	DATE	REVISIONS	BY	APP'D
06	04-07-14	Current Release	J.P.J.	C.E.R.
05	02-12-14	Added Benchmark	J.P.J.	C.E.R.
04	08-02-12	Added NOT3135 & NOT3145	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

GENERAL NOTES AND QUANTITIES
K-9 over Robidoux Creek

Proj. 9-58 KA-5761-01 Marshall Co.

DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	30	118

GENERAL NOTES

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 SHAFTS: Construct the drilled shafts using the cased method. A permanent casing isrequired. 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 (42“)". 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.

PERMANENT CASING: See KDOT Specifications.

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.

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.

TEMPORARY SHORING: The bid item "Temporary Shoring" includes all labor and material necessary to furnish shoring at the location shown on the plans for the temporary bracing of the embankment during excavation. Maintain the temporary shoring until the Engineer authorizes its removal. The temporary shoring plans are to be designed and sealed by a registered Professional Engineer. Submit design calculations and shoring plans to the Field Engineer for review 6 weeks before work is scheduled to begin. Work shall not begin until the Engineer grants approval.

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

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

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

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.

NO.	DATE	REVISIONS	BY	APP'D
06	04-07-14	Current Release	J.P.J.	C.E.R.
05	02-12-14	Added Benchmark	J.P.J.	C.E.R.
04	08-02-12	Added NOT3135 & NOT3145	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

GENERAL NOTES AND QUANTITIES
K-9 over Robidoux Creek

Proj. 9-58 KA-5761-01 Marshall Co.

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

KDOT Graphics Certified 10-09-2025 Sh. No. 30

KDOT Graphics Certified

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	31	118

P.O.T. ℄ Sta. 568+88.92
N 721,156.476 E 10,303,453.021
1. Found ½" rebar 1.0' deep
2. ⅝" rebar with "JEO CP" cap (HCP 1) 57.7' SSE
3. T-post flush with ground (BM 11) 83.3' WNW
4. Mag. nail top cor. fence post 143.2' WSW

℄ P.C. Sta. 573+75.00
N 721,441.198 E 10,303,846.984
1. = ℄ Sta. 573+75.00
2. Not Set

℄ P.R.C. Sta. 576+29.31
N 721,588.119 E 10,304,054.555
1. 2.51' Rt. of ℄ Sta. 576+29.29
2. Not Set

℄ P.I. Sta. 577+56.13 (Bk.) =
P.I. Sta. 577+56.13 (Ahd.)
△ = 01°07' 36" (Lt.)
N 721,660.369 E 10,304,158.783
1. 5.0' Rt. of ℄ Sta. 577+56.09
2. Not Set

℄ P.T. Sta. 578+82.95
N 721,734.655 E 10,304,261.571
1. 5.0' Rt. of ℄ Sta. 578+82.91
2. Not Set

℄ P.T. Sta. 586+61.42
N 722,192.499 E 10,304,891.161
1. 2.70' Rt. of ℄ Sta. 586+61.37
2. Not Set

P.C. ℄ Sta. 587+50.16
N 722,246.695 E 10,304,961.536
1. Found ½" rebar 1.0' deep
2. Mag. nail in top 36" RCP 62.6' N
3. Mag. nail in top 36" RCP 59.5' SE

℄ P.C. Sta. 588+58.80
N 722,311.113 E 10,305,048.928
1. = ℄ Sta. 588+58.72
2. Not Set

℄ P.I. Sta. 585+60.12 (Bk.) =
P.I. Sta. 585+60.11 (Ahd.)
△ = 00° 54' 00" (Lt.)
N 722,131.595 E 10,304,810.208
1. 5.0' Rt. of ℄ Sta. 585+60.09
2. Not Set

NE Cor. Sec. 19, T4S, R9E
N 723,918.519 E 10,304,323.427
1. Set ⅝" rebar w/ "J. Sommers PS 1542" ID cap, 1.0' deep
2. 2,155.24' Lt of ℄ Sta. 579+25.22 NE∠= 53° 20' 00"
3. 2,223.93' Lt of ℄ Sta. 610+11.57 SW∠= 51° 08' 27"

CHANNEL CHANGE

P.O.T. Sta. 2+27.56
N 722,020.504 E 10,304,170.620
1. 279.95' Lt. of ℄ Sta. 579+76.63
2. Not Set

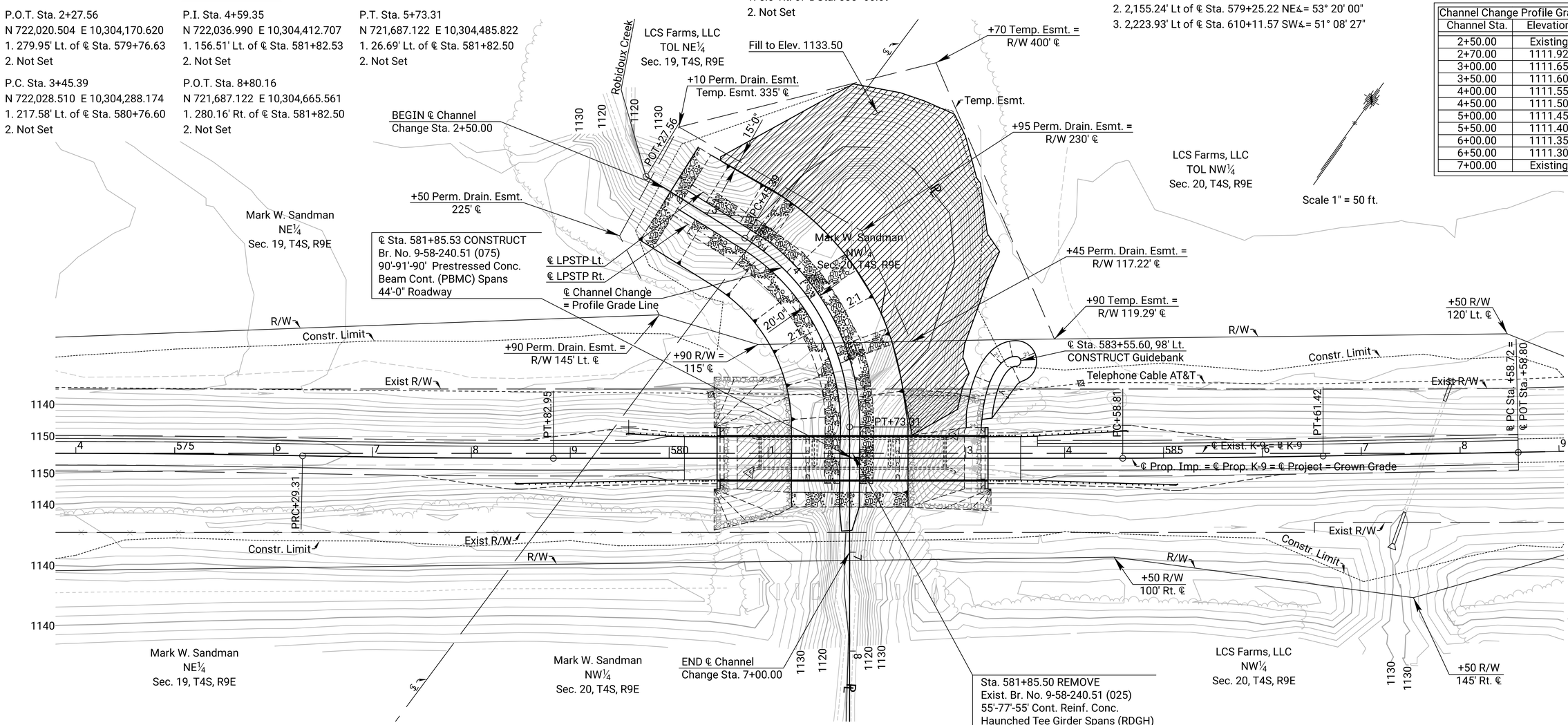
P.C. Sta. 3+45.39
N 722,028.510 E 10,304,288.174
1. 217.58' Lt. of ℄ Sta. 580+76.60
2. Not Set

P.I. Sta. 4+59.35
N 722,036.990 E 10,304,412.707
1. 156.51' Lt. of ℄ Sta. 581+82.53
2. Not Set

P.O.T. Sta. 8+80.16
N 721,687.122 E 10,304,665.561
1. 280.16' Rt. of ℄ Sta. 581+82.50
2. Not Set

P.T. Sta. 5+73.31
N 721,687.122 E 10,304,485.822
1. 26.69' Lt. of ℄ Sta. 581+82.50
2. Not Set

Channel Change Profile Grade	
Channel Sta.	Elevation
2+50.00	Existing
2+70.00	1111.92
3+00.00	1111.65
3+50.00	1111.60
4+00.00	1111.55
4+50.00	1111.50
5+00.00	1111.45
5+50.00	1111.40
6+00.00	1111.35
6+50.00	1111.30
7+00.00	Existing



UTILITY OWNERS

ATT (Fiber Optic Line)
Located by USIC 1(800) 778-9140

Center Cor. Sec. 19, T4S, R9E
N 721,168.368 E 10,301,668.973
1. Found ½" rebar w/ "Cohorst #669" ID cap, 0.1' deep
2. 1,784.24' Lt of ℄ Sta. 568+89.11 NE∠= 36° 14' 03"
3. Nail & bottlecap W face utility pole 14.2' S
4. Mag nail top S end 12" CMP 8.1' SSE

SE Cor. Sec. 19, T4S, R9E
N 718,511.048 E 10,304,258.513
1. Found Corps of Engineers brass cap flush w/ surface
2. Mag nail w/ 2 washers NW face of buried cable marker post 59.0' SW
3. Nail w/ plastic "survey marker" washer SW face utility pole 46.8' E
4. ℄ Valley Road 19.5' S

E ¼ Cor. Sec. 19, T4S, R9E
N 721,151.101 E 10,304,284.273
1. Found ½" rebar w/ "PETR" ID cap, 0.4' deep
2. 831.11' Rt of ℄ Sta. 568+89.11 NE∠= 36° 14' 03"
3. 612.45' Rt of ℄ Sta. 579+25.22 NE∠= 53° 20' 00"
4. Lone wood fence post NE side of rebar

Historic Highwater Information

There are no records of Highway K-9 ever overtopping near this location. Landowner Leo Stallbaumer reported water over his field entrance 1,000 ft. east of the bridge in summer 2019, Sta. 592+60, Elevation = 1141.80.

Sea Level Datum of NAVD 1988

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

CONTOUR MAP
K-9 over Robidoux Creek

Proj. 9-58 KA-5761-01 Marshall Co.

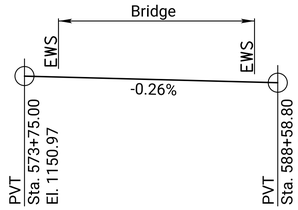
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DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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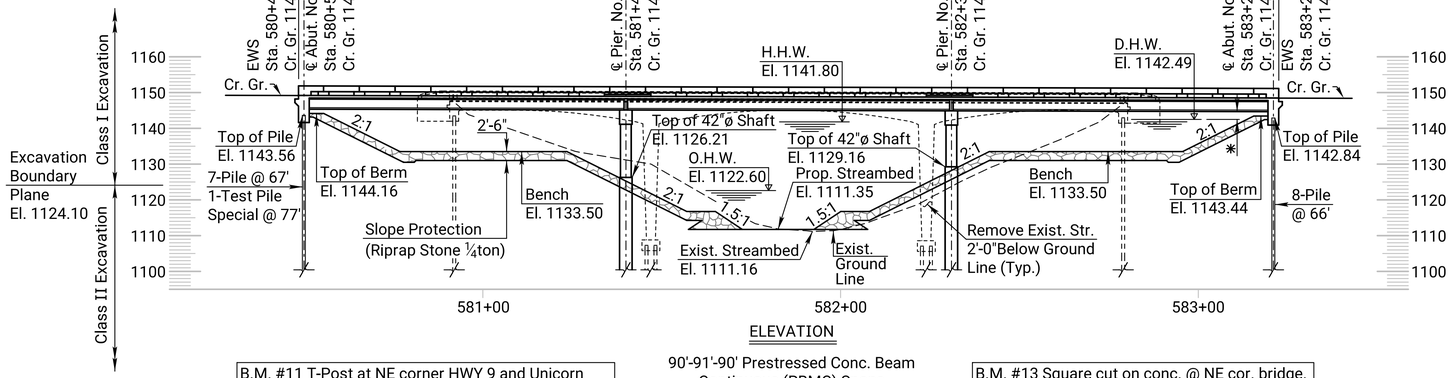
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File : ka576101bbr0075-003 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	32	118



PROFILE GRADE



ELEVATION

*D.H.W. Clr. = 2'-4 5/16"

DRAINAGE DATA

Drainage Area	122.9 sq. mi.
Design Frequency	50 yrs
Design Discharge (Q50)	16,200 cfs
Design High Water Elevation	1142.49 ft.
Change In Design Backwater	-0.08 ft.
Overtopping Elevation (Sta. 595+00)	1145.50 ft.
Overtopping Discharge	19,900 cfs
Overtopping Frequency	100 yrs
Discharge at Q100	19,900 cfs
Change in Backwater at Q100	-0.13 ft.
Backwater Elevation at Q100	1143.42 ft.
Historic High Water Elevation	1141.80 ft.
Ordinary High Water Elevation	1122.60 ft.
Total Waterway Provided	4277 sq. ft.
Design Waterway Provided	3170 sq. ft.
Estimated Ordinary High Water Discharge	1270 cfs
Change in Waterway Opening	1291 sq. ft.

EXPANSION JOINT WIDTH DETAILS (W2)

ᵞ Temperature (F°)	40°	50°	60°	70°	80°	90°
Formed Concrete Opening Size	3¼"	3⅛"	3"	3"	2⅞"	2¾"

ᵞ Average Ambient Temperature over previous 24 hours.

*See Road Cross Sections for transition to normal section.

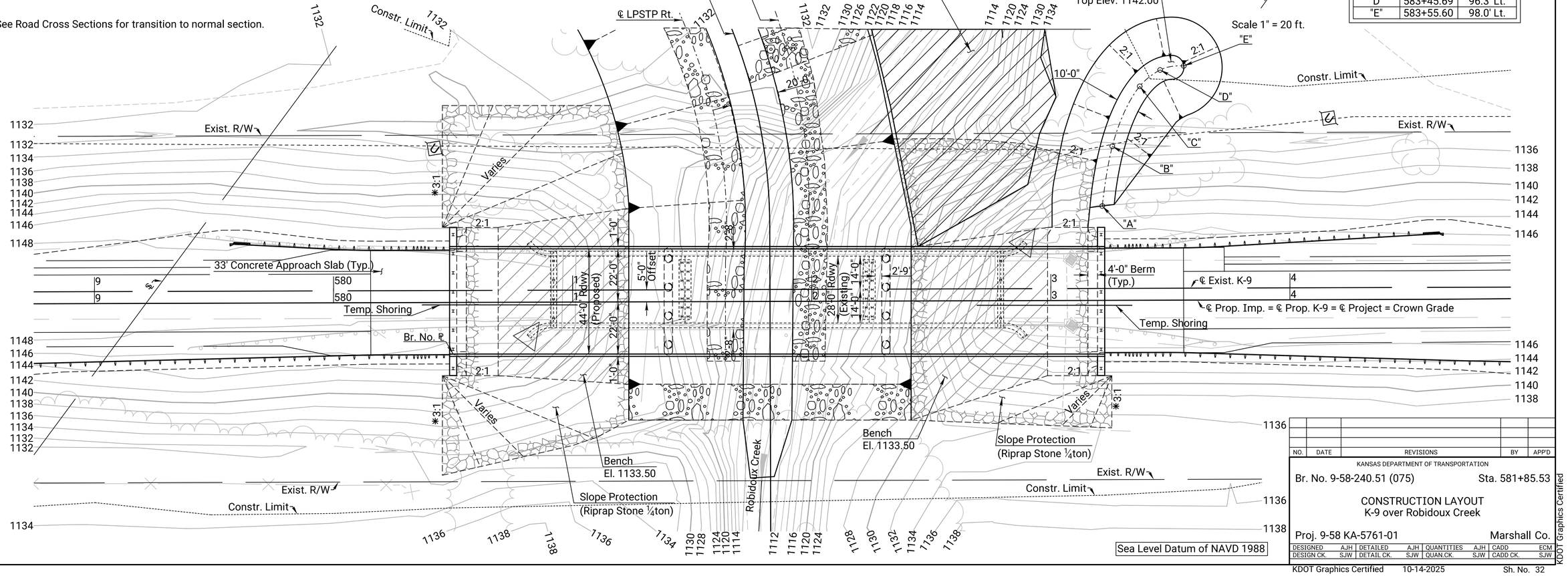
B.M. #11 T-Post at NE corner HWY 9 and Unicorn Rd. 61.67' Lt. of ℄ Sta. 568+32.88 Elev. = 1,148.50

B.M. #12 Square cut on conc. @ SW cor. bridge. 19.3' Rt. of ℄ Sta. 580+81.69 Elev. = 1,148.98

90'-91'-90' Prestressed Conc. Beam Continuous (PBMC) Spans
Pile Bent Abutment and Column Bent Piers
44'-0" Roadway

B.M. #13 Square cut on conc. @ NE cor. bridge. 19.2' Lt. of ℄ Sta. 582+89.16 Elev. = 1,148.33

B.M. #14 T-Post on S. side of HWY 9 and W. side of field entrance 29.55' Rt. of ℄ Sta. 592+76.82 Elev. = 1,143.53



Guidebank Stations		
Location	Station	Offset (Prop. Imp.)
"A"	583+21.51	39.5' Lt.
"B"	583+25.70	64.5' Lt.
"C"	583+37.17	89.5' Lt.
"D"	583+45.69	96.3' Lt.
"E"	583+55.60	98.0' Lt.

Sea Level Datum of NAVD 1988

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

CONSTRUCTION LAYOUT
K-9 over Robidoux Creek

Proj. 9-58 KA-5761-01 Marshall Co.

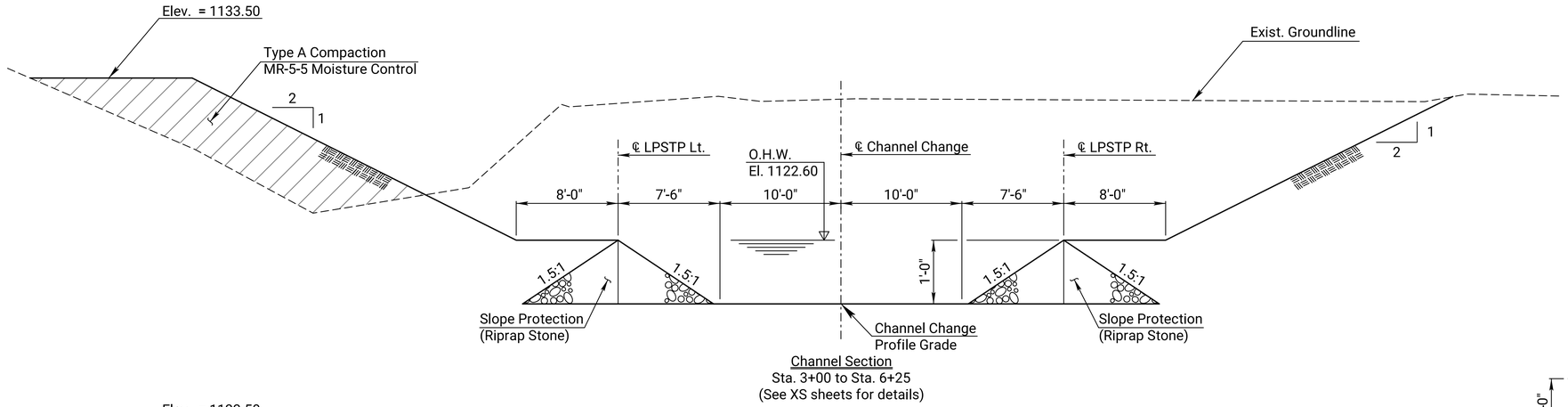
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DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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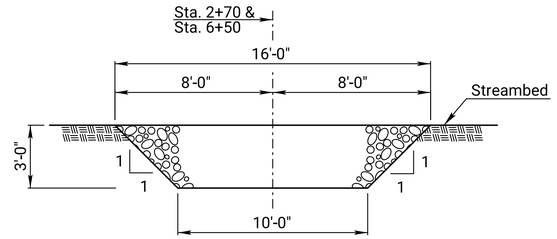
Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:33
File : ka5761101bbr0075-004 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	33	118

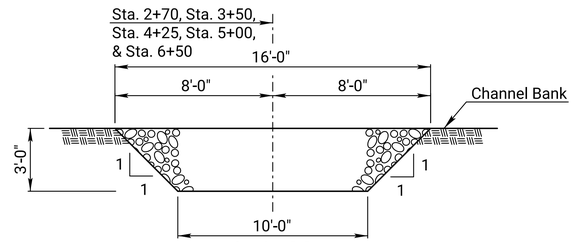


Channel Section
Sta. 3+00 to Sta. 6+25
(See XS sheets for details)

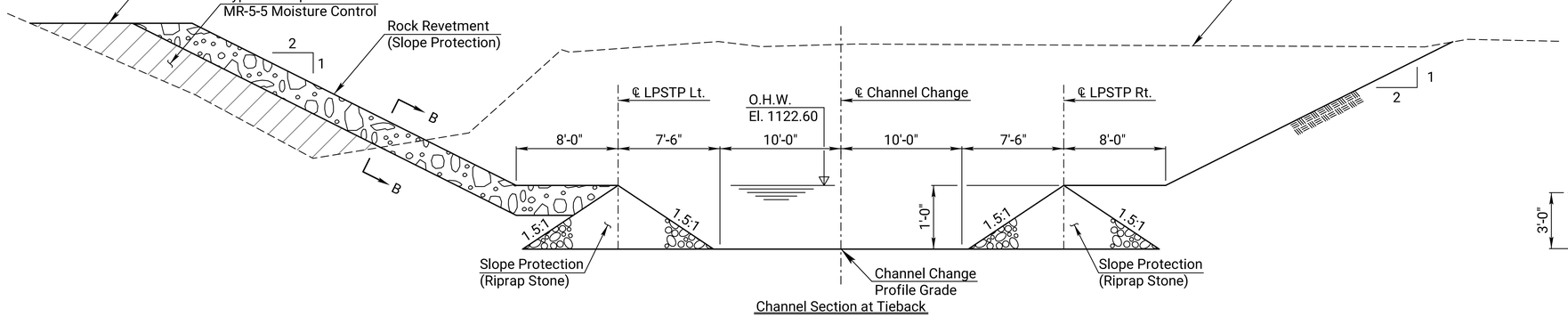
Channel Change Profile Grade	
Channel Sta.	Elevation
2+50.00	Existing
2+70.00	1111.92
3+00.00	1111.65
3+50.00	1111.60
4+00.00	1111.55
4+50.00	1111.50
5+00.00	1111.45
5+50.00	1111.40
6+00.00	1111.35
6+50.00	1111.30
7+00.00	Existing



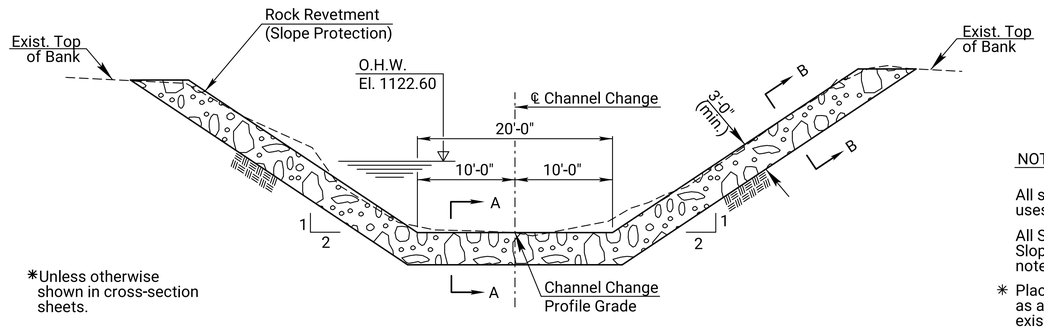
Section A-A
Sta. 2+70 and 6+50



Section B-B
Sta. 2+70, 3+50, 4+25, 5+00 and 6+50



Channel Section at Tieback
Sta. 3+50, 4+25 and 5+00
(See XS sheets for details)



✳Unless otherwise shown in cross-section sheets.

GRADE CONTROL DETAILS
Sta. 2+70 and Sta. 6+50

NOTES

All stationing and location information on this sheet uses proposed channel centerline unless otherwise noted

All Slope Protection on this sheet shall meet gradation for Slope Protection (Riprap Stone)(1/4Ton) unless otherwise noted.

✳ Place Slope Protection to limits shown on plans, or to limits as approved by the Engineer. Adjust in field to match existing conditions at time of construction at the direction of the Engineer.

LPSTP = Longitudinal Peak Stone Toe Protection

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

CHANNEL ARMORING DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	ECM
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	34	118

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

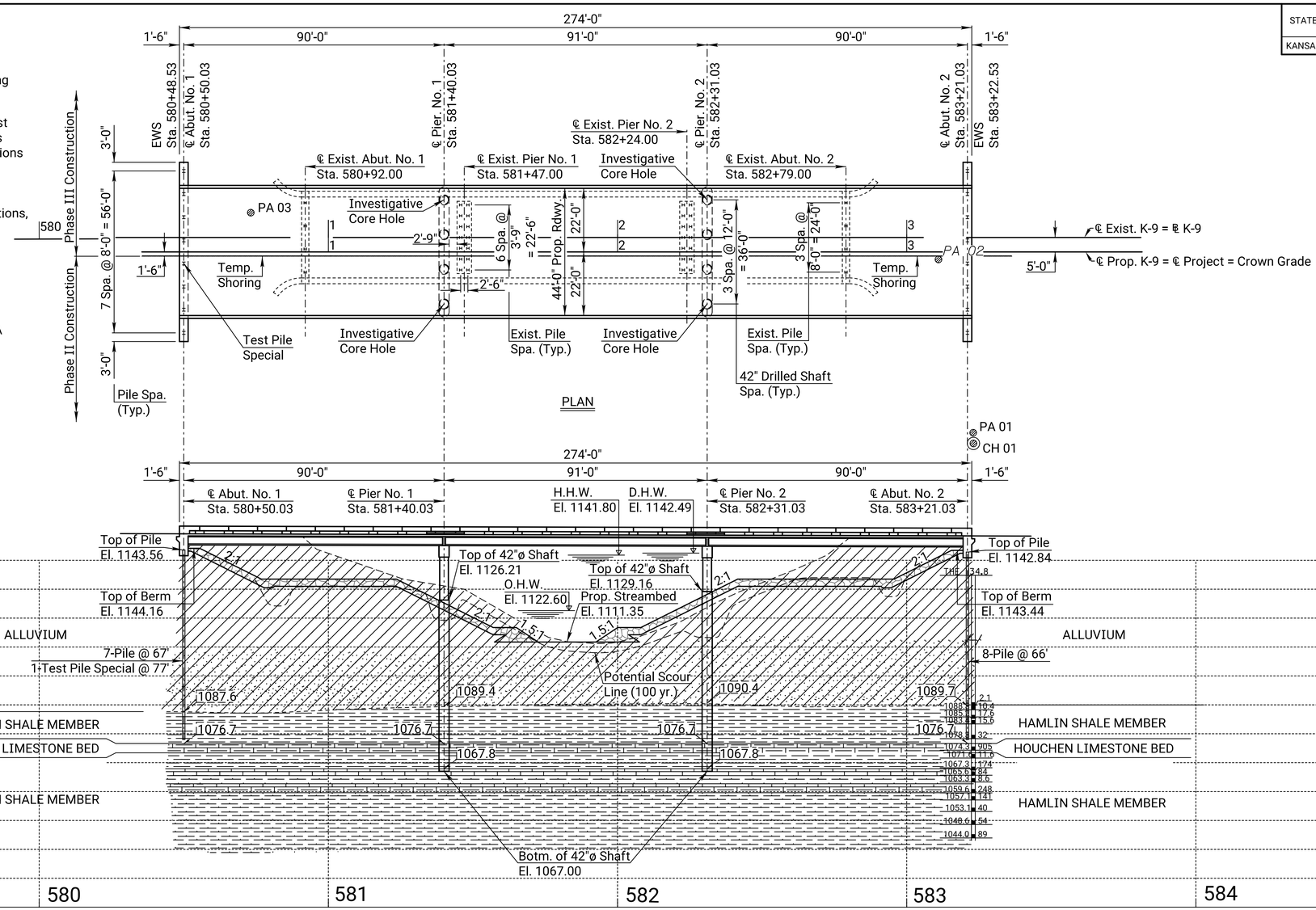
PILING: Once sufficient resistance is achieved, driving must cease to avoid damage to the pile. Final pile tip elevations shpuld be determined in the field based on recommendations provided through the use of the Pile Driver Analyzer.

Do not drive pile below plan tip elevation without utilizing restrike procedures as outlined in the Standard Specifications, or as directed by KDOT Geology.

TEST PILING: Plase 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 sould be performed prior to PDA testing. At least 24 hours for each test should be allowed to account for possible restrikes.

Use Gr. 50 HP 12x63 pile with Cast Steel Points only.



STANDARD GEOLOGIC SYMBOLS

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

SOUNDINGS

Core drill
Power auger
Hand tools
Cone (CPT) penetrometer
Shelby tube
Water level 03/2024

GEOLOGIC PROFILE

000.0 Elevation interpolated or from adjacent soundings
000.0 Actual sounding elevation

UNCONFINED COMPRESSION TEST
Elevation Tons/sq. ft.
000.0 00
000.0 00

STANDARD PENETRATION TEST
Elevation Blows/ft.
000.0 00
000.0 00

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

Scale 1" = 20 ft.

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. 9-58-240.51 (075) Sta. 581+85.53

ENGINEERING GEOLOGY
K-9 over Robidoux Creek

Proj. 9-58 KA-5761-01 Marshall Co.

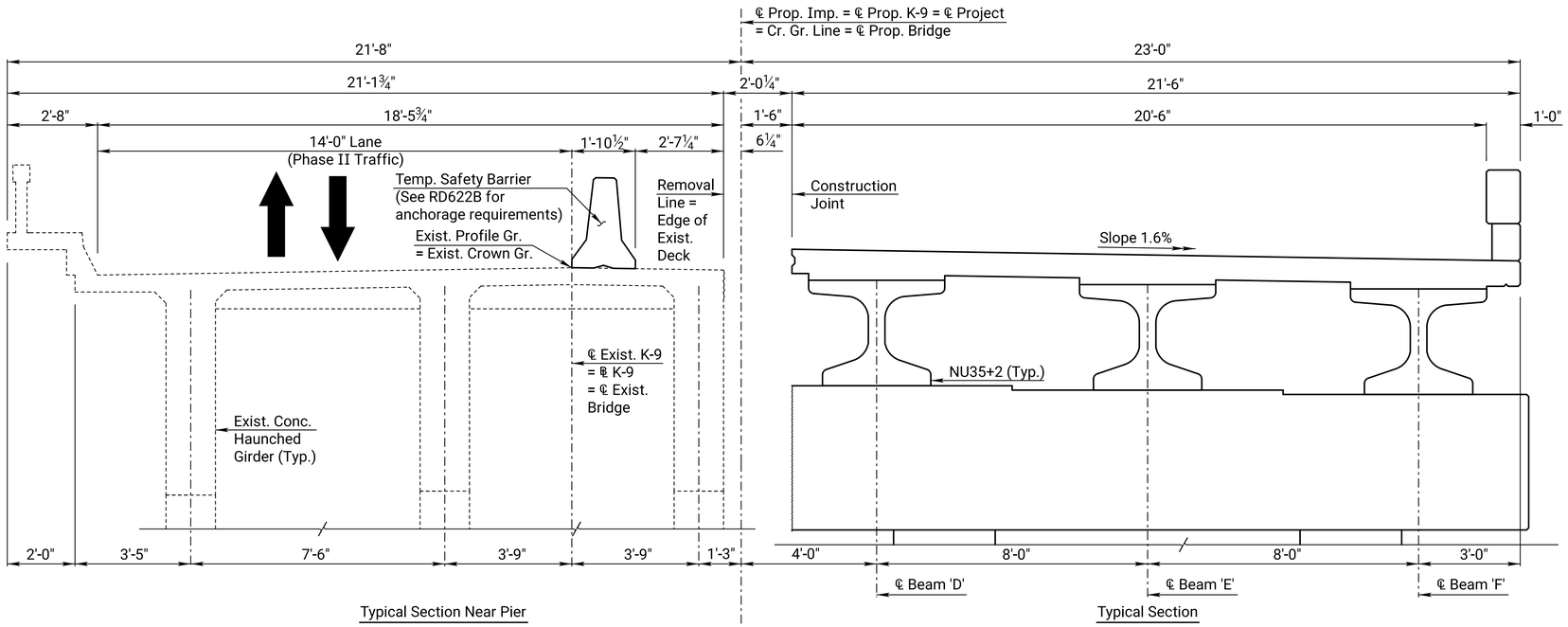
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KDOT Graphics Certified

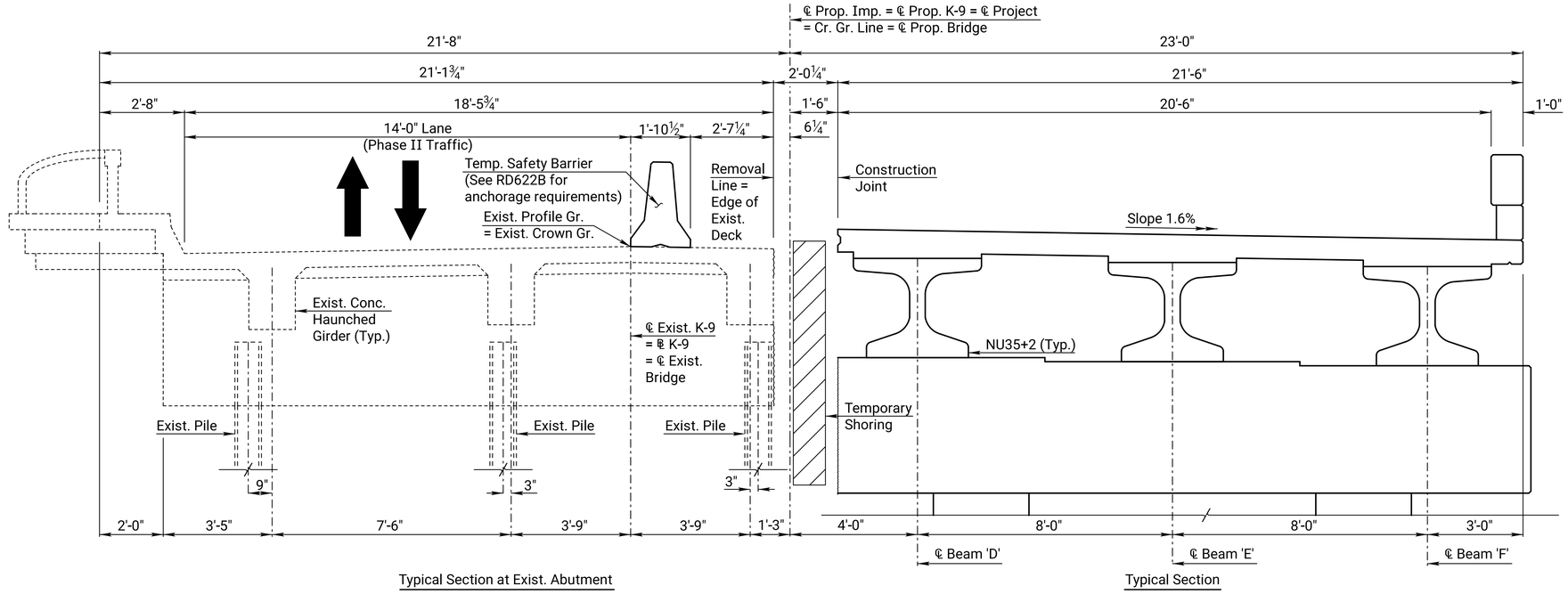
Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:33
File : ka576101bbr0075-006 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	35	118



TYPICAL SECTION NEAR EXISTING PIER DURING PHASE II CONSTRUCTION

(Looking East)



TYPICAL SECTION AT EXISTING ABUTMENTS DURING PHASE II CONSTRUCTION

(Looking East)

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

PHASE II CONSTRUCTION
K-9 over Robidoux Creek

Proj. 9-58 KA-5761-01 Marshall Co.

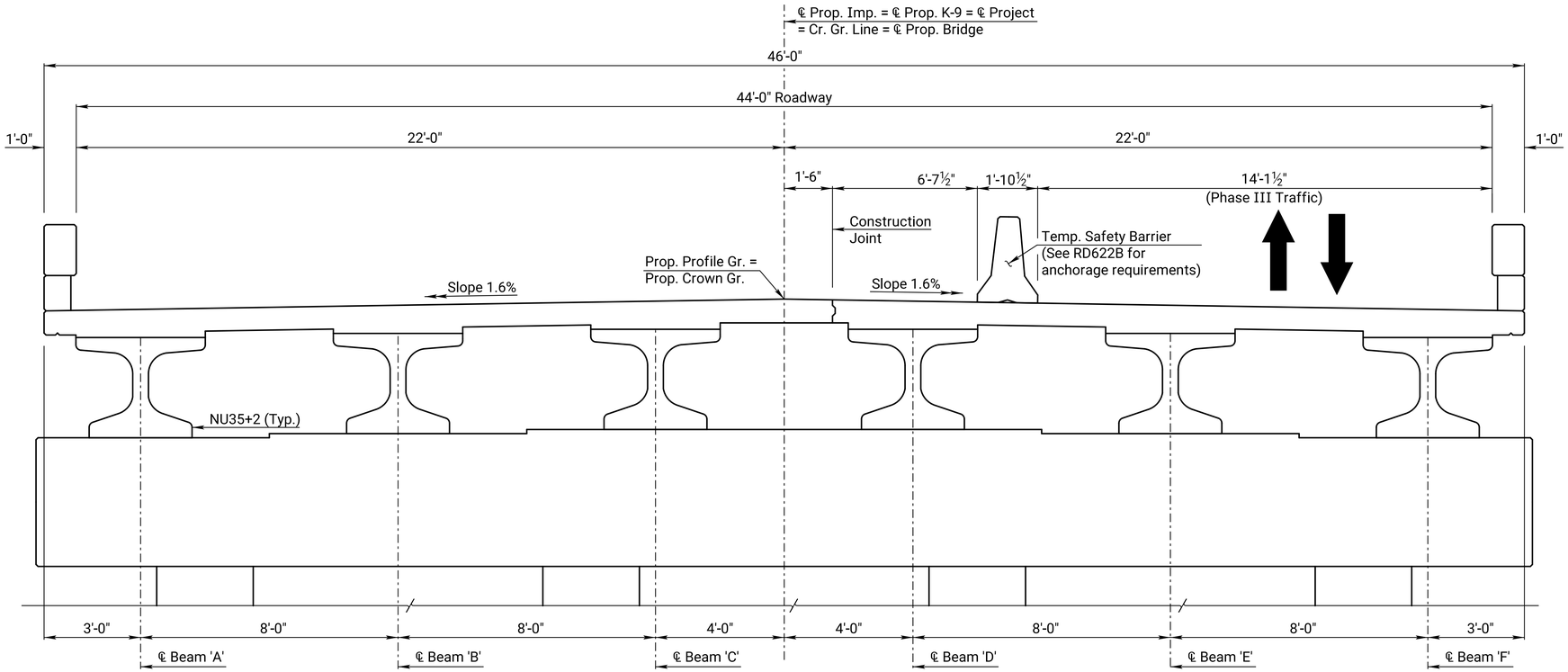
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File : ka576101bbr0075-007 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	36	118



TYPICAL SECTION DURING PHASE III CONSTRUCTION

(Looking East)

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

PHASE III CONSTRUCTION
K-9 over Robidoux Creek

Proj. 9-58 KA-5761-01 Marshall Co.

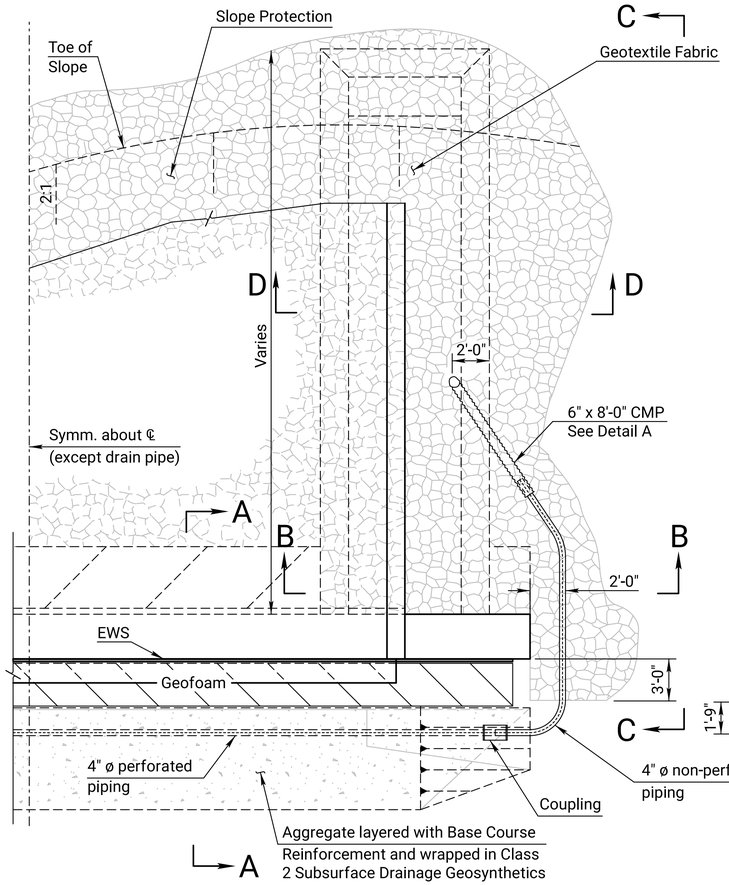
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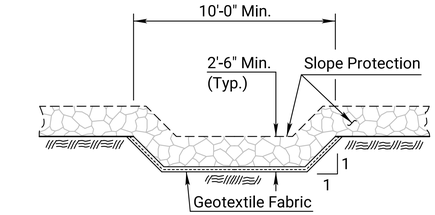
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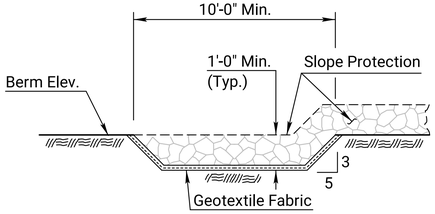
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	37	118



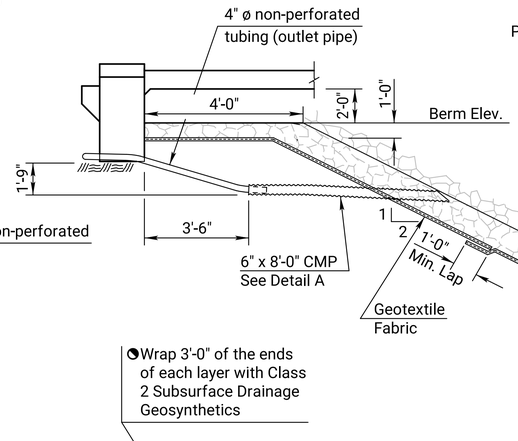
PLAN



SECTION D-D

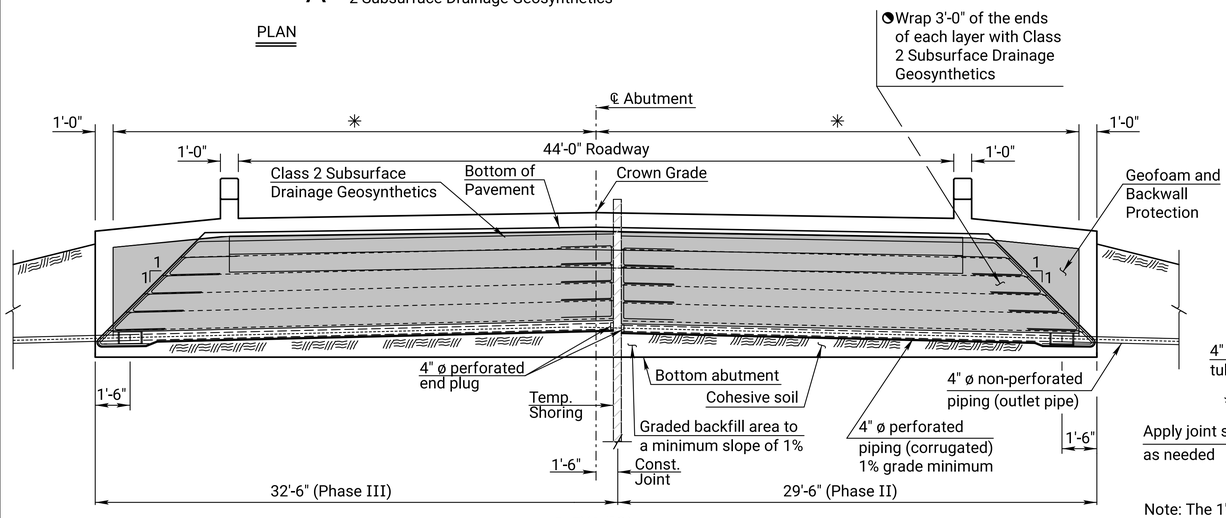


SECTION B-B



SECTION C-C

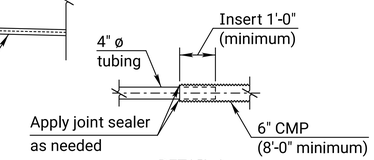
Note: The toe shall extend the entire width of the Slope Protection.



ELEVATION

✳ Limits of Bridge Backwall Protection System & Geofoam

◔ Use if material cannot be shaped and compacted per plan.



DETAIL A

Note: The 1'-0" lap and joint sealer may be replaced by a reducing coupler at the junction of the CMP and the 4" round tubing. For stream crossings place outlet on downstream side of bridge.

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.

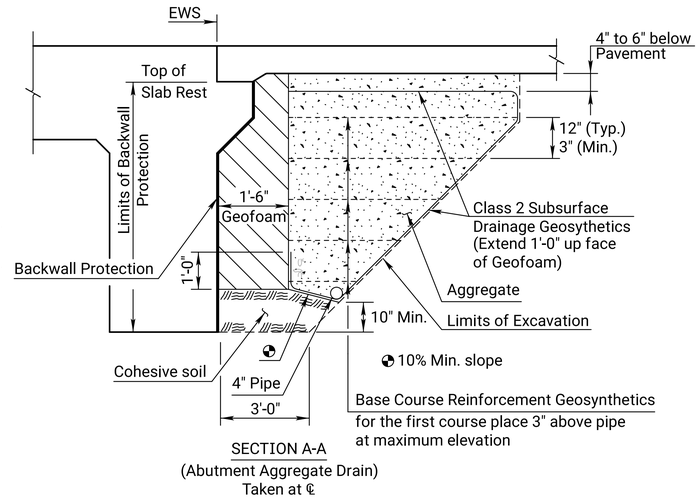
BRIDGE BACKWALL PROTECTION SYSTEM: Apply a non coal-tar Bridge Backwall Protection System to the approach side of the abutments and the wings in accordance with KDOT Specifications and the manufacturer's recommendations. Cover the abutments and wings to the limits shown on the details. Repair any damage 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.



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

SUMMARY OF QUANTITIES (2 Abutments)	
Abutment Aggregate Drain	122 Cu. Yds.
Bridge Backwall Protection System	78 Sq. Yds.
Items subsidiary to Abutment Aggregate Drain	
4" ø Perforated Pipe	118 Lin. Ft.
4" ø Outlet Pipe	36 Lin. Ft.
6" ø CMP	32 Lin. Ft.
Geosynthetics (Class 2 Subsurface Drainage)	370 Sq. Yds.
Geosynthetics (Base Course Reinforcement)	389 Sq. Yds.
Geofoam	29 Cu. Yds.
Items subsidiary to Slope Protection	
Geotextile Fabric	125 Sq. Yds.

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

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

ABUTMENT AGGREGATE DRAIN
(Stream, Drip-Line)

Proj. 9-58 KA-5761-01 Marshall Co.

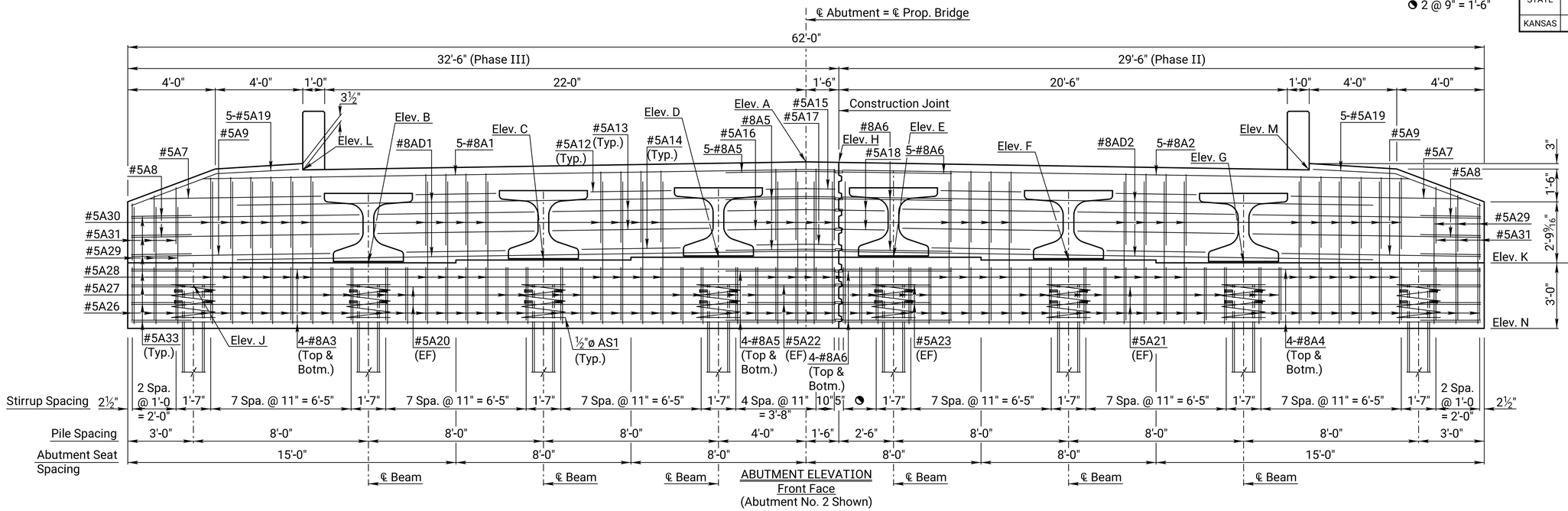
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DESIGN CK.		DETAIL CK.		QUAN.CK.		CADD CK.	

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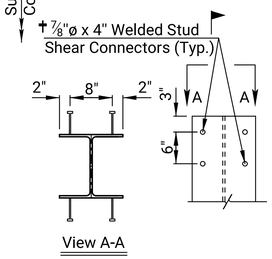
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File : ka576101bbr0075-009.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	38	118



	Profile Grade	Bearing Seat Elevations						Constr -uction Joint	Top of Pile	Top of Abutment Beam	Edge of Deck		Bottom of Abut. Beam
		Bm 'A'	Bm 'B'	Bm 'C'	Bm 'D'	Bm 'E'	Bm 'F'						
	A	B	C	D	E	F	G	H	J	K	L	M	N
Abut. #1	1149.18'	1144.56'	1144.69'	1144.81'	1144.81'	1144.69'	1144.56'	1149.16'	1143.56'	1144.56'	1148.81'	1148.81'	1141.56'
Abut. #2	1148.46'	1143.84'	1143.97'	1144.09'	1144.09'	1143.97'	1143.84'	1148.44'	1142.84'	1140.84'	1148.09'	1148.09'	1140.84'



PILE STUD SHEAR CONNECTOR DETAIL

† Welded Stud Shear connectors are subsidiary to HP12X63 Steel Piles

LEGEND
EF = Each Face

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

ABUTMENT DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	AJH
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

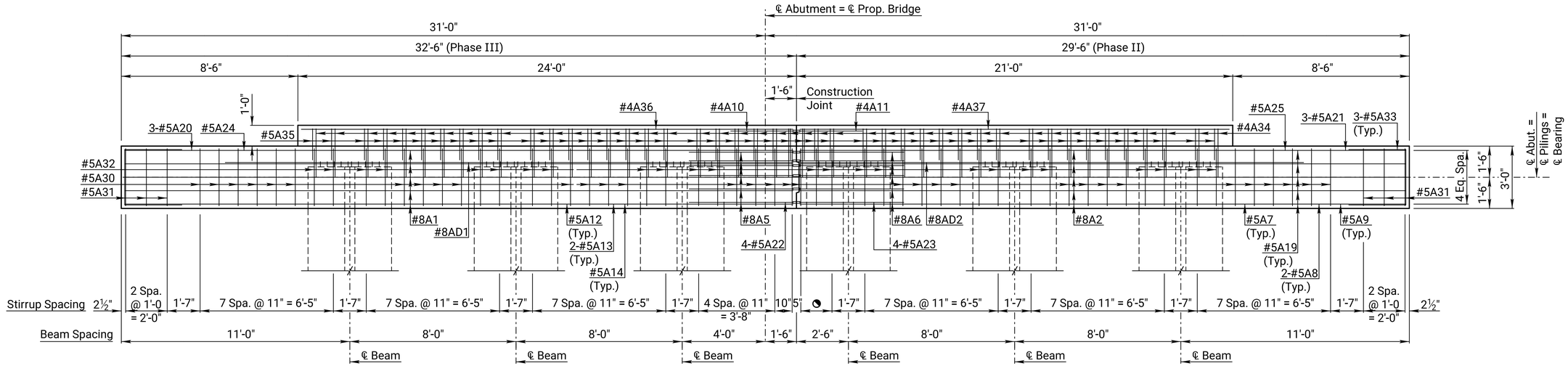
KDOT Graphics Certified 10-15-2025 Sh. No. 38

KDOT Graphics Certified

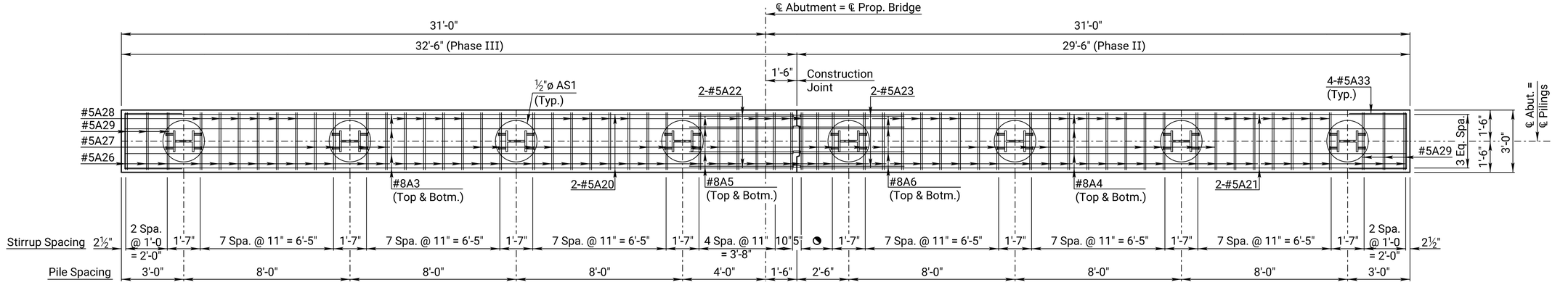
Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:33
File : ka576101bbr0075-010 (CONFORMED).dgn

◔ 2 @ 9" = 1'-6"

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	39	118



ABUTMENT PLAN
Abutment Diaphragm
(Abutment No. 2 Shown)



ABUTMENT PLAN
Abutment Beam
(Abutment No. 2 Shown)

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

ABUTMENT DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

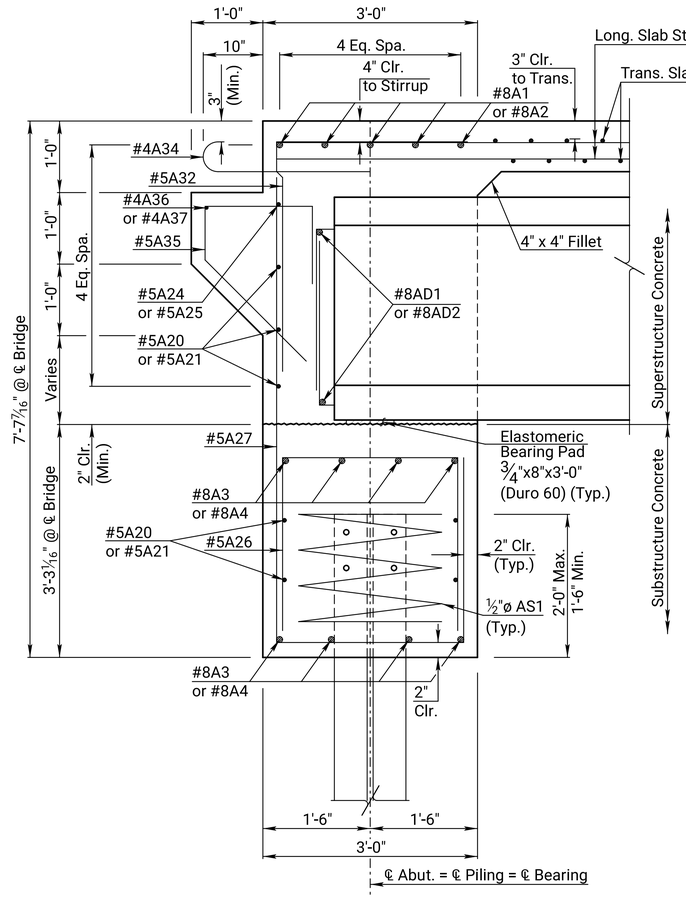
DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	AJH
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

KDOT Graphics Certified 10-16-2025 Sh. No. 39

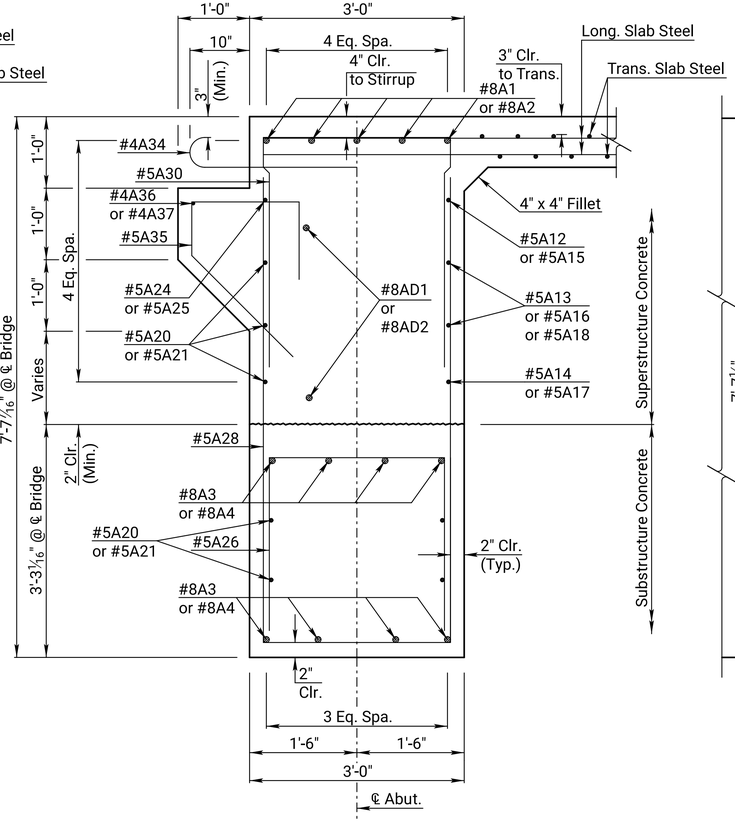
KDOT Graphics Certified

Plotted by: Andrew.Haase@ks.gov 16-OCT-2025 14:33
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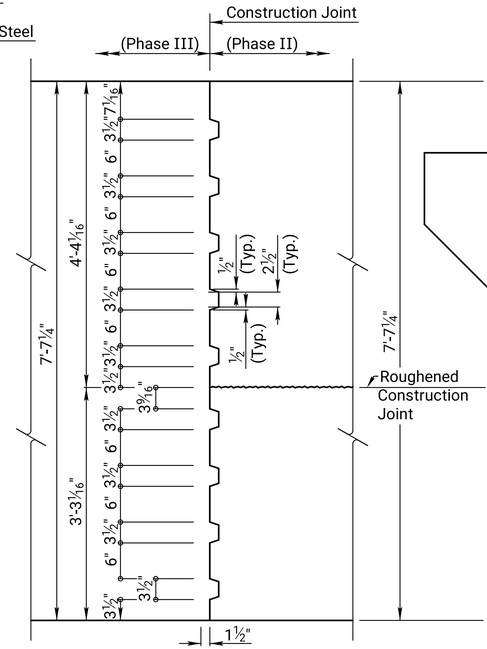
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	40	118



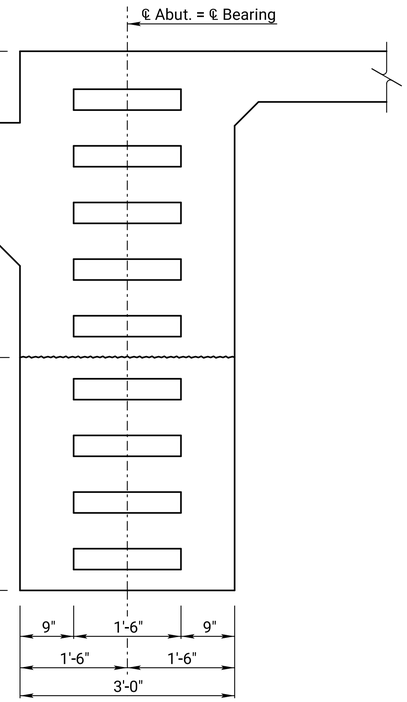
ABUTMENT SECTION
Near Beam



ABUTMENT SECTION
Between Beams

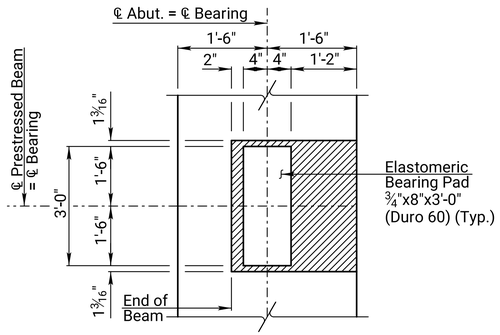


Abutment Elevation



Abutment Section

ELEVATION CONSTRUCTION JOINT



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".

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

ABUTMENT DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

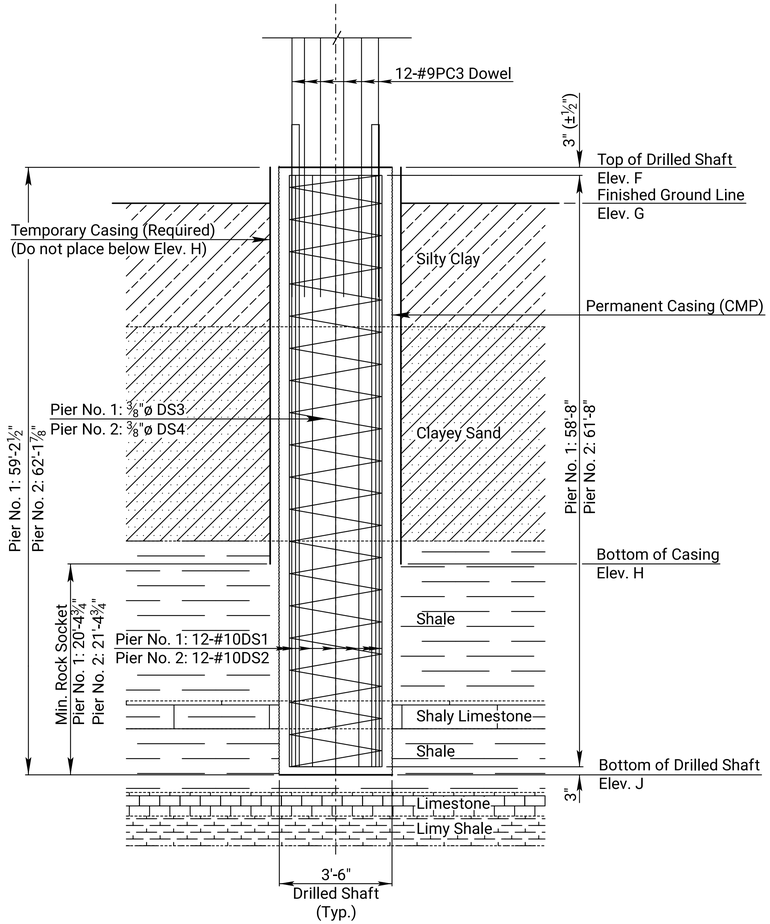
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DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

KDOT Graphics Certified 10-15-2025 Sh. No. 40

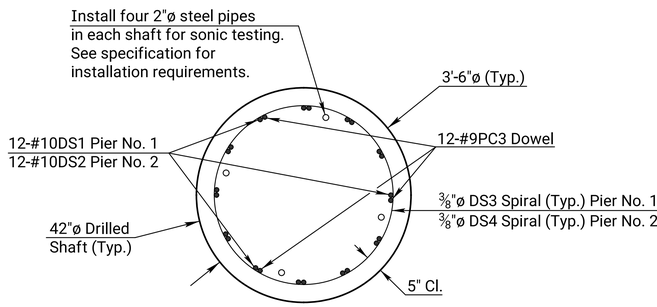
KDOT Graphics Certified

Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:33
File : ka576101bbr0075-012 (CONFORMED).dgn

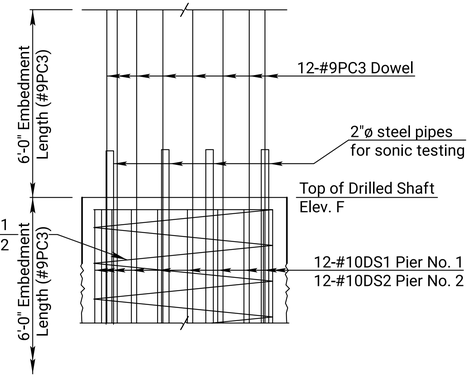
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	41	118



TYPICAL ELEVATION VIEW OF DRILLED SHAFT
PIER NO. 1 & 2



TYPICAL SECTION OF DRILLED SHAFT



DETAIL OF DRILLED SHAFT DOWEL BARS

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 42" (Cased)". Use Grade 4.0 Concrete in the drilled shaft. In no instance shall the bottom of the drilled shaft be placed higher than the elevation shown unless otherwise directed by the KDOT Geologist.

Excavations for drilled shafts will need to be cased. Water movement within the mantle could cause caving and collapse of the excavation walls. Casing will be required for drilled shafts. Casing will need to be set into bedrock no lower than the elevation given in the design table to reduce the risk that over burden and groundwater of entering the rock socket. A wetpour may be anticipated if groundwater is not sufficiently sealed off or if there is water flowing into the excavation from formation.

Note that both side and base resistance are used, therefore, 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.

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

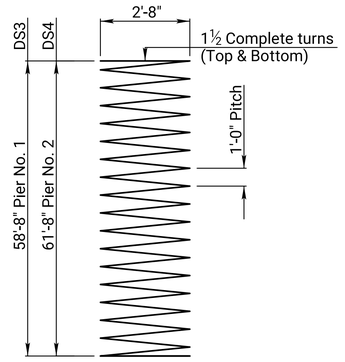
PERMANENT CASING: See KDOT Specifications.

ELEVATION TABLE		
Location	Pier No. 1	Pier No. 2
Top of Shaft Elev. F	1126.21'	1129.16'
Ground Line Elev. G	1125.27'	1128.22'
Bottom of Casing Elev. H	1087.40'	1088.40'
Bottom of Shaft Elev. J	1067.00'	1067.00'

BILL OF REINFORCING STEEL
Grade 60 Non-Epoxy
Total for Pier No. 1 & 2
Subsidiary to Drilled Shafts
Shown for Information Only

Mark	Size	Number	Length
DS1	#10	48	58'-8"
DS2	#10	48	61'-8"
DS3	⅜"ø	4	††
DS4	⅜"ø	4	††

†† See Bending Diagram



DS3 & DS4

(⅜"ø smooth or deformed bar)

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

Spiral Spacer Bars:

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

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

DRILLED CHAFT DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	AJH
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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KDOT Graphics Certified

Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:34
File : ka576101bbr0075-013 (CONFORMED).dgn

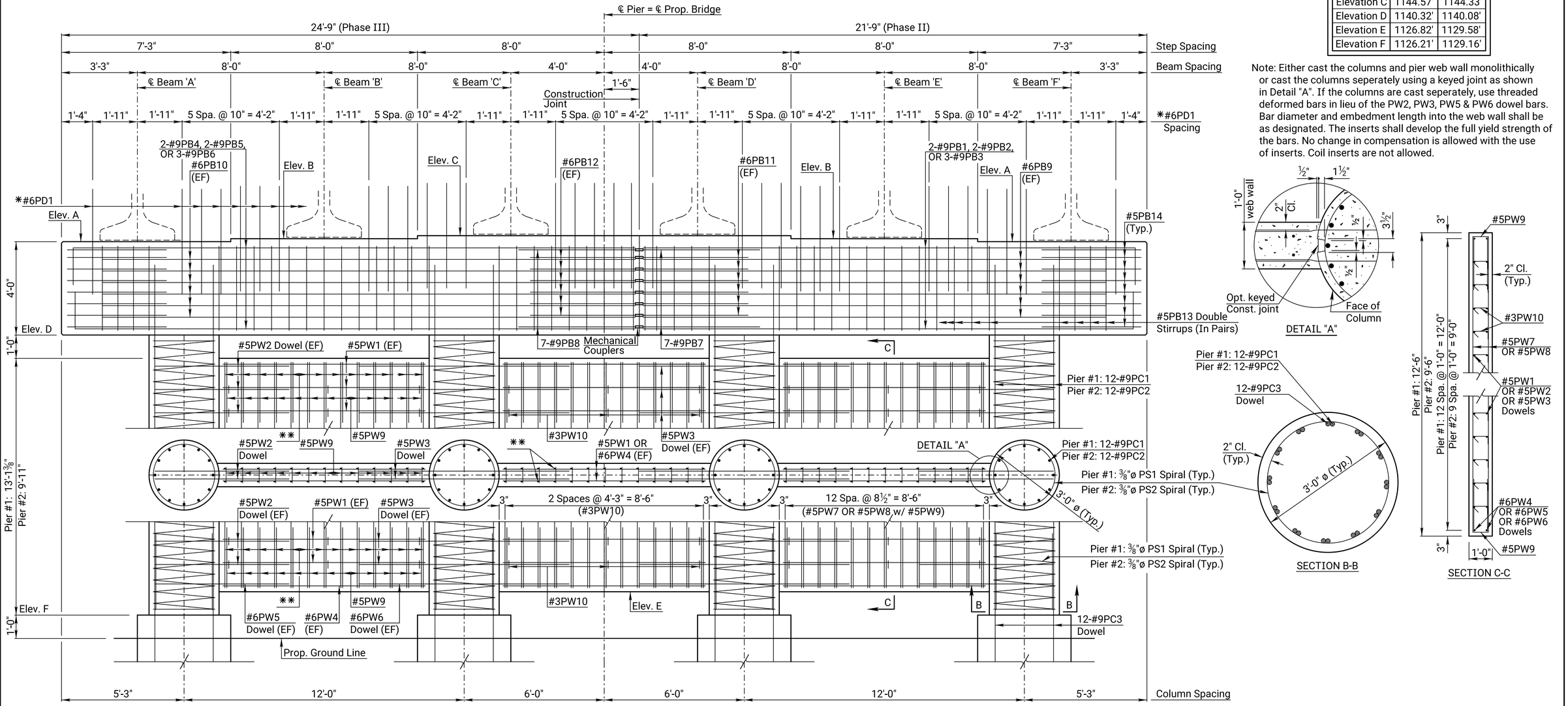
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	42	118

*#6PD1 Extends 2'-3" into Pier Diaphragm & Pier Beam

**Pier #1: #5PW7 (EF)
Pier #2: #5PW8 (EF)

ELEVATION TABLE		
Location	Pier #1	Pier #2
Elevation A	1144.32'	1144.08'
Elevation B	1144.45'	1144.21'
Elevation C	1144.57'	1144.33'
Elevation D	1140.32'	1140.08'
Elevation E	1126.82'	1129.58'
Elevation F	1126.21'	1129.16'

Note: Either cast the columns and pier web wall monolithically or cast the columns seperately using a keyed joint as shown in Detail "A". If the columns are cast seperately, use threaded deformed bars in lieu of the PW2, PW3, PW5 & PW6 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.



ELEVATION OF PIER

DETAIL "A"

SECTION B-B

SECTION C-C

LEGEND
EF = Each Face

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

PIER DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

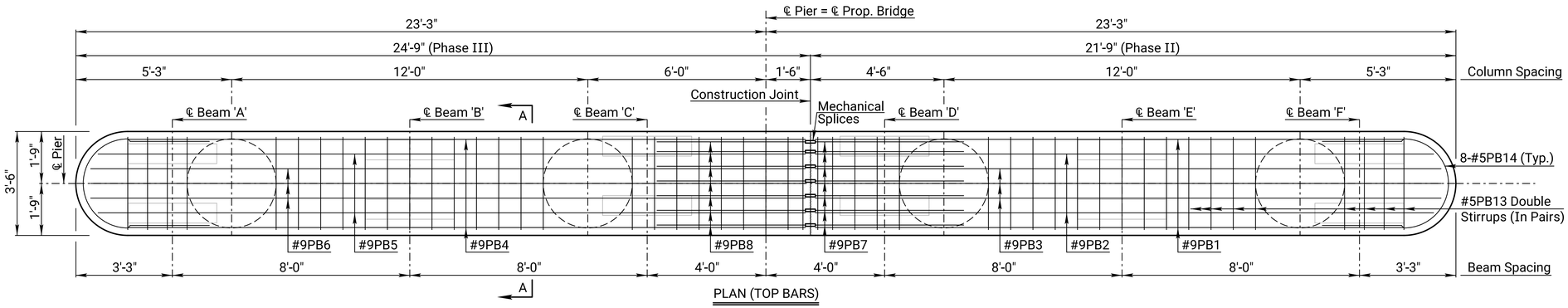
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KDOT Graphics Certified 10-15-2025 Sh. No. 42

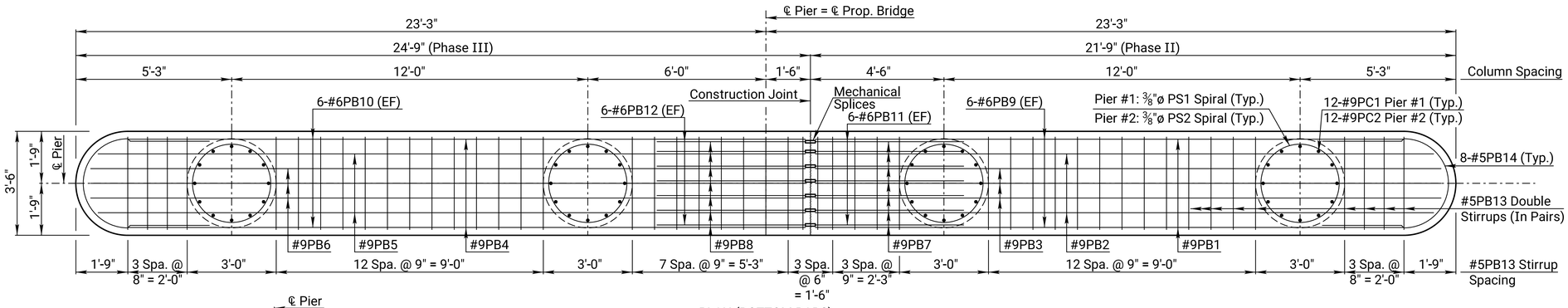
KDOT Graphics Certified

Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:34
File : ka576101bbr0075-014 (CONFORMED).dgn

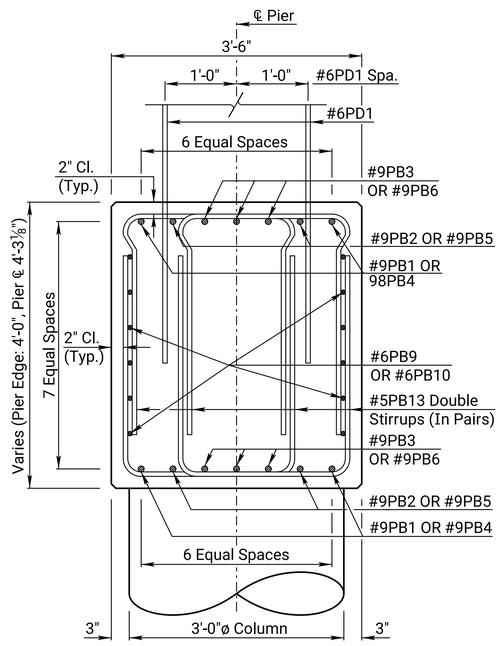
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	43	118



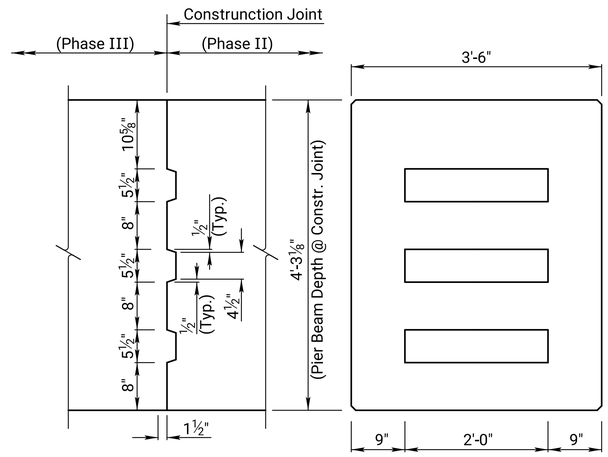
PLAN (TOP BARS)



PLAN (BOTTOM BARS)



PIER BEAM TYPICAL



SHEAR KEY AT PIER BEAM JOINT

LEGEND
EF = Each Face

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

PIER DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

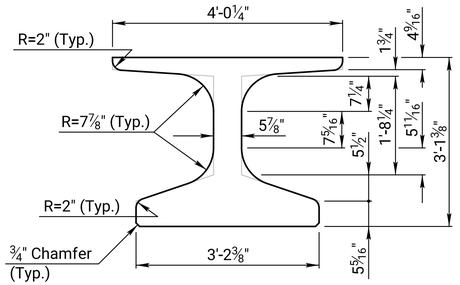
DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	AJH
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

KDOT Graphics Certified 10-15-2025 Sh. No. 43

KDOT Graphics Certified

Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:34
File : ka5761101bbr0075-015 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	44	118



TYPE NU35+2

Area	744.7 in.²
IcG	144,993 in.⁴
Y Bot	18.75 in.
Vol./Surf. Area	3.50 in.
Wt./Ft.	776 lbs

TYPICAL BEAM SECTION

(Dimensions and properties are converted from metric fabrication forms.)

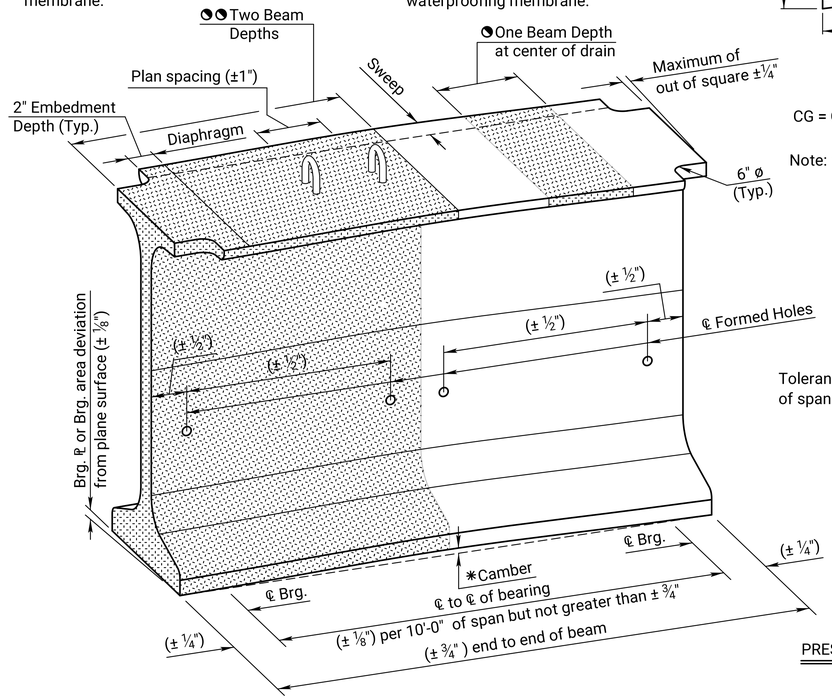
✳ Prior to shipping, the camber shall be no greater than the design camber +½". The design camber is equal to the 50 day camber shown in the plans.

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

◔◔ Two Beam Depths

◔ One Beam Depth at center of drain

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

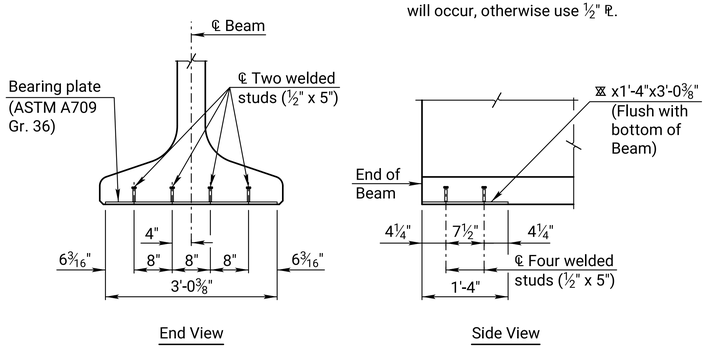


PRESTRESSED BEAM FABRICATION TOLERANCES

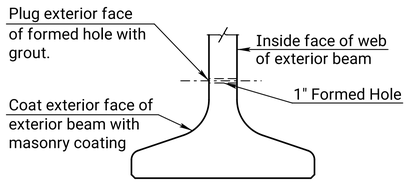
Note: Tolerance for camber is 1" maximum variation in camber between adjacent beams; and ±⅛" per 10'-0" of span deviation from the specified camber but not greater than ±1" deviation.

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

⧖ Use ¾" ℙ when field welding will occur, otherwise use ½" ℙ.

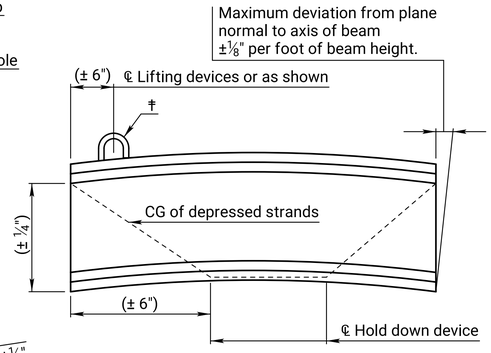


BEARING PLATE DETAILS



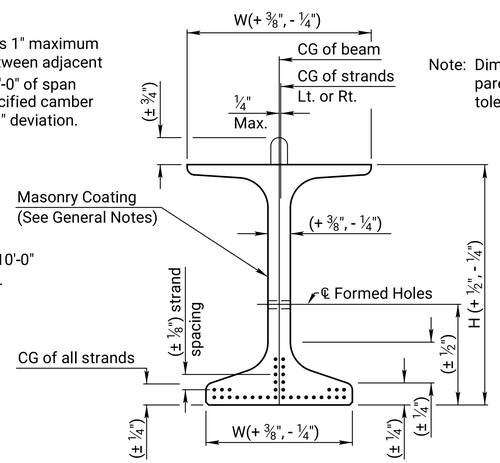
DETAIL OF FORMED HOLE(S)

(See Beam Detail sheet for locations)



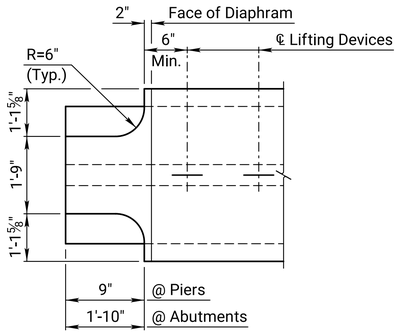
ELEVATION

CG = Center of Gravity



TYPICAL SECTION

Note: Dimensions shown in parentheses are tolerances only.



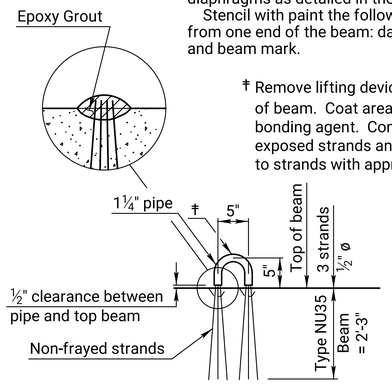
TOP FLANGE BLOCKOUT DETAIL

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".



LIFTING DEVICE

(Two required at each end)

(Fabricator to verify)

‡ 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.

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 = 8,000psi and f'c at release = 6,500psi.

Use reinforcing steel conforming to the requirements of ASTM A615, Grade 60. The reinforcing steel shown shall be uncoated unless otherwise indicated. Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Use 0.60" 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.

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 43,900 pounds to each strand. Stress harped strands to a magnitude such that they are tensioned to 43,900 pounds after they are in position.

The center portion of the girder top flange shall be rough finished by scarlfying the surface transversely with a wire brush or stiff broom and no laitance shall remain on the surface. The outside 9" on each side of the top flange shall be steel troweled to a smooth finish and a bond breaker shall be applied to this region only. Bond breaker shall be 30# roofing felt. Secure roofing felt to the top flange with an adhesive approved by the Engineer.

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
01	09-11-18	Current Release	M.L.L.	J.P.J.

KANSAS DEPARTMENT OF TRANSPORTATION

STANDARD PRESTRESSED CONCRETE BEAM DETAILS NU35+2

BR340

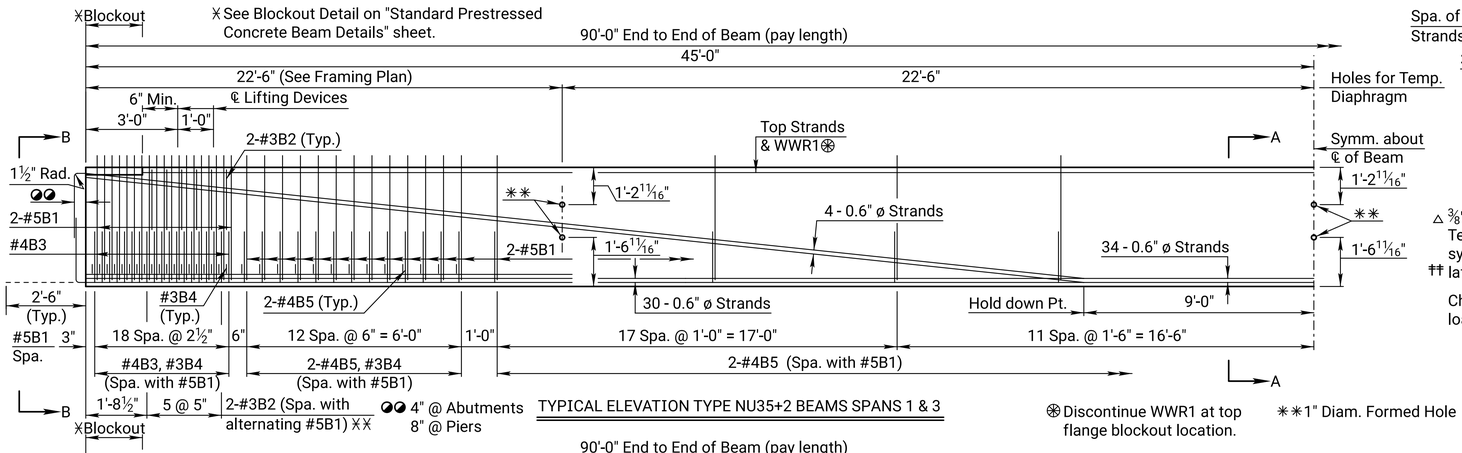
FHWA APPROVAL		09-11-18	APP'D.	John P. Jones	
DESIGNED	DETAILED	M.L.L.	QUANTITIES	TRACED	M.L.L.
DESIGN CK.	DETAIL CK.	S.G.B.	QUAN.CK.	TRACE CK.	S.G.B.

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File : ka576101bbr0075-016.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	45	118

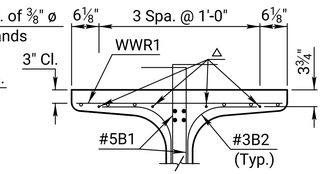


◎◎ 4" @ Abutments
8" @ Piers

TYPICAL ELEVATION TYPE NU35+2 BEAMS SPANS 1 & 3

⊛ Discontinue WWR1 at top flange blockout location.

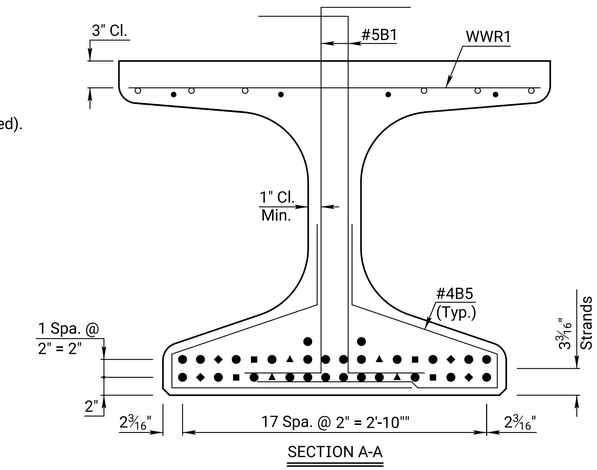
✳✳ 1" Diam. Formed Hole



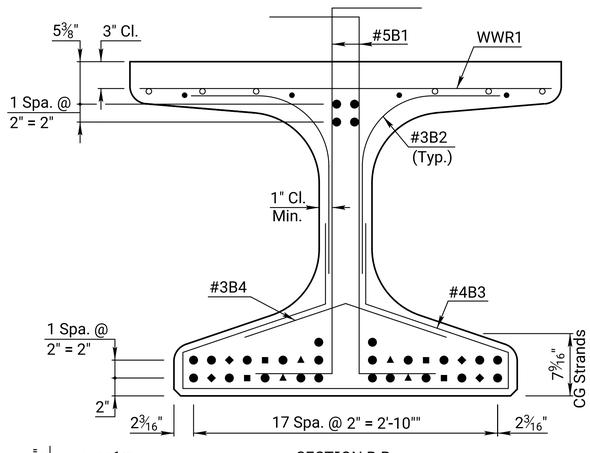
†† TOP FLANGE DETAIL

△ ⅜" Dia. reinforcement support strands (required). Tension to 2.0 kips/strand and place symmetrical about ℄ beam. May be moved laterally in pairs to maintain symmetry.

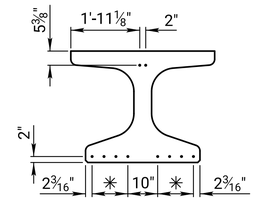
†† Check flange for Overhang Bracket loads where applicable.



SECTION A-A



SECTION B-B

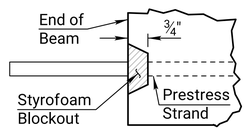


STRAND EXTENSION DETAIL

✳ 3 Spa. @ 4"

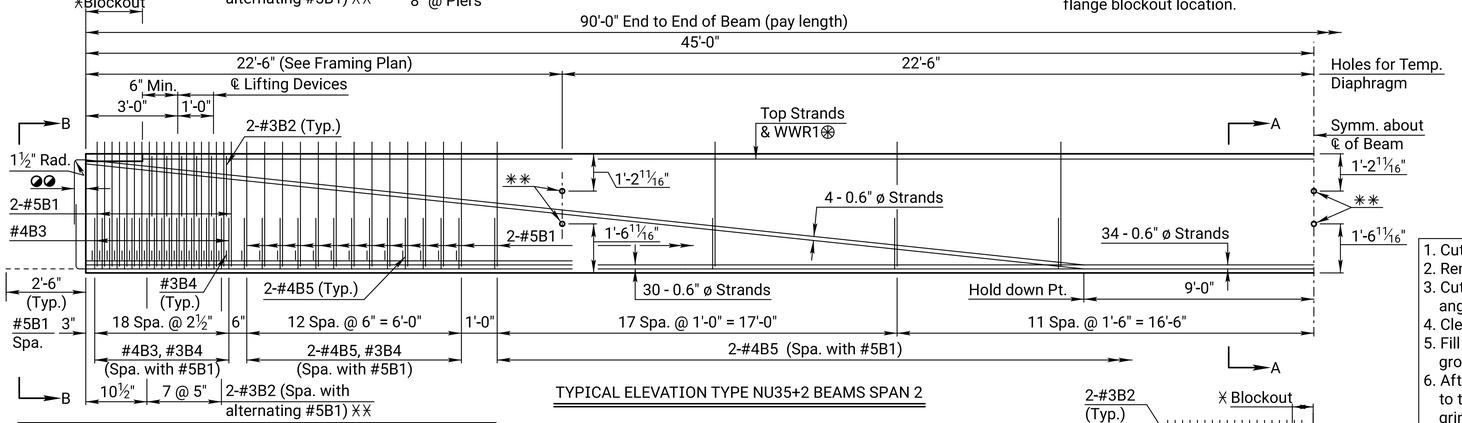
Debonding Length
▲ 5'-0"
■ 10'-0"
◆ 15'-0"

✳✳✳ PROCEDURE FOR SEALING PRESTRESS BEAM ENDS

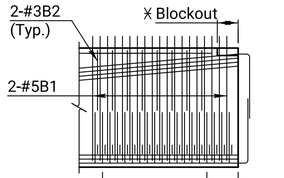


1. Cut strands 9" from the end of the beam.
2. Remove Styrofoam blockout.
3. Cut strands 1/2" deep in blockout with angle grinder.
4. Clean affected area.
5. Fill blockout area with approved epoxy grout.
6. After the grout has cured, according to the manufacturer's recommendation, grind entire face of beam to provide a smooth surface.
7. After waiting 28 days, clean the entire surface of beam end and apply an approved (epoxy-epoxy) Substructure Waterproofing Membrane.

✳✳✳ Only for exposed Prestress Beam ends with all strands removed at expansion joints.



TYPICAL ELEVATION TYPE NU35+2 BEAMS SPAN 2



ELEVATION PIER END
(Spacing of #3B2 bar)

✕✕ Spacing of #3B2 bar @ Abutment End.

NOTE: Extend 10 strands 2'-6" beyond the end of the beam. Strands not shown shall be cut flush with the end of the beam. See "Strand Extension Details."

NOTE: During transportation and construction only, support beams on bearing points a maximum of 6'-0" 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 4 strands at 43.9 kips per strand = 11.4 kips total.

† 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

† 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 to 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.

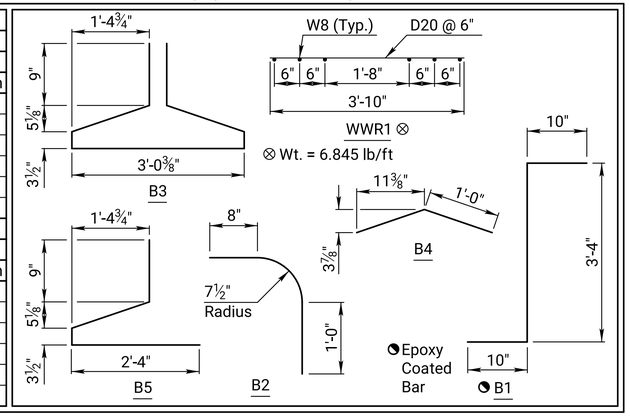
BILL OF REINFORCING STEEL

90'-0" Beam (1 Listed-12 Reqd.) (End spans)

Straight bars				Bent bars			
Mark	No.	Size	Length	Mark	No.	Size	Length
				B2	28	#3	2'-8"
				B4	64	#3	2'-0"
				B3	38	#4	7'-8"
				B5	166	#4	4'-8"
				◔ B1	242	#5	5'-0"

90'-0" Beam (1 Listed-6 Reqd.) (Interior spans)

Straight bars				Bent bars			
Mark	No.	Size	Length	Mark	No.	Size	Length
				B2	32	#3	2'-8"
				B4	64	#3	2'-0"
				B3	38	#4	7'-8"
				B5	166	#4	4'-8"
				◔ B1	242	#5	5'-0"



BILL OF MATERIAL

Item	Unit	Quantity
Prestressed Concrete Beams (NU35+2) End Spans (90'-0")	Lin.Ft.	1,080
Prestressed Concrete Beams (NU35+2) Interior Spans (90'-0")	Lin.Ft.	540
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= 8,000 PSI) (per beam)	Cu.Yds.	17.2
Approx. Wt. per 90'-0" beam	Tons	34.9
0.6" ø Prestressing strand (270 KSI low relaxation fy= 243 KSI)	Lin.Ft.	62,471
Epoxy reinforcing steel (fy=60,000 PSI)	Lbs.	22,717
Reinforcing steel (fy=60,000 PSI)	Lbs.	14,213
Welded Wire Reinforcement (fy=70,000 PSI)	Lbs.	10,815
Elastomeric Brg. pads (¾"x8"x3'-0")	Each	36
1" Formed Holes	Each	108
Lifting devices	Each	72
Bearing plates (✡x 1'-4" x 3'-0⅜")	Each	36
Substructure Waterproofing Membrane	Sq. Yds.	0

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

NO.	DATE	REVISIONS	BY	APP'D
04	01-27-22	Temporary Diaphragm table update	M.L.L.	M.A.H.
03	03-14-19	Corrected shear bar	M.L.L.	J.P.J.
02	11-15-18	Add WWR to Bill of Material & Wt/ft	M.L.L.	J.P.J.

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+83.53

NU35+2 BEAM DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

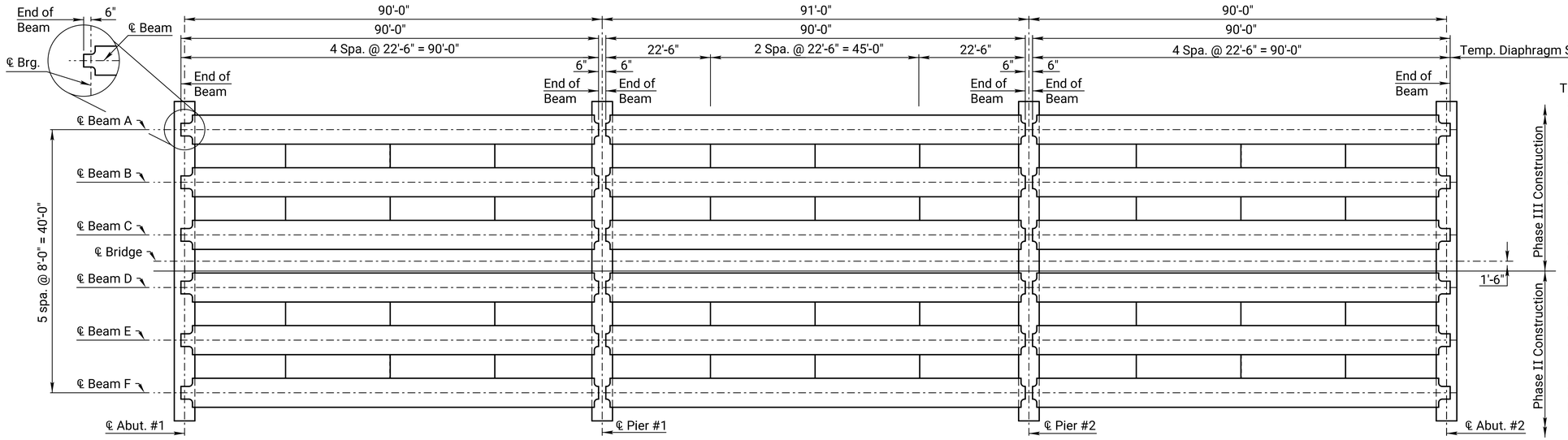
DESIGNED		DETAILED	M.L.L.	QUANTITIES		CADD	M.L.L.
DESIGN CK.		DETAIL CK.	S.G.B.	QUAN.CK.		CADD CK.	S.G.B.

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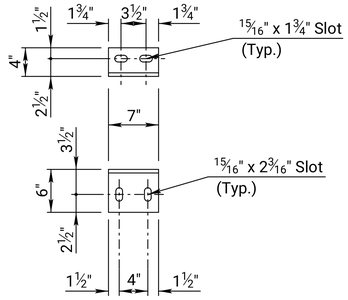
Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:31
File : ka576101bbr0075-017.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	46	118



FRAMING PLAN

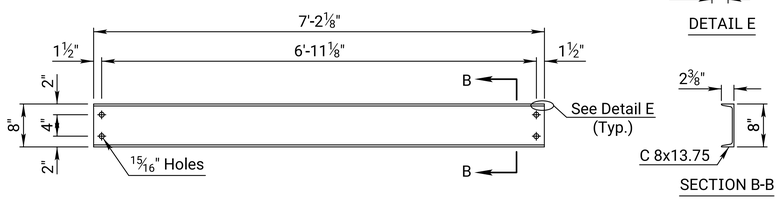
TEMPORARY DIAPHRAGMS: Use ASTM A709 Gr. 36 steel for all angles and bent plates for temporary diaphragms. All bolts, nuts, and washers for fasteners shall conform to the heavy hex structural requirements of ASTM F3125 Gr. A325, Type 1. Galvanize the angles, bolts, nuts, and washers in accordance with the KDOT Specifications. Use hardened steel washers over any oversized holes. Use $\frac{5}{16}$" 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".



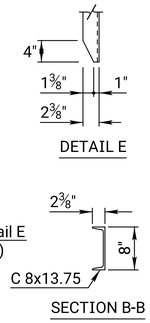
7" CONNECTION ANGLE
(90 each Req'd.)
(Weight = 9.45 Lb. each)

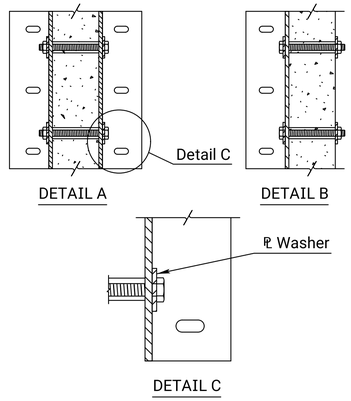
TYPICAL SECTION

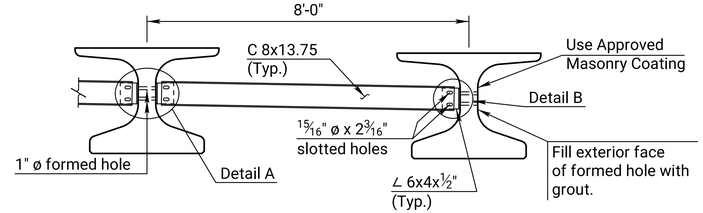
CONNECTION ANGLE DETAILS
(or equivalent)



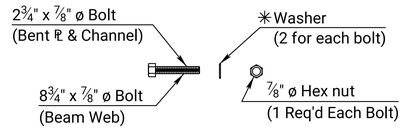
TEMPORARY DIAPHRAGM
(or equivalent)







ELEVATION OF TEMPORARY DIAPHRAGMS



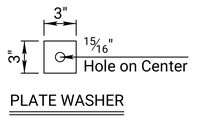


PLATE WASHER

✳ Plate washers required for slotted holes.

FASTENER DETAILS

NO.	DATE	REVISIONS	BY	APP'D
03	01-27-22	Temporary Diaphragm table update	M.L.L.	M.A.H.
02	02-05-19	Galvanizing clarification	M.L.L.	J.P.J.
01	09-11-18	Current Release	M.L.L.	J.P.J.

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+83.53

TEMPORARY DIAPHRAGM DETAILS
NU GIRDERS

Proj. 9-58 KA-5761-01 Marshall Co.

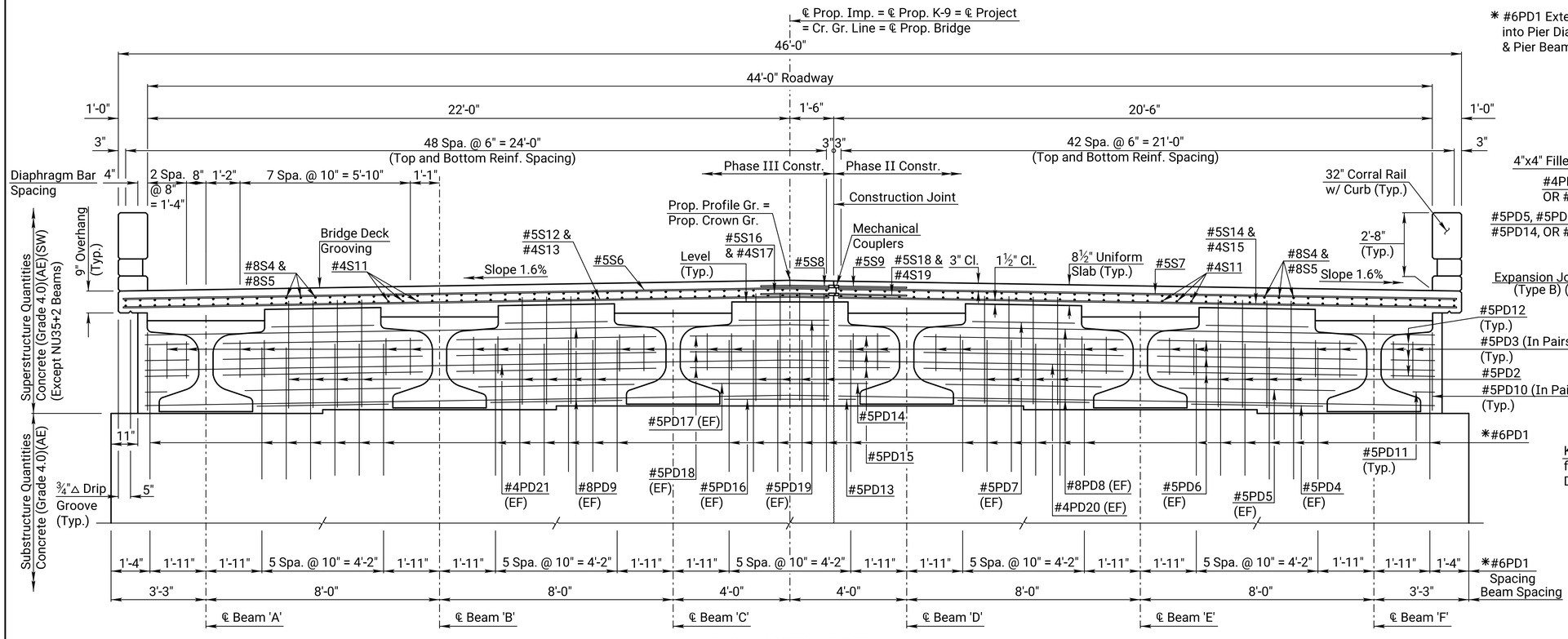
DESIGNED		DETAILED	M.L.L.	QUANTITIES		CADD	M.L.L.
DESIGN CK.	SJW	DETAIL CK.	S.G.B.	QUAN.CK.	SJW	CADD CK.	S.G.B.

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File : ka5761101bbr0075-018.dgn

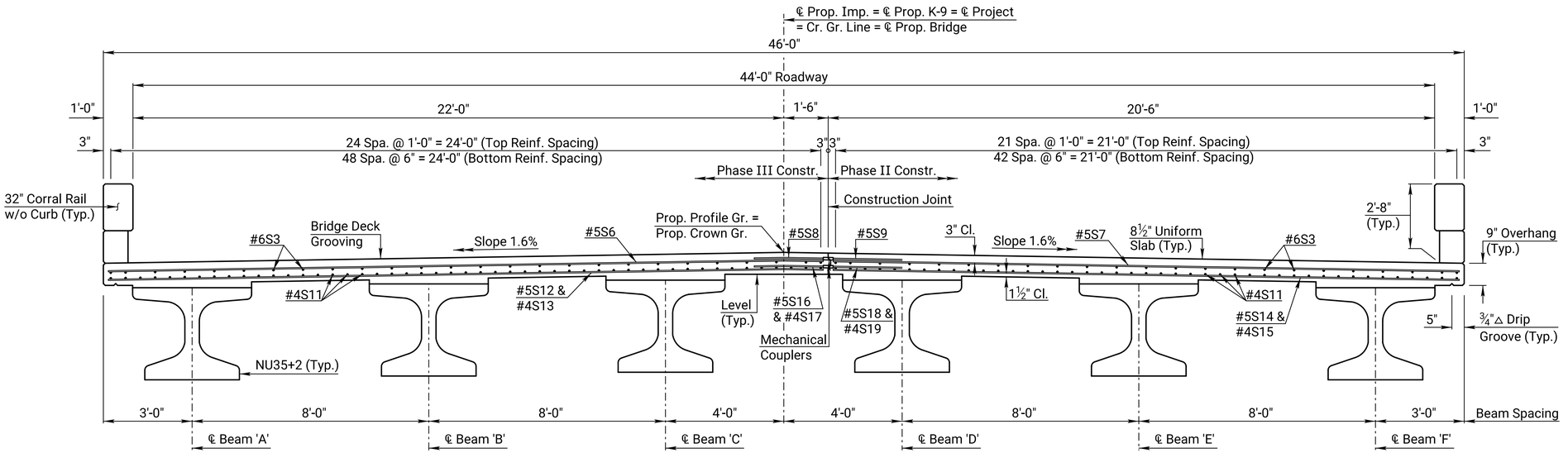
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	47	118



TYPICAL SECTION AT PIER

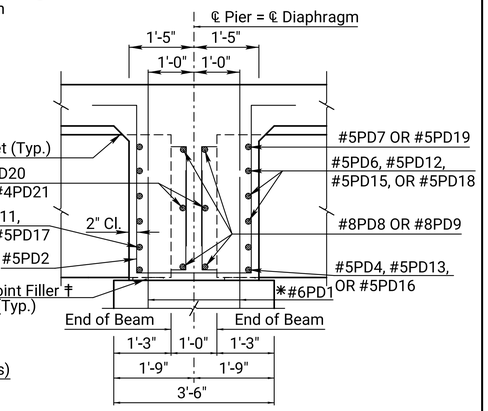
(Looking Upstation)



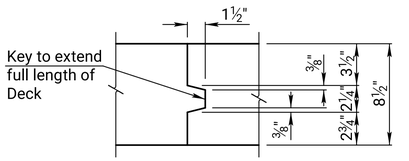
TYPICAL SECTION AT MIDSPAN

(Looking Upstation)

* #6PD1 Extends 2'-3" into Pier Diaphragm & Pier Beam



TYPICAL SECTION



LONGITUDINAL CONSTRUCTION JOINT

TYPICAL LAYOUT FOR BEAM ENDS AT PIERS

ǂ Note: Determine thickness of Expansion Joint Filler in the field to fill gap between beam and bearing seat.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

TYPICAL SECTION

Proj. 9-58 KA-5761-01 Marshall Co.

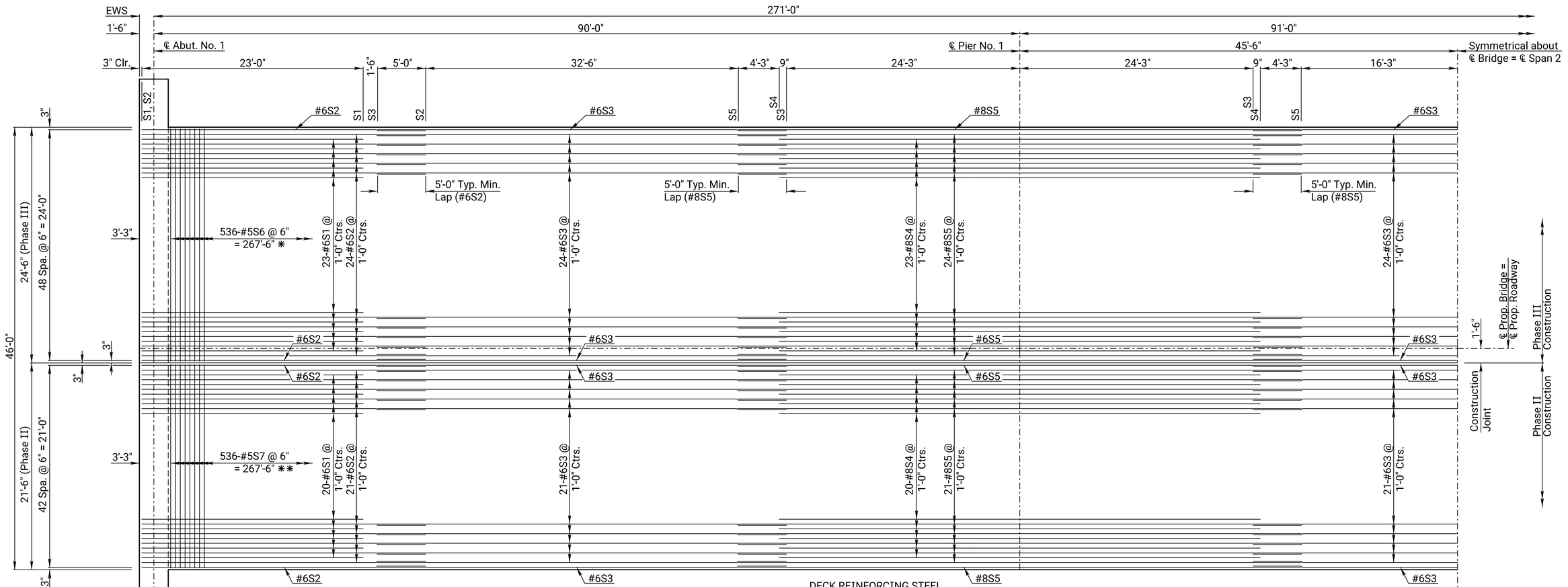
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DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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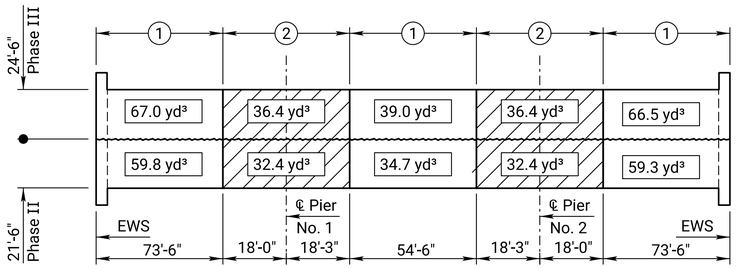
Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:33
File : ka576101bbr0075-019 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	48	118



✳Spliced to #5S8 mechanical coupler which is not shown for clarity.

✳✳Spliced to #5S9 mechanical coupler which is not shown for clarity.

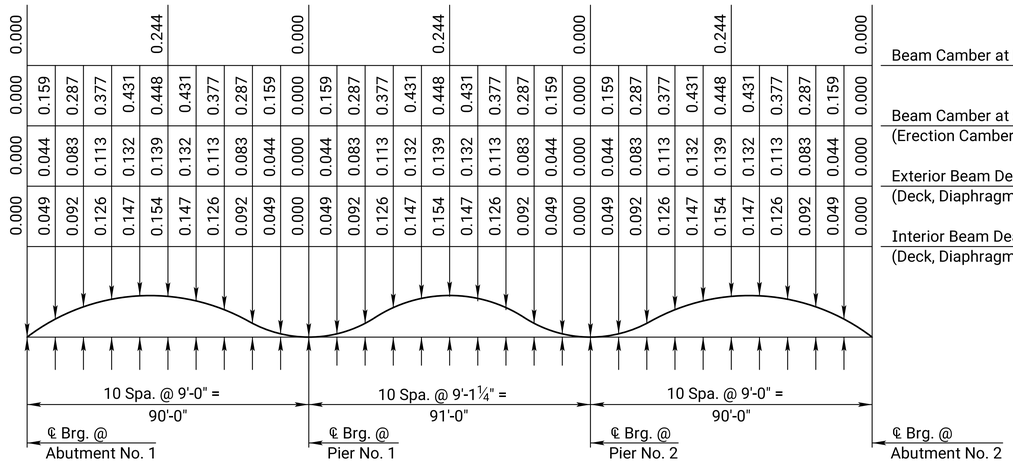


CONCRETE PLACING SEQUENCE

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.

DECK REINFORCING STEEL
(Top Deck Reinforcement)



Beam Camber at Release

Beam Camber at 50 Days (Erection Camber)

Exterior Beam Dead Load Deflection (Deck, Diaphragms, & Parapets)

Interior Beam Dead Load Deflection (Deck, Diaphragms, & Parapets)

NU35+2 BEAM CAMBER AND DEAD LOAD DEFLECTION

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 9".

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

Beam Concrete: Ei = 4,645 ksi (f'ci = 6.5 ksi)
Ef = 5,154 ksi (f'c = 8.0 ksi)

NO.	DATE	REVISIONS	BY	APP'D
06	04-07-14	Current Release	J.P.J.	C.E.R.
05	02-12-14	Added Benchmark	J.P.J.	C.E.R.
04	08-02-12	Added NOT3135 & NOT3145	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

SLAB & AUXILIARY DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

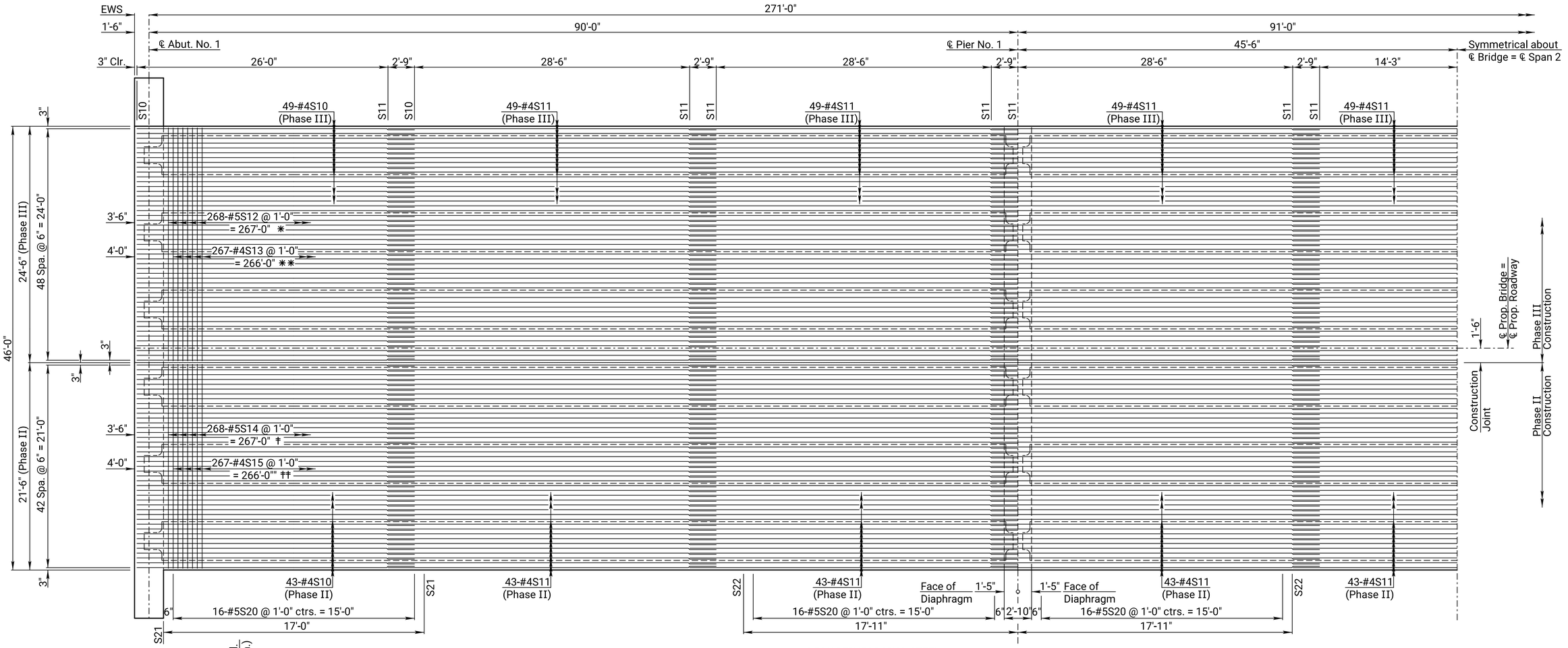
DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	49	118



DECK REINFORCING STEEL

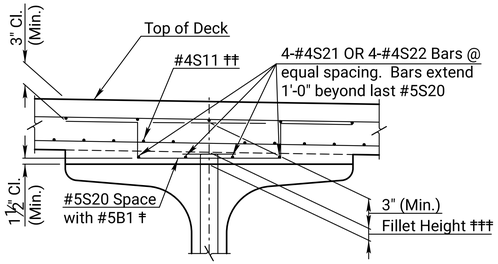
(Bottom Deck Reinforcement)

✱Spliced to #5S16 mechanical coupler which is not shown for clarity.

✱✱Spliced to #4S17 mechanical coupler which is not shown for clarity.

✝Spliced to #5S18 mechanical coupler which is not shown for clarity.

✝✝Spliced to #4S19 mechanical coupler which is not shown for clarity.

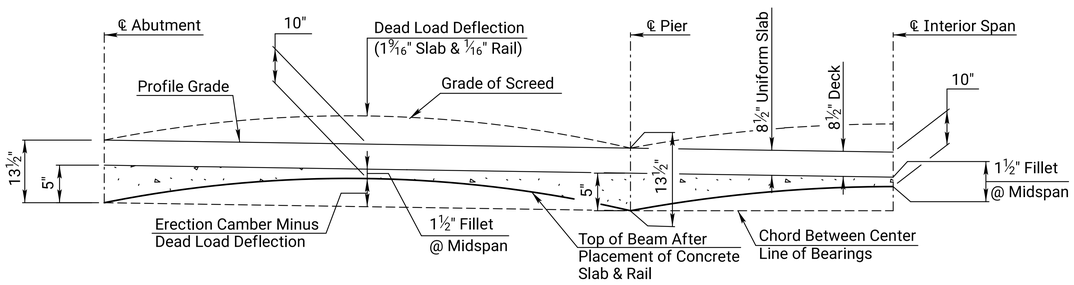


SECTION SHOWING HAIRPINS

✝ Canter as needed to meet clearances.

✝✝ Adjust as needed.

✝✝✝ Place #5S20 @ 1'-0" when fillet exceeds 3½". The material and labor necessary for the installation of the reinforcement shall be subsidiary to the bid item, "Reinforcing Steel (Grade 60)(Epoxy Coated)".



PRESTRESSED FILLET DIAGRAM

(Along ℄ of Beam)

NO.	DATE	REVISIONS	BY	APP'D
06	04-07-14	Current Release	J.P.J.	C.E.R.
05	02-12-14	Added Benchmark	J.P.J.	C.E.R.
04	08-02-12	Added NOT3135 & NOT3145	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

SLAB & AUXILIARY DETAILS

Proj. 9-58 KA-5761-01 Marshall Co.

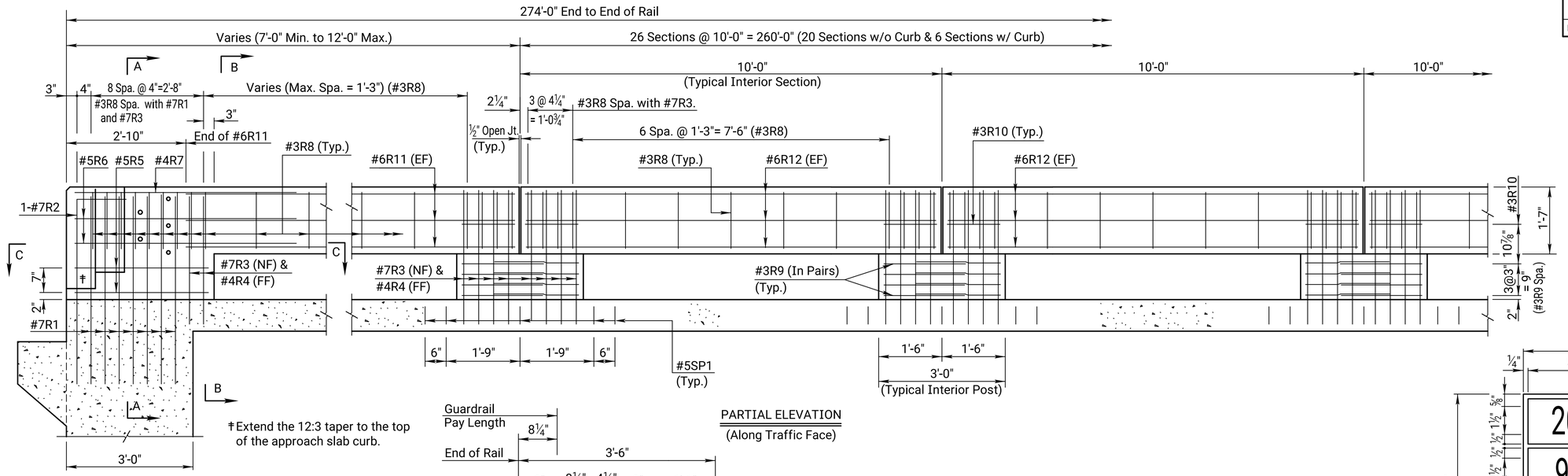
DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

KDOT Graphics Certified 05-02-2025 Sh. No. 49

KDOT Graphics Certified

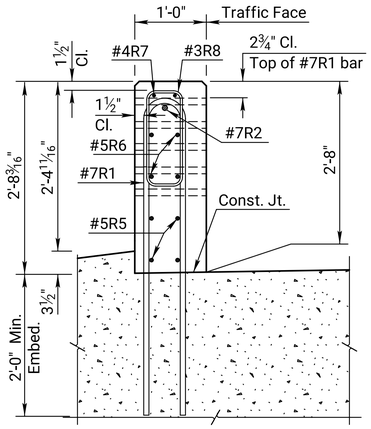
Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:32
File : ka576101bbr0075-021.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	50	118

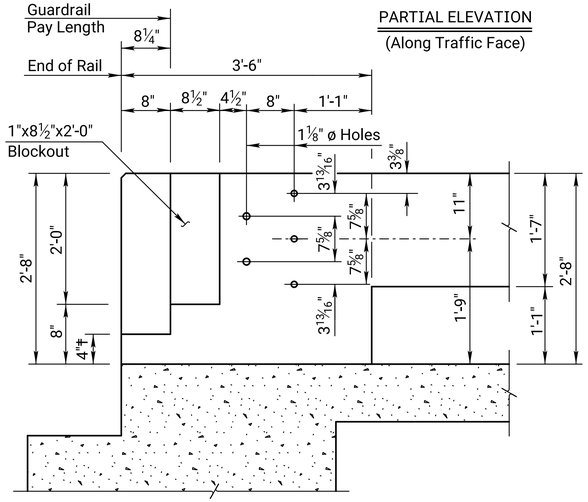


† Extend the 12:3 taper to the top of the approach slab curb.

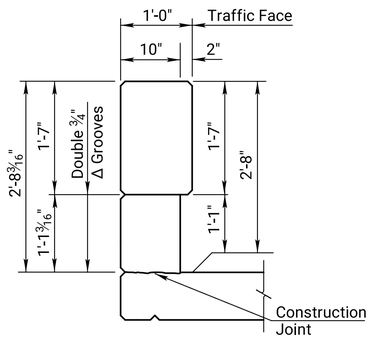
PARTIAL ELEVATION
(Along Traffic Face)



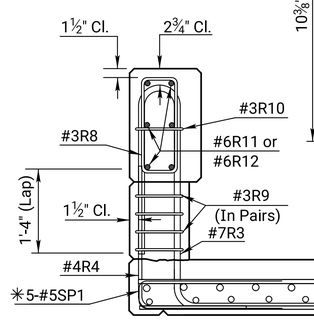
SECTION A-A



ELEVATION
(Dimensions at traffic face of rail.)

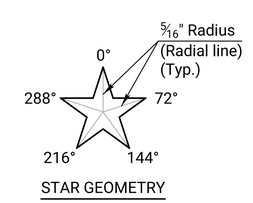


TYPICAL INTERIOR POST

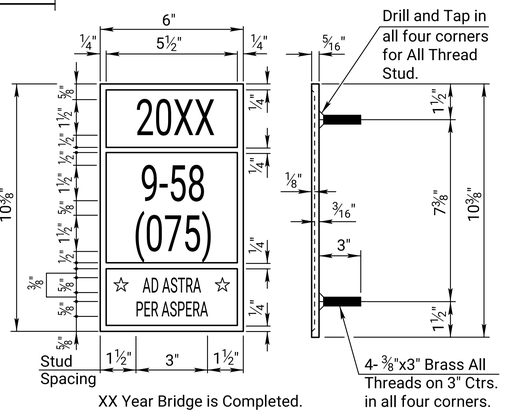


SECTION THRU POST

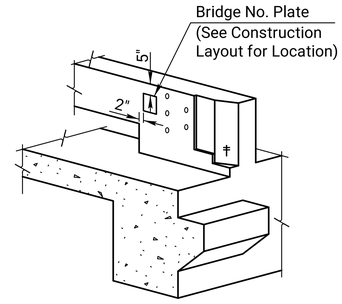
✳Note:
The hook may be canted to provide clearance and/or fit between reinforcing.



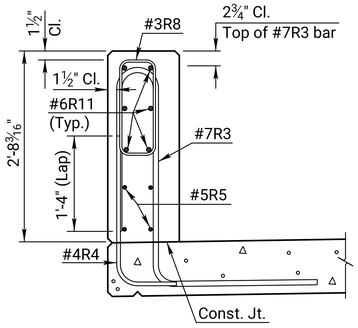
STAR GEOMETRY



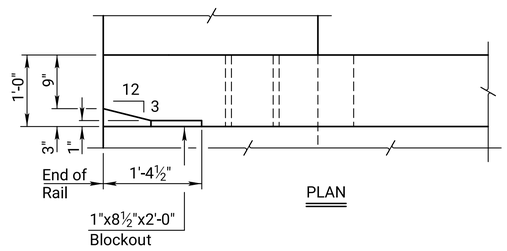
BRIDGE NUMBER PLATE
(1 Required)
(See Construction Layout for Location)



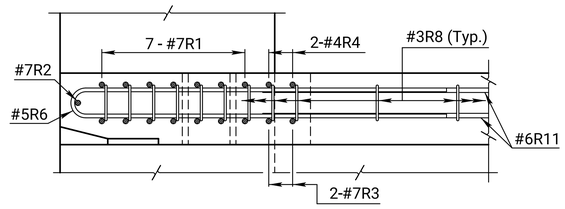
BRIDGE NUMBER PLATE PLACEMENT DETAIL



SECTION B-B



PLAN



SECTION C-C

NO.	DATE	REVISIONS	BY	APP'D
03				
02	12-03-21	Changed Bridge Number Plate detail	M.L.L.	M.A.H.
01	06-30-05	Current Release		

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

32" KANSAS CORRAL RAIL
(Without Curb)

Proj. 9-58 KA-5761-01 Marshall Co.

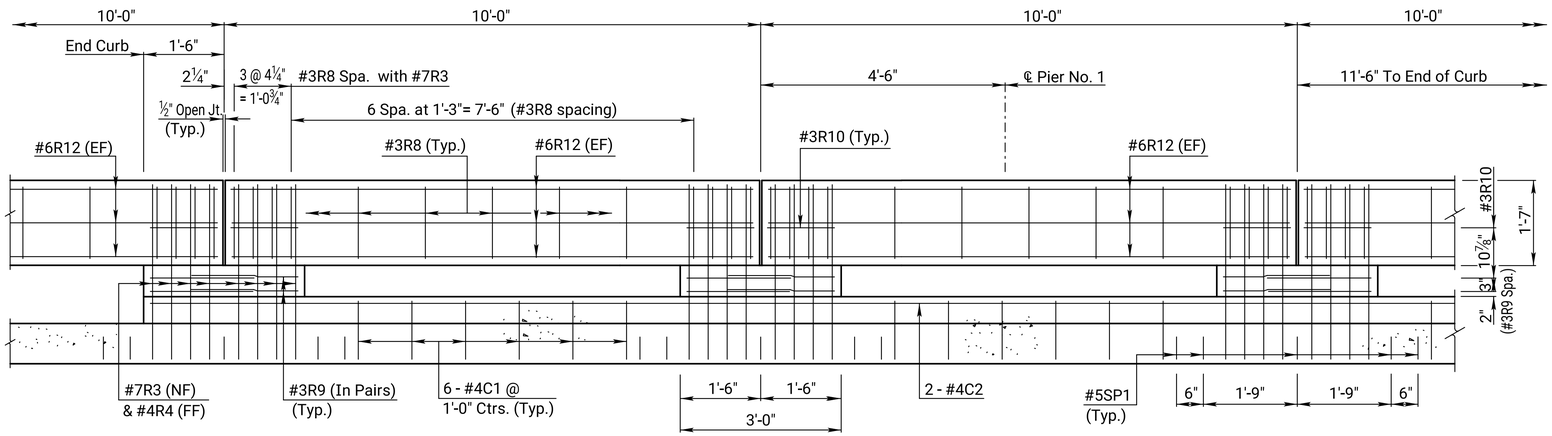
DESIGNED		DETAILED		QUANTITIES		CADD	
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

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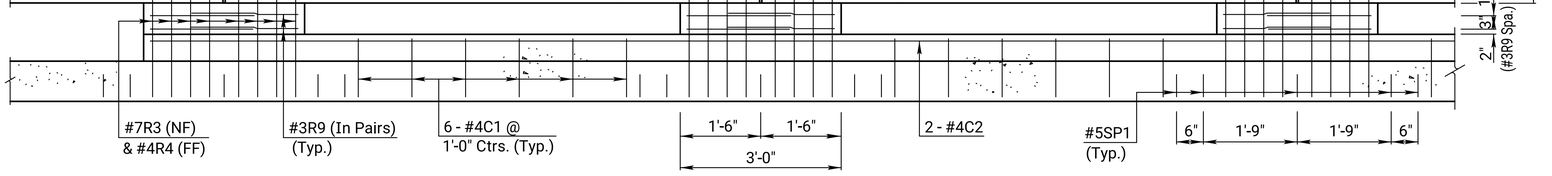
Plotted by: Andrew.Haase@ks.gov 16-OCT-2025 14:33
File : ka576101bbr0075-022.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	51	118



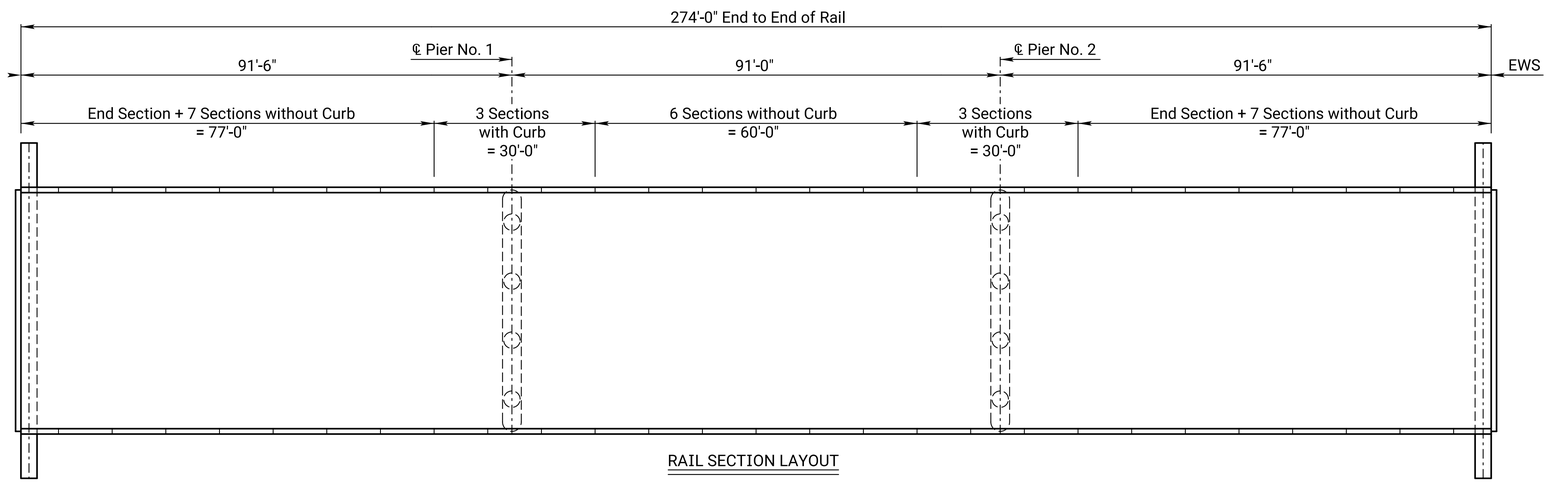
PARTIAL ELEVATION AT PIER NO. 1

(Along Left Traffic Face)

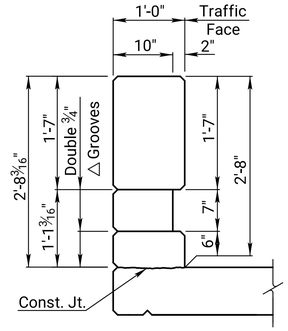


PARTIAL ELEVATION AT PIER NO. 2

(Along Left Traffic Face)

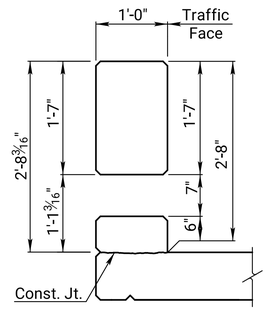


RAIL SECTION LAYOUT



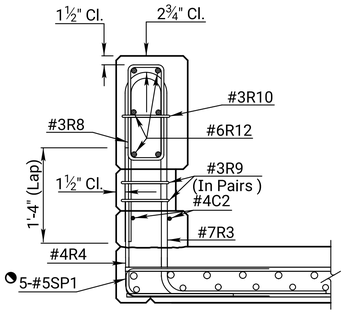
TYPICAL INTERIOR POST

(With Curb)



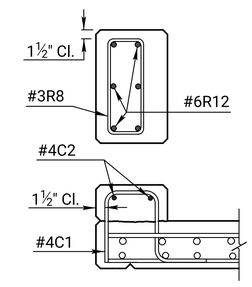
TYPICAL SECTION BETWEEN POSTS

(With Curb)



SECTION THRU POSTS

(With Curb)



TYPICAL SECTION BETWEEN POSTS

(With Curb)

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

NO.	DATE	REVISIONS	BY	APP'D
03				
02	12-03-21	Changed Bridge Number Plate detail	M.L.L.	M.A.H.
01	06-30-05	Current Release		

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

32" KANSAS CORRAL RAIL
(With Curb)

Proj. 9-58 KA-5761-01 Marshall Co.

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

KDOT Graphics Certified 10-13-2025 Sh. No. 51

KDOT Graphics Certified

Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:33
File : ka576101bbr0075-023.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	52	118

BILL OF REINFORCING STEEL (PHASE II)
Grade 60 (Epoxy Coated)

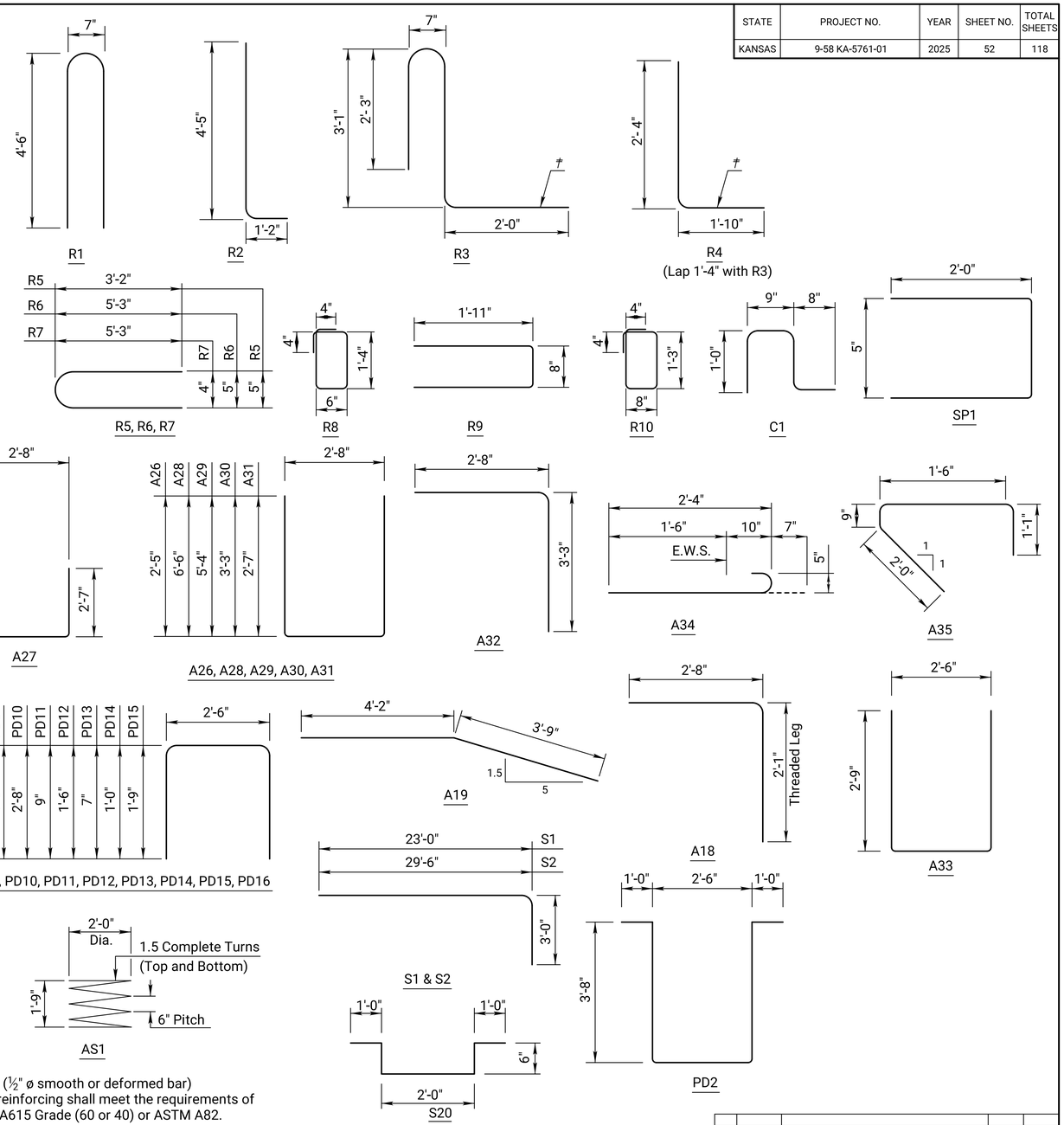
	Straight Bars				Bent Bars			
	Mark	Size	Number	Length	Mark	Size	Number	Length
Superstructure	A2	#8	10	25'-11"	R1	#7	14	9'-3"
	A4	#8	16	29'-2"	R2	#7	2	5'-7"
	A6	#8	30	5'-0"	R3	#7	222	7'-7"
	AD2	#8	4	24'-3"				
	PD8	#8	8	20'-5"	S1	#6	40	26'-0"
	S4	#8	40	50'-0"	S2	#6	46	32'-6"
	S5	#8	46	58'-6"				
					A18	#5	4	4'-9"
	PD1	#6	56	4'-6"	A19	#5	10	7'-11"
	R11	#6	12	4'-0"	A26	#5	60	7'-6"
	R12	#6	156	9'-8"	A27	#5	24	11'-9"
	S3	#6	69	42'-6"	A28	#5	30	15'-8"
					A29	#5	6	13'-4"
	A7	#5	2	7'-10"	A30	#5	30	9'-2"
	A8	#5	4	10'-5"	A31	#5	6	7'-10"
	A9	#5	2	9'-1"	A32	#5	24	5'-11"
	A12	#5	4	3'-8"	A33	#5	14	8'-0"
	A13	#5	8	7'-2"	A35	#5	42	5'-4"
	A14	#5	4	4'-6"	PD2	#5	16	11'-10"
	A21	#5	14	29'-2"	PD3	#5	48	5'-0"
	A23	#5	16	4'-0"	PD10	#5	4	7'-10"
	A25	#5	2	28'-3"	PD11	#5	2	4'-0"
	PD4	#5	8	4'-6"	PD12	#5	6	5'-6"
	PD5	#5	8	5'-4"	PD13	#5	2	3'-8"
	PD6	#5	24	6'-10"	PD14	#5	2	4'-6"
	PD7	#5	8	3'-6"	PD15	#5	6	6'-0"
	S7	#5	536	21'-2"	R5	#5	4	6'-6"
	S9	#5	536	3'-6"	R6	#5	4	10'-8"
	S14	#5	268	21'-2"	S20	#5	288	5'-0"
	S18	#5	268	3'-6"	SP1	#5	135	4'-5"
	A11	#4	2	3'-0"	A34	#4	42	2'-11"
	A37	#4	2	20'-8"	C1	#4	36	3'-5"
	C2	#4	4	32'-8"	R4	#4	222	4'-2"
	PD20	#4	4	20'-5"	R7	#4	2	10'-7"
	S10	#4	86	28'-9"				
	S11	#4	301	34'-0"	AS1	½"ø	8	✳
	S15	#4	267	21'-2"	R8	#3	366	4'-4"
	S19	#4	267	2'-6"	R9	#3	184	4'-6"
	S21	#4	24	17'-0"	R10	#3	54	4'-6"
	S22	#4	24	35'-10"				

✳ See Bending Diagram

BILL OF REINFORCING STEEL (PHASE III)
Grade 60 (Epoxy Coated)

	Straight Bars				Bent Bars			
	Mark	Size	Number	Length	Mark	Size	Number	Length
Superstructure	A1	#8	10	28'-11"	R1	#7	14	9'-3"
	A3	#8	16	32'-2"	R2	#7	2	5'-7"
	A5	#8	30	5'-0"	R3	#7	222	7'-7"
	AD1	#8	4	27'-4"				
	PD9	#8	8	23'-5"	S1	#6	46	26'-0"
	S4	#8	46	50'-0"	S2	#6	52	32'-6"
	S5	#8	52	58'-6"				
					A19	#5	10	7'-11"
	PD1	#6	72	4'-6"	A26	#5	66	7'-6"
	R11	#6	12	4'-0"	A27	#5	24	11'-9"
	R12	#6	156	9'-8"	A28	#5	36	15'-8"
	S3	#6	78	42'-6"	A29	#5	6	13'-4"
					A30	#5	36	9'-2"
	A7	#5	2	7'-10"	A31	#5	6	7'-10"
	A8	#5	4	10'-5"	A32	#5	24	5'-11"
	A9	#5	2	9'-1"	A33	#5	14	8'-0"
	A12	#5	4	3'-8"	A35	#5	48	5'-4"
	A13	#5	8	7'-2"	PD2	#5	24	11'-10"
	A14	#5	4	4'-6"	PD3	#5	48	5'-0"
	A15	#5	2	3'-2"	PD10	#5	4	7'-10"
	A16	#5	4	5'-0"	PD11	#5	2	4'-0"
	A17	#5	2	3'-7"	PD12	#5	6	5'-6"
	A20	#5	14	32'-2"	R5	#5	4	6'-6"
	A22	#5	16	4'-0"	R6	#5	4	10'-8"
	A24	#5	2	31'-3"	S20	#5	288	5'-0"
	PD4	#5	8	4'-6"	SP1	#5	135	4'-5"
	PD5	#5	8	5'-4"				
	PD6	#5	24	6'-10"	A34	#4	48	2'-11"
	PD7	#5	8	3'-6"	C1	#4	36	3'-5"
	PD16	#5	4	3'-7"	R4	#4	222	4'-2"
	PD17	#5	4	4'-0"	R7	#4	2	10'-7"
	PD18	#5	12	4'-9"				
	PD19	#5	4	3'-1"	AS1	½"ø	8	✳
	S6	#5	536	24'-2"	R8	#3	366	4'-4"
	S8	#5	536	3'-6"	R9	#3	184	4'-6"
	S12	#5	268	24'-2"	R10	#3	54	4'-6"
	S16	#5	268	3'-6"				
	A10	#4	2	3'-0"				
	A36	#4	2	23'-8"				
	C2	#4	4	32'-8"				
	PD21	#4	4	23'-6"				
	S10	#4	98	28'-9"				
	S11	#4	343	34'-0"				
	S13	#4	267	24'-2"				
	S17	#4	267	2'-6"				
	S21	#4	24	17'-0"				
	S22	#4	24	35'-10"				

✳ See Bending Diagram



(½" ø smooth or deformed bar)
Spiral reinforcing shall meet the requirements of ASTM A615 Grade (60 or 40) or ASTM A82.

Spiral Spacer Bars:
1) Are included in the weight of reinforcing steel.
2) Minimum section modulus = 0.008 in³
3) 4 required per spiral

BENDING DIAGRAMS

All dimensions are out to out of bars.

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

⊗ These dimensions vary due to slope of deck or thickness of slab.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

BILL OF REINFORCING AND BENDING DIAGRAM

Proj. 9-58 KA-5761-01 Marshall Co.

DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	AJH
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

KDOT Graphics Certified 10-15-2025 Sh. No. 52

KDOT Graphics Certified

Plotted by : Andrew.Haase@ks.gov 16-OCT-2025 14:34
File : ka576101bbr0075-028 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	53	118

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

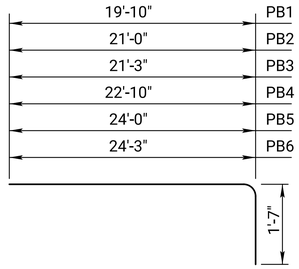
	Straight Bars				Bent Bars			
	Mark	Size	Number	Length	Mark	Size	Number	Length
Substructure	PB7	#9	28	5'-0"	PB1	#9	8	21'-5"
	PC1	#9	24	16'-11"	PB2	#9	8	22'-7"
	PC2	#9	24	13'-8"	PB3	#9	12	22'-10"
	PC3	#9	48	12'-0"				
					PW9	#5	52	5'-2"
	PB9	#6	24	19'-10"	PB13	#5	176	8'-6"
	PB11	#6	24	4'-6"	PB14	#5	16	10'-3"
	PW4	#6	4	8'-8"				
	PW5	#6	4	5'-9"	PS1	⅜"ø	2	✳
	PW6	#6	4	9'-0"	PS2	⅜"ø	2	✳
					PW10	#3	57	1'-4"
	PW1	#5	42	8'-8"				
	PW2	#5	42	5'-9"				
	PW3	#5	42	9'-0"				
	PW7	#5	26	12'-2"				
	PW8	#5	26	9'-2"				

✳ See Bending Diagram

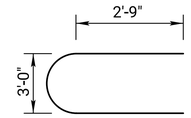
BILL OF REINFORCING STEEL (PHASE III)
Grade 60 (Non-Epoxy Coated)

	Straight Bars				Bent Bars			
	Mark	Size	Number	Length	Mark	Size	Number	Length
Substructure	PB8	#9	28	5'-0"	PB4	#9	8	24'-5"
	PC1	#9	24	16'-11"	PB5	#9	8	25'-7"
	PC2	#9	24	13'-8"	PB6	#9	12	25'-10"
	PC3	#9	48	12'-0"				
					PW9	#5	104	5'-2"
	PB10	#6	24	22'-10"	PB13	#5	208	8'-6"
	PB12	#6	24	4'-6"	PB14	#5	16	10'-3"
	PW4	#6	8	8'-8"				
	PW5	#6	4	5'-9"	PS1	⅜"ø	2	✳
	PW6	#6	4	9'-0"	PS2	⅜"ø	2	✳
					PW10	#3	114	1'-4"
	PW1	#5	84	8'-8"				
	PW2	#5	42	5'-9"				
	PW3	#5	42	9'-0"				
	PW7	#5	52	12'-2"				
	PW8	#5	52	9'-2"				

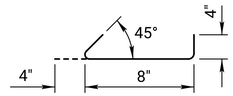
✳ See Bending Diagram



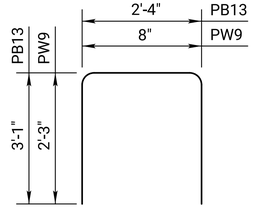
PB1, PB2, PB3, PB4, PB5 & PB6



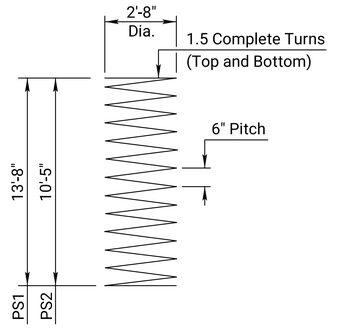
PB14



PW10



PB13, PW9



PS1, PS2

(⅜"ø smooth or deformed bar)
Spiral reinforcing shall meet the requirements of ASTM A615 Grade (60 or 40) or ASTM A82.

Spiral Spacer Bars:
1) Are included in the weight of reinforcing steel.
2) Minimum section modulus = 0.008 in³
3) 4 required per spiral

Coupled End Rebar (Place in Phase II Construction)

Coupled Rebar (Place in Phase III Constuction)

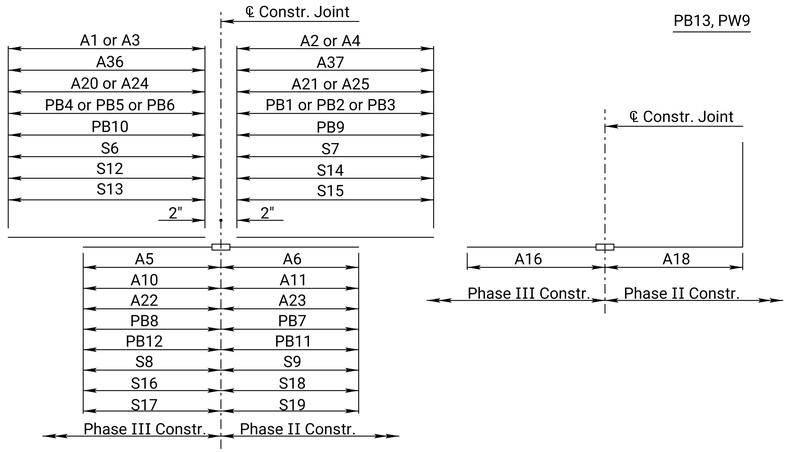
THREADED REBAR SPLICE SYSTEM

Epoxy Coated Threaded Rebar Splices (Grade 60)

Threaded Bars				Coupled Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
A6	#8	30	5'-0"	A5	#8	30	5'-0"
A11	#4	2	3'-0"	A10	#4	2	3'-0"
A18	#5	4	4'-9"	A16	#5	4	5'-0"
A23	#5	16	4'-0"	A22	#5	16	4'-0"
S9	#5	536	3'-6"	S8	#5	536	3'-6"
S18	#5	268	3'-6"	S16	#5	268	3'-6"
S19	#4	267	2'-6"	S17	#4	267	2'-6"

Non-Epoxy Coated Threaded Rebar Splices (Grade 60)

Threaded Bars				Coupled Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
PB7	#9	28	5'-0"	PB8	#9	28	5'-0"
PB11	#6	24	4'-6"	PB12	#6	24	4'-6"



PIER, SLAB & ABUTMENT SPLICE/COUPLER REINFORCING DETAIL

NOTE: The reinforcing bar lengths are calculated to the center of the coupling device. The mechanical splice system shall meet the requirements of the KDOT Specifications. The additional material and labor shall be subsidiary to the bid items "Reinforcing Steel (Grade 60)" and "Reinforcing Steel (Grade 60) (Epoxy Coated)".

BENDING DIAGRAMS

All dimensions are out to out of bars.

Bend this leg to match the slope of the roadway.

⊗ These dimensions vary due to slope of deck or thickness of slab.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 9-58-240.51 (075) Sta. 581+85.53

BILL OF REINFORCING AND BENDING DIAGRAM

Proj. 9-58 KA-5761-01 Marshall Co.

DESIGNED	AJH	DETAILED	AJH	QUANTITIES	AJH	CADD	AJH
DESIGN CK.	SJW	DETAIL CK.	SJW	QUAN.CK.	SJW	CADD CK.	SJW

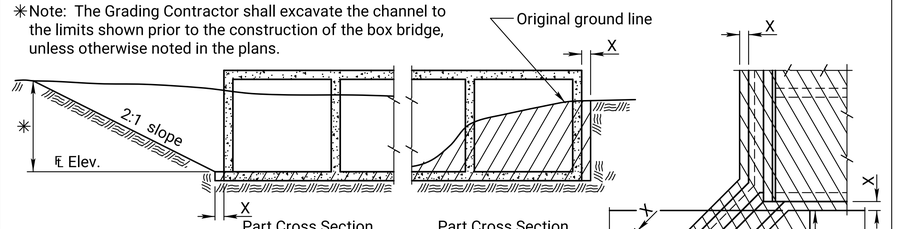
KDOT Graphics Certified 10-15-2025 Sh. No. 53

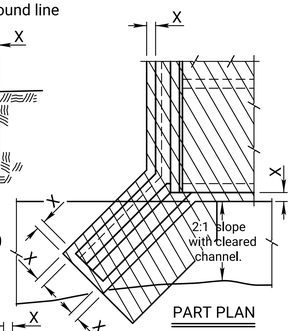
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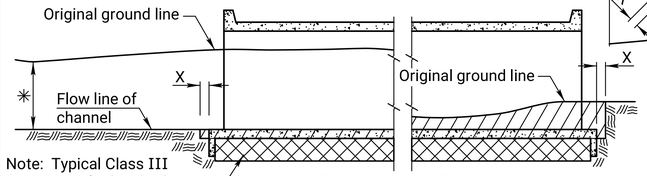
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File : ka5761101br0075-029 (CONFORMED).dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	54	118

✳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.

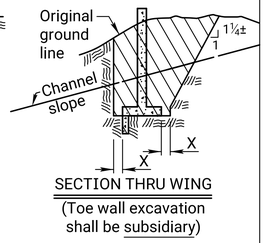






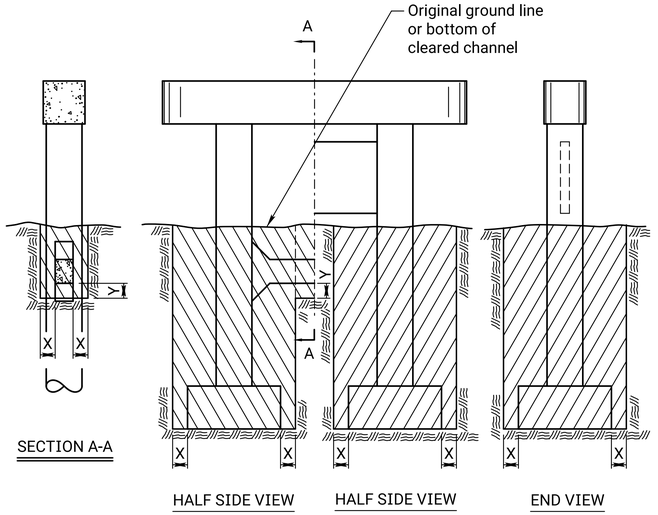
Note: Typical Class III Excavation for box bridges shall be below the "cleared" channel unless otherwise noted on the plans.

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



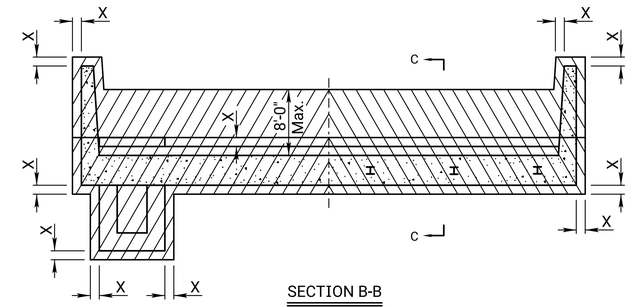
EXCAVATION DETAILS FOR REINFORCED CONCRETE BOX CULVERT

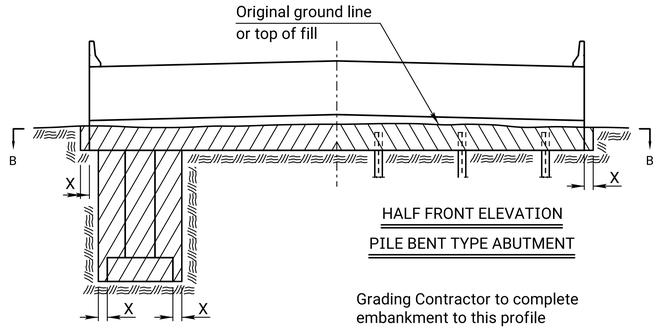
Note: Excavation for culverts less than bridge length and the additional excavation for "Embedded Structures" shall not be paid for as Class III Excavation, but shall be subsidiary to Grade 4.0 Concrete.

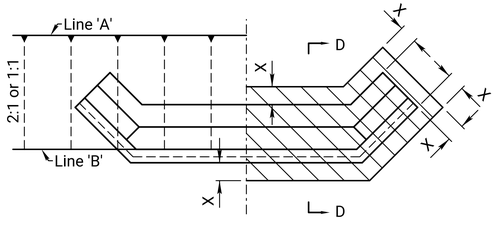


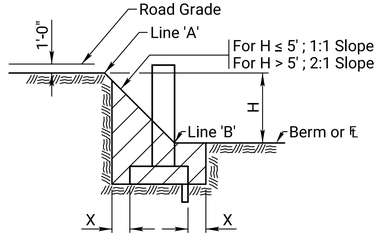
EXCAVATION DETAILS FOR TYPICAL PIERS

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

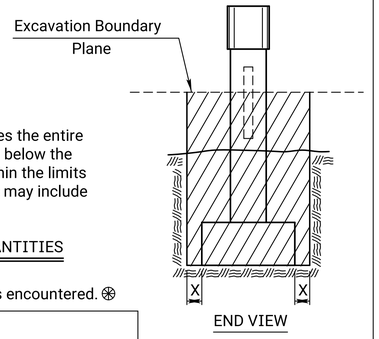








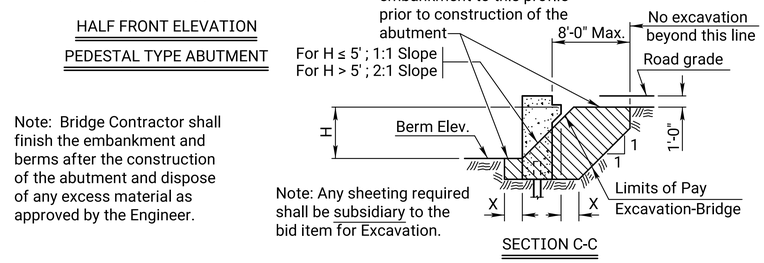
EXCAVATION DETAILS FOR ABUTMENTS WITH FLARED WINGWALLS



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. ❀



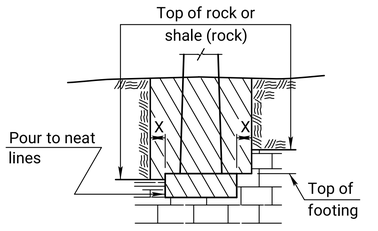
HALF FRONT ELEVATION
PEDESTAL TYPE ABUTMENT

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

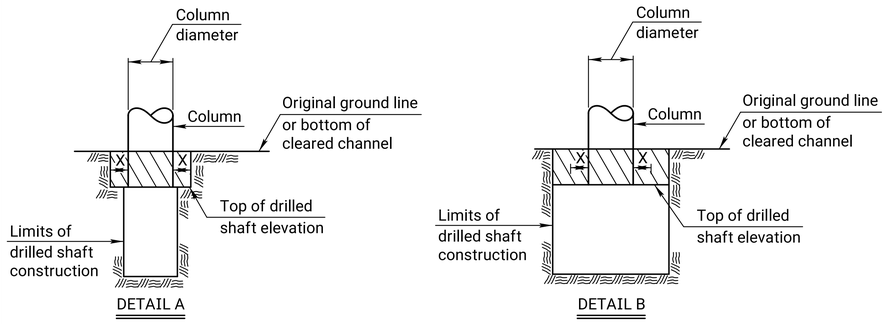
See detail when rock or shale (rock) is encountered. ❀



❀ 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

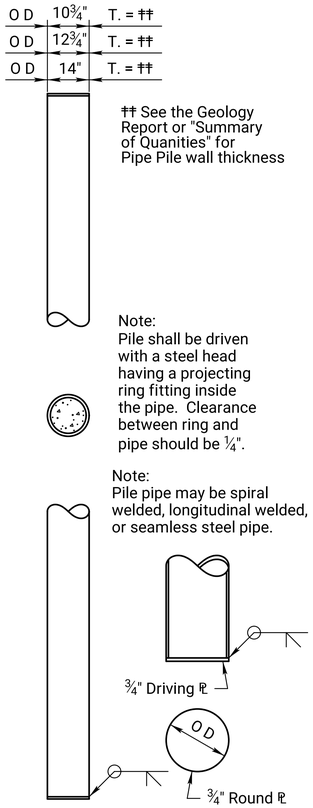
FHWA APPROVAL		04-17-10	APP'D.		Terry L. Fleck
DESIGNED	DETAILED	R.D.R.	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	L.R.R.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 06-20-2022 Sh. No. 54

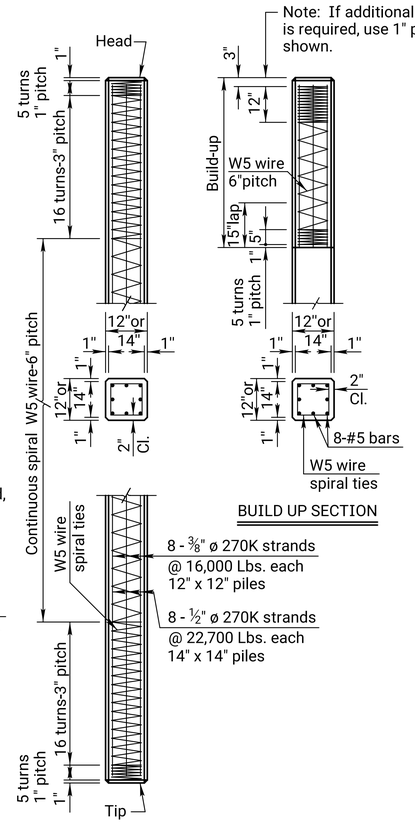
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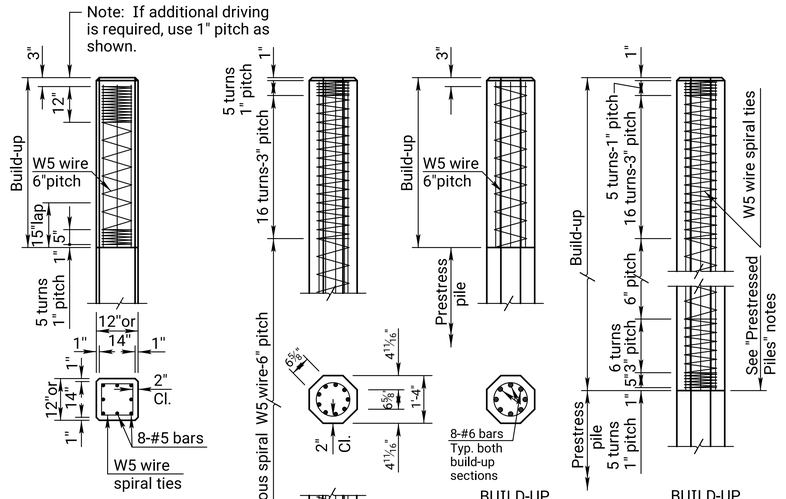
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	55	118



PLAIN ROUND
CAST-IN-PLACE CONCRETE PILES



12" OR 14"
PRESTRESSED
CONCRETE PILES



16" PRESTRESSED
CONCRETE PILES

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

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.

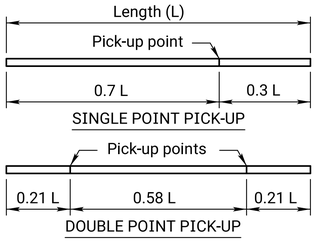
All piles driven without a mandrel shall be of the minimum thicknesses shown. Piles driven with a mandrel shall be of sufficient strength and thickness to withstand driving without injury and to resist harmful distortion and/or buckling due to soil pressure after the mandrel is removed.

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.



PICK-UP POINTS FOR PRESTRESSED PILING

Max. length - 55' single point pick-up
Max. length - 80' double point pick-up

Note: Piles shall be marked at Pick-up points to indicate proper points for attaching handling lines.



SHELL PILE POINT

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.

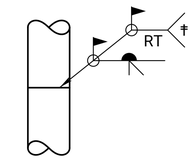
Verify that enough filler metal has been correctly placed in all weld locations to obtain a flush or convex surface with no concavity produced upon completion of the final welds.

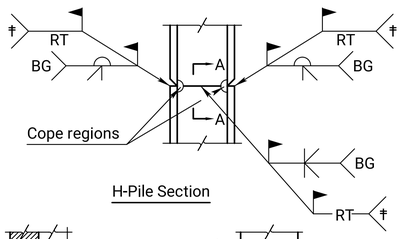
SPLICES: Splices for steel piles and shell piling shall be in accordance with details shown on this sheet and the Standard Specifications.

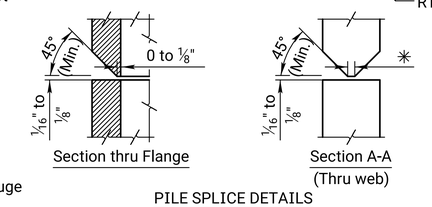
For integral pile bent abutments and piers, if a pile splice is required, do not locate the pile splice within a region extending 2'-0" above and 10'-0" below the bottom of the concrete web wall. For abutments, locate the pile splice at least 10'-0" below top of fill.

With the approval of the Engineer, one splice per bent may be allowed in the region described above without testing. If additional splices are anticipated, based on the geology, the Contractor prior to driving, will locate the splice so that the splice will not fall within the regions described above.

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







✳ Minimum as required by welding process.

BG = Backgouge

PILE SPLICE DETAILS

NO.	DATE	REVISIONS	BY	APP'D
04	08-16-18	Add splice web section, clarify note	M.L.L.	J.P.J.
03	09-15-15	Clarify Notes	J.P.J.	C.E.R.
02	06-18-12	Clarify f'c, rod type, use and weld	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

STANDARD PILE DETAILS

BR110

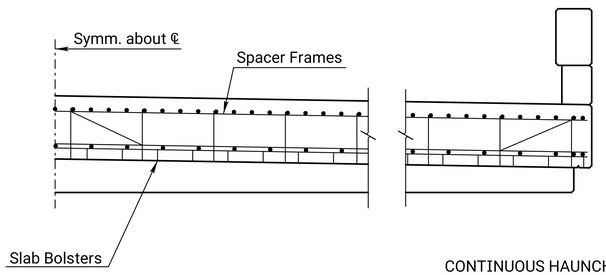
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DESIGN CK.		DETAIL CK.		QUAN.CK.	TRACE CK.

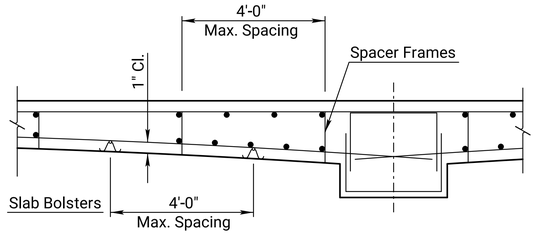
KDOT Graphics Certified 06-20-2022 Sh. No. 55

KDOT Graphics Certified

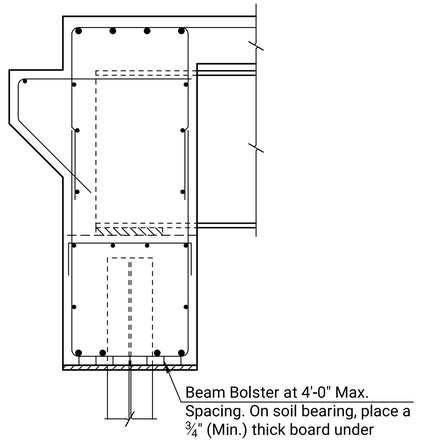
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	56	118

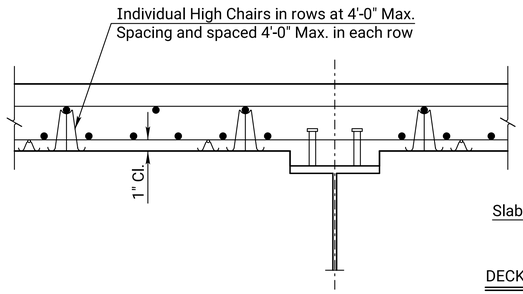


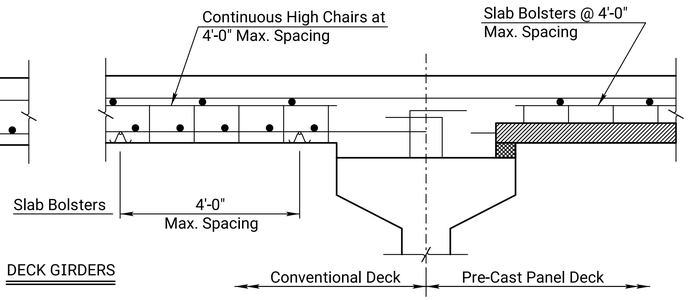


CONTINUOUS HAUNCHED SLAB

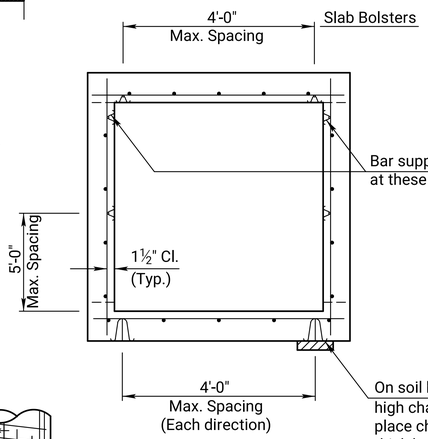


ABUTMENT

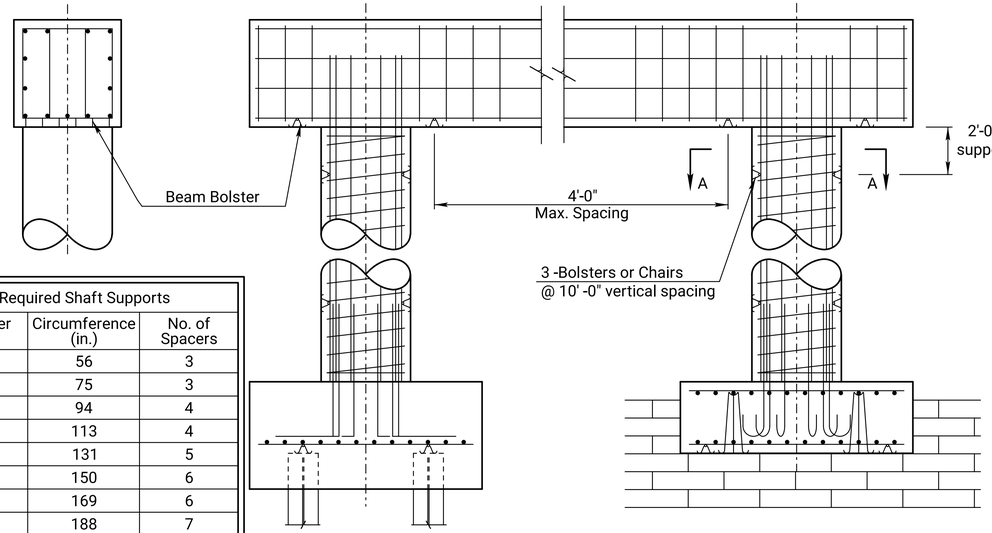




DECK GIRDERS

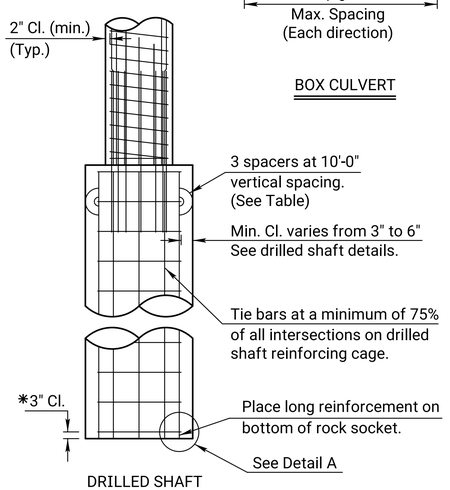


BOX CULVERT

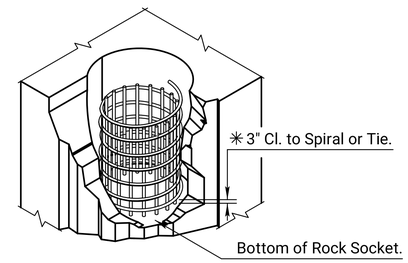


PIER

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

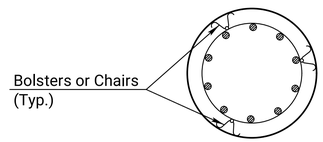


DRILLED SHAFT



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 : ka576101bss0075-0120.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	57	118

EARTHWORK

LOCATION	STATION to STATION	EXCAVATION COMMON CU.YDS.	EXCAVATION COMMON VMF	⚠ ROCK CU.YDS.	⚠ ROCK VMF	CONTR. ⬨ FURN. CU.YDS.	COMPACTION TYPE AA MR-5-5 CU.YDS.	COMPACTION TYPE A MR-5-5 CU.YDS.		THROUGH CUTS NOT SUBGRADED COMM. CU.YDS.	THROUGH CUTS NOT SUBGRADED TYPE AA MR-5-5 CU.YDS.		✳ EMBANKMENT (CU.YDS.) INITIAL CONSOL.	✳ EMBANKMENT (CU.YDS.) SETTLE-MENT	⚠ PLACE. SELECT SOIL CU.YDS.
Phase 1	568+50.00 - 593+50.00	◫ 135	0.77					75		392	392				
Phase 2	573+75.00 - 588+58.80	1107	0.77	515	1.00	11521	215	9518		825	825				
Phase 3 (Includes Channel Change)	568+50.00 - 592+00.00	16053	0.77	995	1.00	9047	165	19163		665	665				
Phase 4	570+00.00 - 593+50.00	39	0.77	76	1.00	2113		1657							
	TOTALS	17334		1586		22681	380	30413		1882	1882				

Note: For Earthwork Inclusive For Each Phase See Construction Sequencing Sheets.
⚠ All rock excavation is existing pavement and temporary widening, removal is to be wasted.
⬨ Assumed VMF for Contractor Furnished is 0.77.
✳ Subsidiary (See General Note).
◫ Includes 38 Cu. Yds. to be hauled to Phase 2

SALVAGED TOPSOIL

ROUTE	STATION TO STATION	SIDE	SQ. YDS.	REMARKS
K-9	568+50 to 582+69	Lt.	13834.8	
K-9	580+00 to 592+00	Lt.	8810.8	
K-9	570+00 to 581+75	Rt.	8842.3	
K-9	581+68 to 593+50	Rt.	7009.4	
		TOTAL	38497.3	

RECAPITULATION OF BRIDGE QUANTITIES

BRIDGE NUMBER	STATION	SEE SHEET NO.
9-58-240.51 (075)	581+85.53	29

RECAPITULATION OF ROAD QUANTITIES

ITEM	QUANTITY	UNIT
Cleaning of Existing Structures	Lump Sum	Lump Sum
Contractor Construction Staking	Lump Sum	Lump Sum
Field Office & Laboratory (Type A)	1	Each
Mobilization	Lump Sum	Lump Sum
Removal of Existing Structures	Lump Sum	Lump Sum
Maintenance and Restoration of Haul Roads (Set Price)	Lump Sum	Lump Sum
✳ Clearing and Grubbing	Lump Sum	Lump Sum
Salvaged Topsoil	38498	Sq. Yd.
Common Excavation (Rural Small)	19216	Cu. Yd.
Common Excavation (Contractor Furnished)	22681	Cu. Yd.
Rock Excavation	1586	Cu. Yd.
Compaction of Earthwork (Type AA) (MR-5-5)	380	Cu. Yd.
Compaction of Earthwork (Type A) (MR-5-5)	30413	Cu. Yd.
Water (Grading) (Set Price)	1	M. Gal.
Cross Road Pipe (36") (RCP)	52	Ln. Ft.
End Sections (36") (RC)	2	Each
End Sections (24")	2	Each
Entrance Pipe (24")	86	Ln. Ft.
Riprap (Heavy Stone) (¼Ton)	1382	Sq. Yd.
Guardrail, Steel Plate (MGS)	462.5	Ln. Ft.
Guardrail, End Terminal (MGS-SRT) (Alt. 1)	4	Each
Guardrail, End Terminal (MGS-FLEAT) (Alt. 2)	4	Each
Impact Attenuator (TL-3) (Temporary)	2	Each
Replacement Modules (Impact Attenuator)	10	Each
Concrete Safety Barrier (Type F3) (Temporary)	1838	Ln. Ft.
Concrete Safety Barrier (Type F3) (Temporary - Relocate)	1838	Ln. Ft.
Right-Of-Way Survey Monument	11	Each
Concrete Pavement (10" Uniform) (AE) (Br. App.)	326	Sq. Yd.
Bridge Approach Slab Footing	52.2	Cu. Yd.
Curing Environment	Lump Sum	Lump Sum
Foundation Stabilization (Set Price)	1	Cu. Yd.
Concrete For Seal Course (Set Price)	1	Cu. Yd.
Temporary Surfacing Material (Aggregate) (Set Price)	1	Cu. Yd.

✳ Federally Non-Participating

For Surfacing Quantities, See Sh. No. 58
For Temporary Erosion & Pollution Control Quantities, See Sh. No. 59-60
For Seeding Quantities, See Sh. No. 69
For Signing Quantities, See Sh. No. 76
For Pavement Marking Quantities, See Sh. No. 81
For Traffic Control Quantities, See Sh. No. 97

STEEL PLATE GUARDRAIL (MGS)

ROUTE	STATION to STATION	FLARE RATE	SIDE	LENGTH (FT)	END TERMINALS FLARED MGS SRT Alt. 1	END TERMINALS FLARED MGS FLEAT Alt. 2	REMARKS
K-9	579+99.23 to 580+49.22		Lt.	50.0	1	1	
K-9	578+86.75 to 580+49.22	30:1	Rt.	162.5	1	1	
K-9	583+21.84 to 584+21.76	15:1	Lt.	100.0	1	1	
K-9	583+21.84 to 584+71.89	30:1	Rt.	150.0	1	1	
	TOTAL			462.5	4	4	

RIPRAP (HEAVY STONE) (¼ TON)

LOCATION	STATION to STATION	SIDE	D (Ft.)	T (Ft.)	W (Ft.)	LENGTH (Ft.)	QUANTITY Sq. Yd.	REMARKS
Channel Change)	2+70 to 3+00	Lt.	✳Var.	3.0	✳Var.	30.0	112.3	Channel Lining
Channel Change)	2+70 to 3+00	Rt.	✳Var.	3.0	✳Var.	30.0	97.8	Channel Lining
Channel Change)	3+00 to 6+00	Lt.	✳Var.	3.0	✳Var.	300.0	546.0	Channel Lining
Channel Change)	3+00 to 6+00	Rt.	✳Var.	3.0	✳Var.	325.0	300.0	Channel Lining
Channel Change)	6+00 to 6+50	Lt.	✳Var.	3.0	✳Var.	50.0	131.7	Channel Lining
Channel Change)	6+00 to 6+50	Rt.	✳Var.	3.0	✳Var.	25.0	194.2	Channel Lining
						Total	1382	

✳ See Cross Sections
See Sheet No. 31 For Channel Armoring Details.

CLEANING OF EXISTING STRUCTURES (FOR INFORMATION ONLY)

ROUTE	STATION	SIDE	REMARKS
K-9	572+73.00	Lt.	24" x 47' CMP

The listing shown may not be complete and is for information only.

REMOVAL OF EXISTING STRUCTURES (FOR INFORMATION ONLY)

ROUTE	STATION	SIDE	REMARKS
K-9	572+83.00	Rt.	24" x 41' CMP
K-9	581+85.50	℄	Br. No. 9-58-240.51 (025)
K-9	℄ 579+39.69 - 580+91.00	Lt.	Guardrail
K-9	℄ 582+79.92 - 583+68.04	Lt.	Guardrail
K-9	℄ 579+40.45 - 580+91.00	Rt.	Guardrail
K-9	℄ 582+79.92 - 583+68.04	Rt.	Guardrail

The listing shown may not be complete and is for information only. Additional structures not listed but whose removal is required during construction as determined by the Engineer will not be paid for directly, but will be subsidiary to the bid item, "Removal of Existing Structures".

CONCRETE PAVEMENT (10" UNIFORM) (AE) (BR. APP.) STATION to STATION	PHASE	Side	SQ. YDS.	BRIDGE APPROACH SLAB FOOTING Cu. Yds.
580+15.53 - 580+48.53	2	Rt.	75.89	12.15
583+22.53 - 583+55.53	2	Rt.	75.89	12.15
580+15.53 - 580+48.53	3	Lt.	86.89	13.92
583+22.53 - 583+55.53	3	Lt.	86.89	13.92
TOTALS			325.56	52.14

DRAINAGE STRUCTURES

LOCATION	STATION	SIDE	SIZE	TYPE	Lt.	Rt.	CROSS ROAD PIPES (FT) RCP	ENTRANCE PIPES (FT) RCP, ACSP, CAP, PEP, PVCP, PPP	END SECTIONS (EA.) Θ	END SECTIONS (EA.) RC	CONC. PIPE AASHTO CLASS NO.	CROWN GRADE	FLOWLINE ELEVATION Lt.	FLOWLINE ELEVATION Rt.	HORIZONTAL ROADWAY Lt.	HORIZONTAL ROADWAY Rt.	DEGREE OF ROTATION	HEIGHT OF FILL (FT)	REMARKS
							36"	24"	24"	36"									
K-9	572+83	Rt.	24"	EP (RCP, ACSP, CAP, PEP, PVCP, PPP)				86	2			1139.57	1139.40	1139.90			10 (Rt.)		
K-9	587+65	℄	36"	CRP (RCP) (Extend Ex.)	18'	34'	52			2		1147.29	1131.70	1126.79					
				TOTAL			52	86	2	2									

Θ See Summary of Pipe Culverts Sheet No. 28 for Allowable End Section Types

NO.	DATE	REVISIONS	BY	APP'D
2	1-14-08	Rem. Drainage Structure summary	S.W.K.	J.O.B.
1	1-9-91	Detailed on CADD	R.J.S	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

~~RD050~~

FHWA APPROVAL 5-28-08		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	9-58 KA-5761-01	2025	58	118

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 A MR-5-5) 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 XX" HMA Commerical Grade (Class A) to the R/W line as indicated on the detail. All side roads and house entrances with existing asphalt surface shall be surfaced with XX" HMA Com. Gr. (Class A)at least to the R/W line or to the end of construction, as directed by the Engineer. Each mailbox turnout (ON PROJECTS WHERE STABILIZED SHOULDERS ARE NOT SPECIFIED) shall be surfaced with_____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.

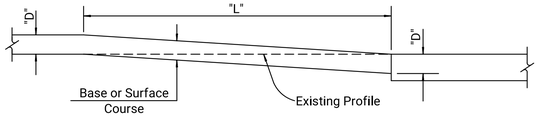
The base course shall be constructed to the plan thickness as shown.

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.

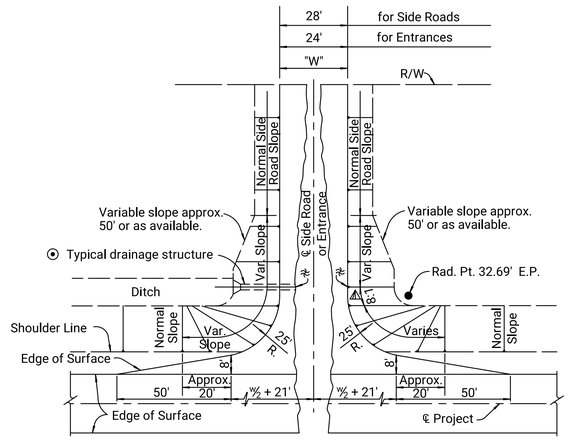
The work of cutting the subgrade and disposing of excess excavated material shall be subsidiary to other items in the contract.

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'

SURFACING BREAKDOWN (For Information Only)

LOCATION	STATION TO STATION		SIDE	≈ HMA-COMMERCIAL GRADE (CLASS A) (TONS) 8"	6"	4"	AGGREGATE BASE (AB-3) (6") (SQ. YD.)	AGGREGATE SHOULDER (AS-1) (4") (SQ. YD.)	REMARKS
Phase 1									
Temp. Widening	℄ 568+50.00	℄ 578+00.00	Lt.		145.9				
Temp. Widening	℄ 570+00.00	℄ 573+75.00	Rt.		56.1				
Temp. Widening	℄ 585+50.00	℄ 592+00.00	Lt.		99.9				
Temp. Widening	℄ 588+58.72	℄ 593+50.00	Rt.		97.7				
Phase 2									
K-9 (Mainline)	℄ 573+75.00	℄ 580+15.53	Rt.	383.6			854.0		
K-9 (Shoulder)	℄ 573+75.00	℄ 580+15.53	Rt.	200.3			524.5		
K-9 (Mainline)	℄ 583+55.53	℄ 588+58.80	Rt.	301.4			671.1		
K-9 (Shoulder)	℄ 583+55.53	℄ 588+58.80	Rt.	158.6			414.9		
Guardrail Pad	℄ 580+18.53	℄ 580+48.53	Rt.			2.9			
Guardrail Pad	℄ 583+22.53	℄ 583+55.53	Rt.			2.9			
K-9 (Shoulder)	℄ 578+40.85	℄ 580+18.53	Rt.					184.2	
K-9 (Shoulder)	℄ 583+52.53	℄ 585+17.87	Rt.					186.0	
Phase 3									
K-9 (Mainline)	℄ 573+75.00	℄ 580+15.53	Lt.	383.6			854.0		
K-9 (Shoulder)	℄ 573+75.00	℄ 580+15.53	Lt.	113.5			325.8		
K-9 (Mainline)	℄ 583+55.53	℄ 588+58.80	Lt.	301.3			670.4		
K-9 (Shoulder)	℄ 583+55.53	℄ 588+58.80	Lt.	85.9			248.0		
Guardrail Pad	℄ 580+18.53	℄ 580+48.53	Lt.			2.9			
Guardrail Pad	℄ 583+22.53	℄ 583+55.53	Lt.			2.9			
K-9 (Shoulder)	℄ 579+53.37	℄ 580+18.53	Lt.					65.2	
K-9 (Shoulder)	℄ 583+52.53	℄ 584+67.68	Lt.					163.0	
Totals				1928.2	399.6	11.6	4562.7	598.4	

≈ Computed at the rate of 145 Lbs/Cu. Ft. (Mixed Weight Aggregate and Asphalt)



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 appropriate clear zone width. 6:1) at approximate ℄ Structure or

≈ 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 high-way ditch, unless otherwise shown on the plans.

RECAPITULATION OF QUANTITIES		
ITEM	TOTAL	UNIT
HMA - Commercial Grade (Class A)	2340	TONS
Aggregate Base (AB-3) (6")	4563	SQ. YD.
Aggregate Shoulder (AS-1) (4")	599	SQ. YD.
Water (Aggregate Base) (Set Price)	1	M Gal.
Water (Aggregate Shoulder) (Set Price)	1	M Gal.
Field Office and Laboratory (Type A)	1	Each

NO.	DATE	REVISIONS	BY	APP'D
1 2	1-10-07	Changed bituminous to asphalt	S.W.K.	J.O.B.
1 1	8-30-06	Changed tack type/rate	S.W.K.	J.O.B.
10	3-24-05	Revised compaction, tack type/rate	S.W.K.	J.O.B.
9	6-12-02	Added low point off shoulder.	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES (Surfacing)

~~RD051~~

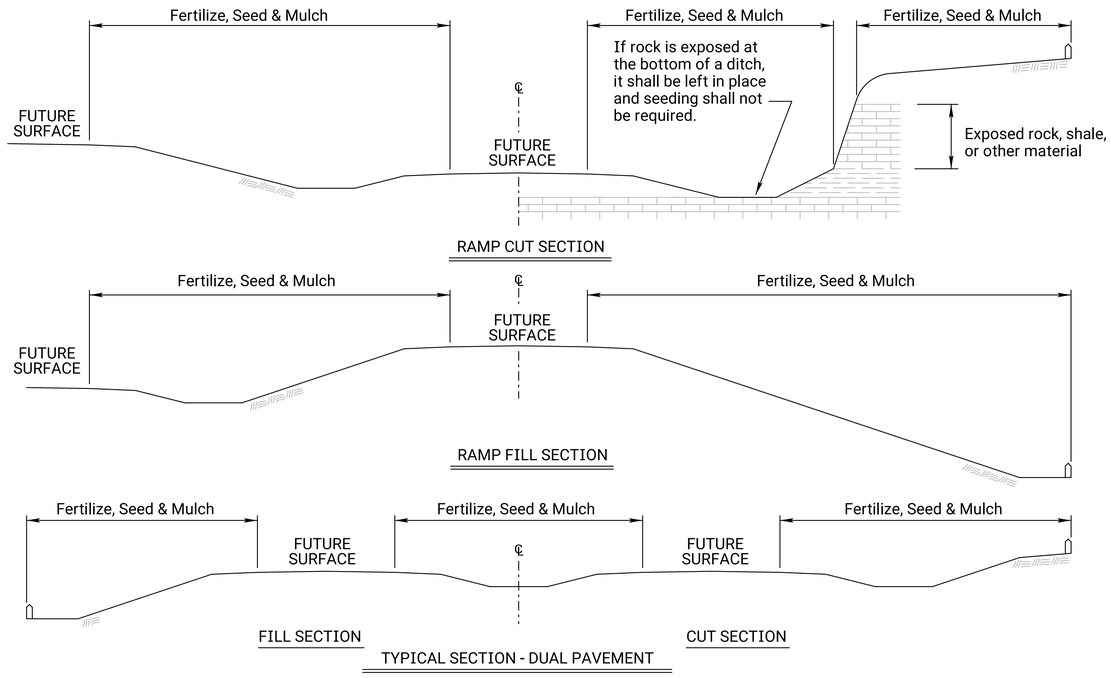
FHWA APPROVAL 9-06-06		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Hecht

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	59	118



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		6.50	1.30	Temporary Fertilizer (15 - 30 - 15)	975.0	LB
20		6.50		Temporary Seed (Canada Wildrye)	130.0	LB
45		6.50		Temporary Seed (Grain Oats)	292.5	LB
45		6.50		Temporary Seed (Sterile Wheatgrass)	292.5	LB
	109.9		1.30	Soil Erosion Mix	142.9	LB
				Erosion Control (Class 1, Type C)	4700	SQ YD
				Erosion Control (Class 2, Type E)	1565	SQ YD
				Sediment Removal (Set Price)	1	CU YD
				Temporary Berm (Set Price)	1	LF
				Temporary Ditch Check (Rock)	28	CU YD
				Biodegradable Log (9")	38	LF
				Biodegradable Log (12")	50	LF
				Biodegradable Log (20")	300	LF
				Filter Sock (8")		LF
				Filter Sock (12")	38	LF
				Filter Sock (18")	300	LF
				Geotextile (Erosion Control)	500	SQ YD
				Silt Fence		LF
				SWPPP Design ǂ	1	LS
				SWPPP Inspection ǂ	51	EACH
				Water Pollution Control Manager ǂ	51	EACH
900 lbs / acre		6.50		Mulch Tacking Slurry	8775	LB
2 tons / acre		6.50		Mulching	19.5	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	NAME	QTY (lb)
0.5	Seed (Blue Grama Grass Seed) (Lovington)	0.65
4.5	Seed (Buffalograss Seed) (Treated)	5.85
45	Seed (Perennial Ryegrass)	58.50
2.6	Seed (Prairie Junegrass)	3.38
6.3	Seed (Side Oats Grama Grass Seed) (El Reno)	8.19
45	Seed (Tall Fescue) (Endophyte Free)	58.50
6	Seed (Western Wheatgrass Seed) (Barton)	7.80
	Total (lb)	142.87

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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File : KA576101LA852a.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	60	118

EROSION CONTROL- CLASS 1, TYPE C

STATION TO STATION	SIDE	LENGTH	WIDTH	SQ YARD
572+38.43 to 572+53.20	RT	14.77	25	41
573+15.08 to 573+29.85	RT	14.77	25	41
587+19.87 to 587+46.77	RT	26.90	15	45
587+76.49 to 588+03.57	LT	27.08	15	45
2+50.00 to 6+57.56	RT	407.56	50	2264
2+50.00 to 6+57.56	LT	407.56	50	2264
TOTAL EROSION CONTROL (CLASS 1, TYPE C) =				4700

EROSION CONTROL- CLASS 2, TYPE E

STATION TO STATION	SIDE	LENGTH	WIDTH	SQ YARD
573+50.00 to 574+50.00	RT	100	28.6	318
586+00.00 to 587+29.72	RT	129.7	18.7	269
573+00.00 to 577+00.00	LT	400	22	978
TOTAL EROSION CONTROL (CLASS 2, TYPE E) =				1565

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.

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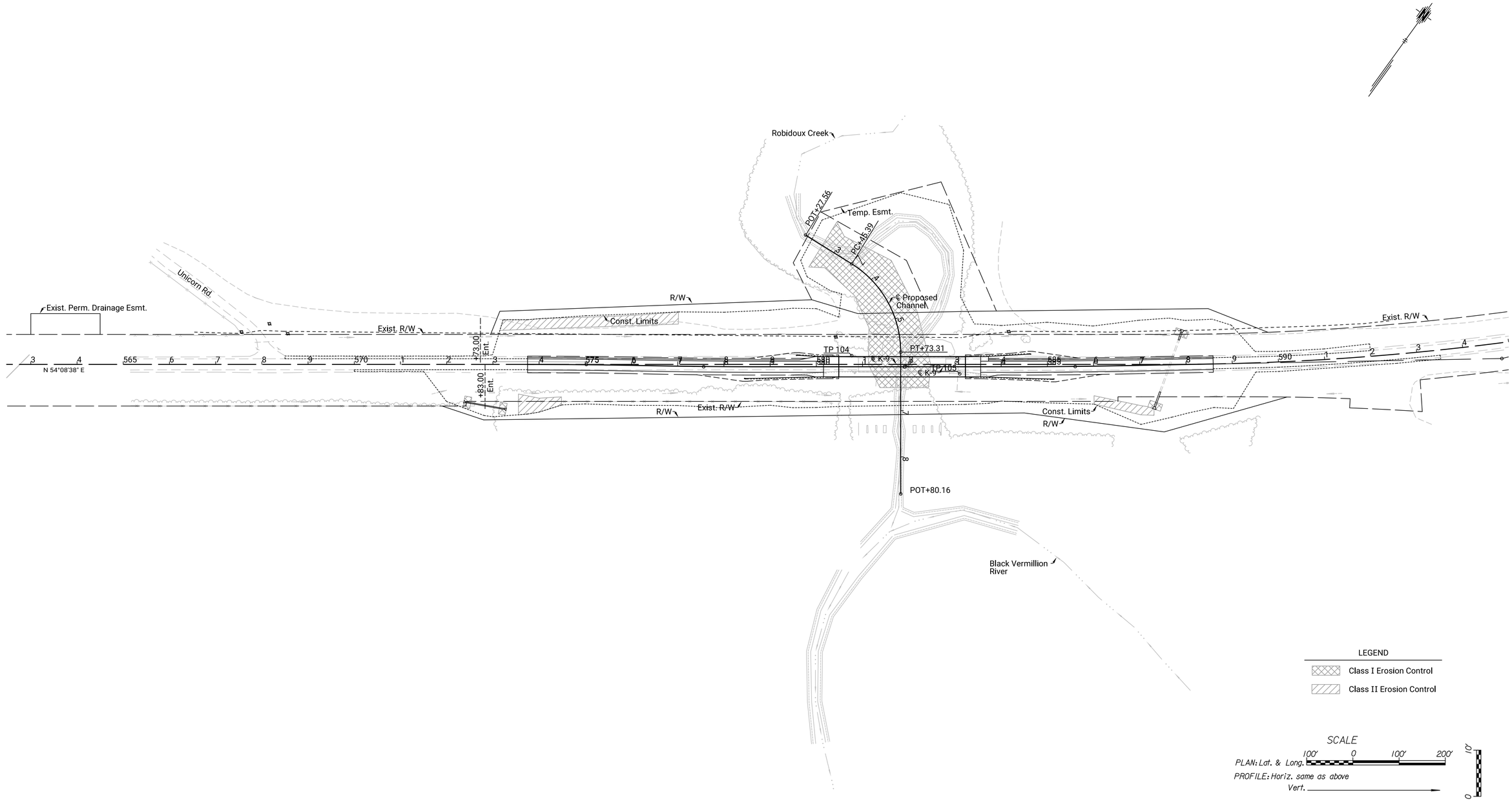
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	61	118

BY	DATE
J. Austin	12/2022
D. Newell	1/2025

REFERENCES NOTED

REFERENCES CHECKED



KANSAS DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

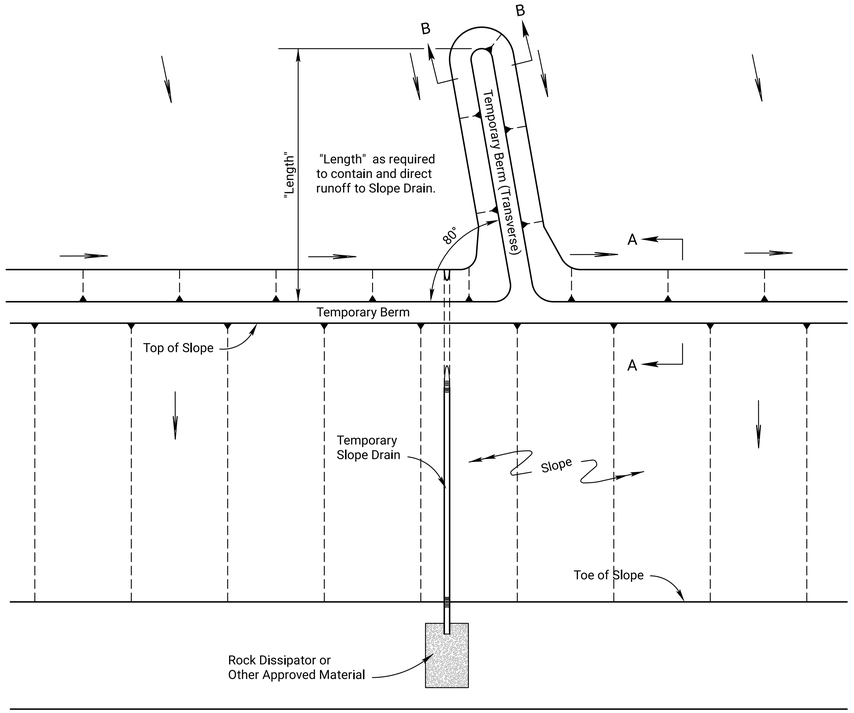
STA. 563+00 TO STA. 595+00

KDOT Graphics Certified 08-05-2025 Sh. No. 61

KDOT Graphics Certified

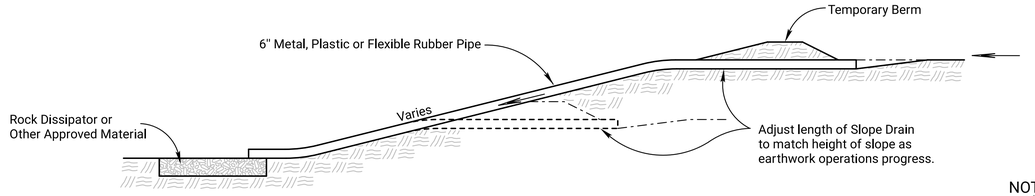
Plotted by : Dylan.Newell@ks.gov 16-OCT-2025 12:14
File : ka576101rec-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	62	118



TYPICAL PLAN VIEW OF TEMPORARY BERM AND TEMPORARY SLOPE DRAIN

NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN

NO SCALE

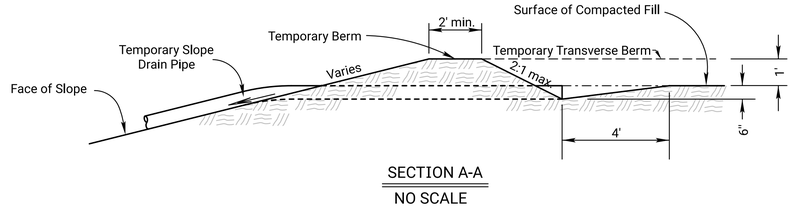
NOTES:

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.

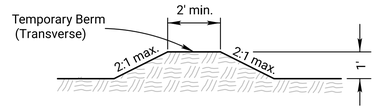
3) Pipe shall be secured in place as approved by Engineer.

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



SECTION A-A

NO SCALE

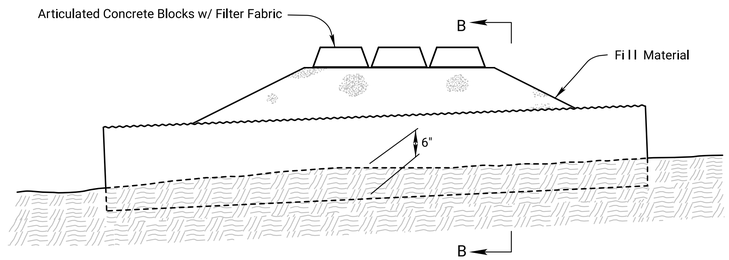


SECTION B-B

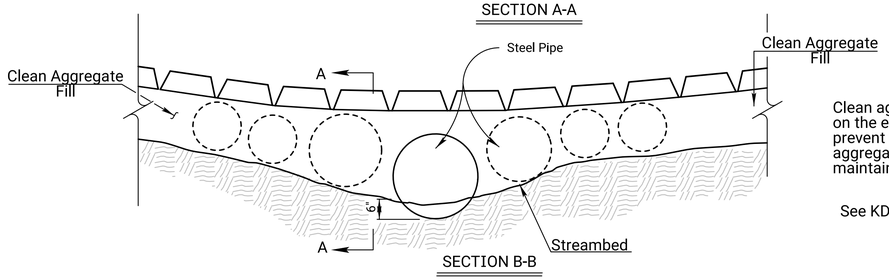
NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM

NO SCALE



SECTION A-A



SECTION B-B

TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)

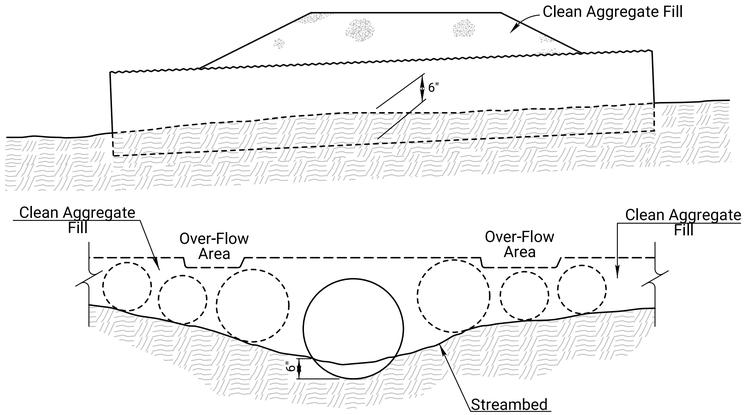
NO SCALE

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

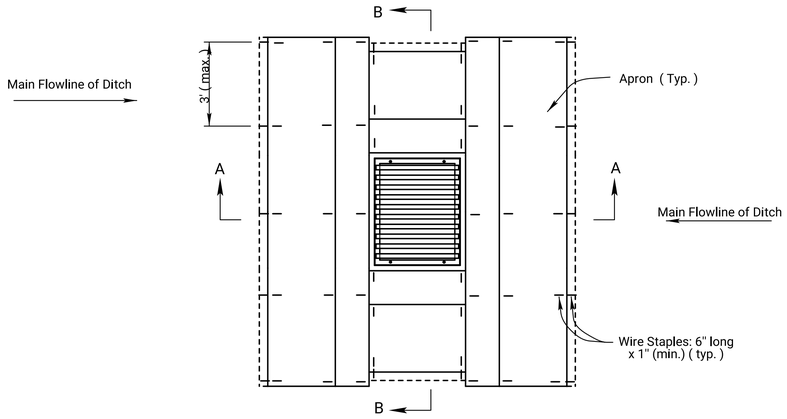
FHWA APPROVAL	01-21-22	APP'D.	Mervin Lare
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 06-17-2022 Sh. No. 62

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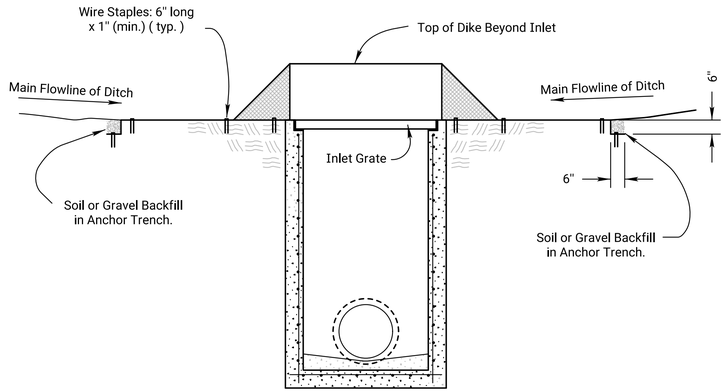
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	63	118



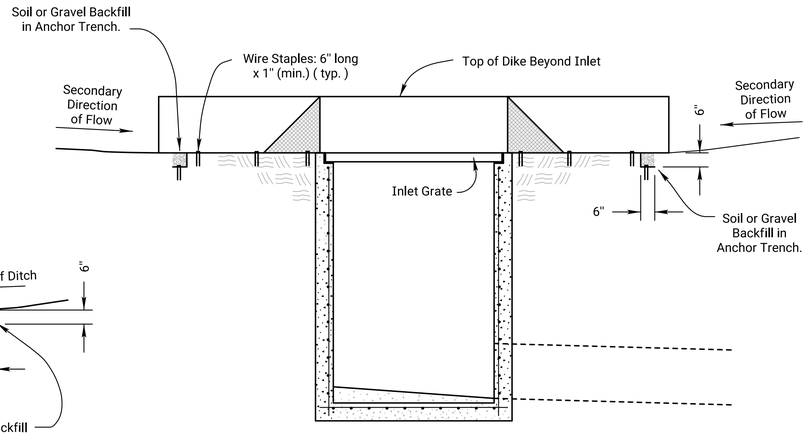
PLAN

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

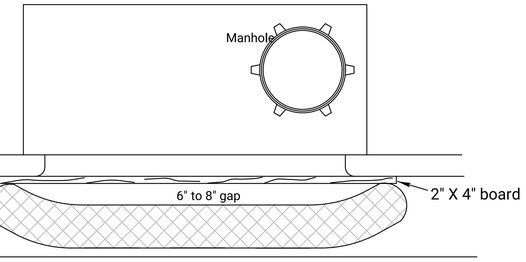
NO SCALE



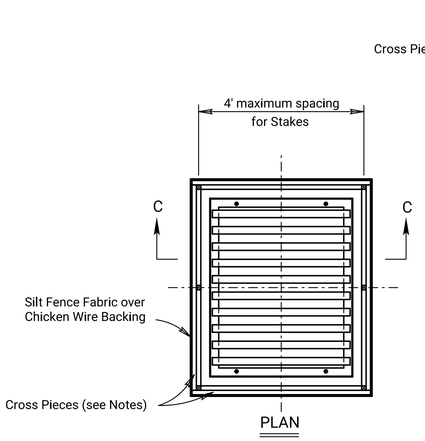
SECTION A - A



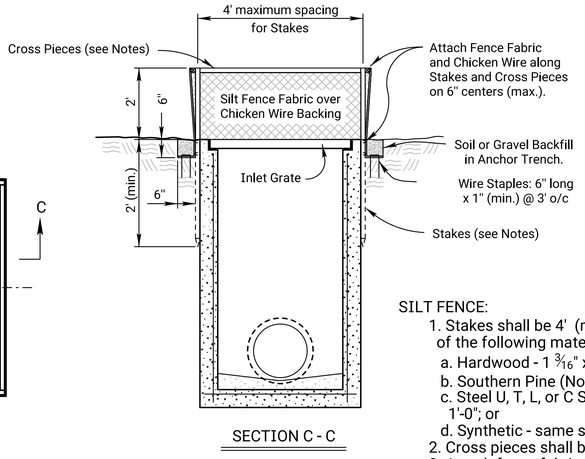
SECTION B - B



CURB INLET PROTECTION



PLAN



SECTION C - C

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

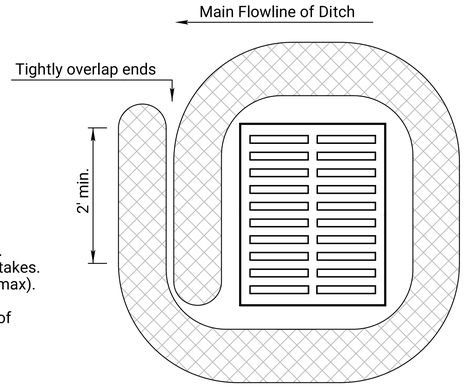
NO SCALE

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

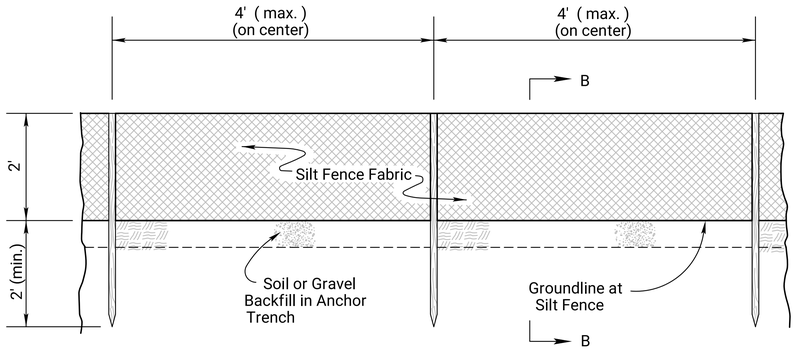
FHWA APPROVAL			03-10-15	APP'D.		Scott H. Shields	
DESIGNED	R.A.	DETAILED	R.A.	QUANTITIES		TRACED	
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	

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File: KA576101LA852C.dgn

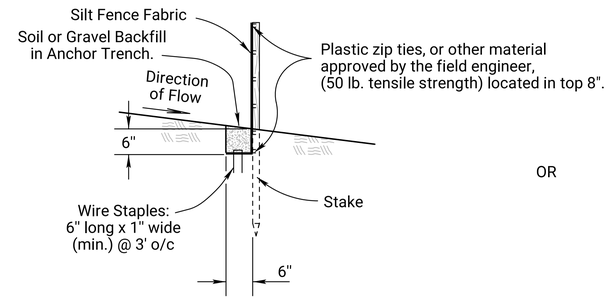
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	64	118



TYPICAL ELEVATION

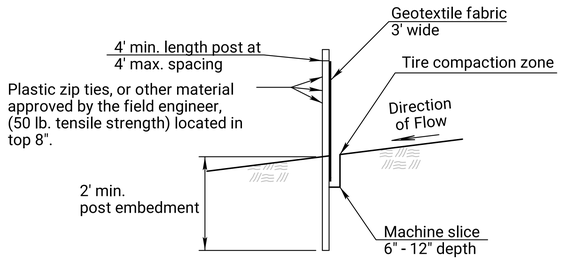
SILT FENCE BARRIER

NO SCALE

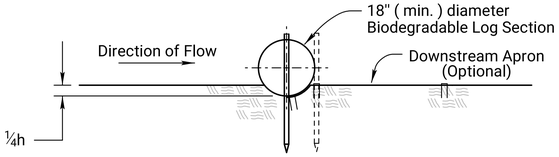


SECTION B-B

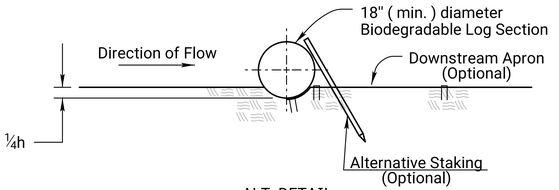
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SECTION B-B

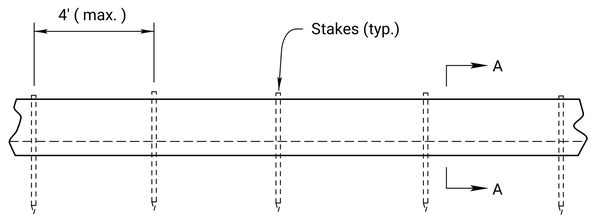


SECTION A - A



ALT. DETAIL

OPTIONAL



TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS

OR Filter Sock

INSTALLATION NOTES

SILT FENCE:

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

BIODEGRADABLE LOG OR FILTER SOCK

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

Biodegradable Log or Filter Sock Slope Interruptions

		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

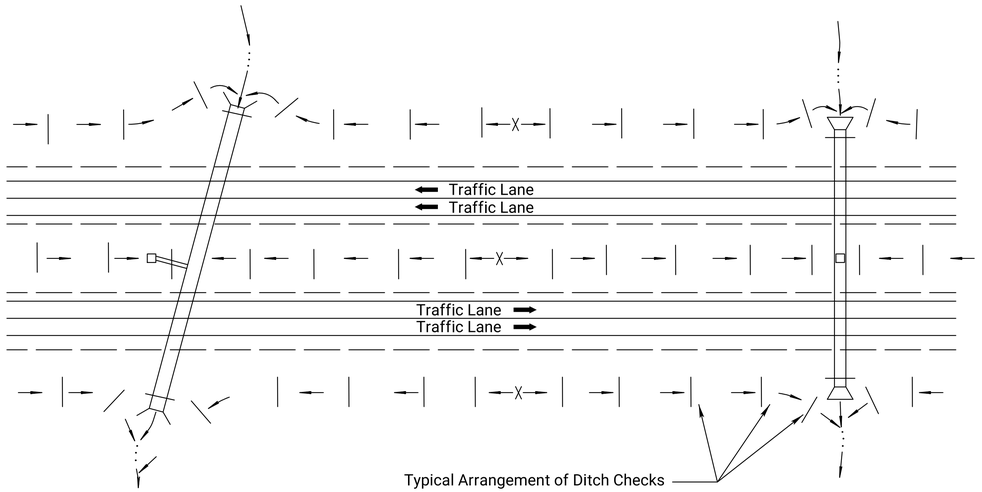
FHWA APPROVAL		09-14-16	APP'D.	Scott H. Shields	
DESIGNED	S.H.S.	DETAILED	R.A.	QUANTITIES	TRACED
DESIGN CK.	S.H.S.	DETAIL CK.		QUAN.CK.	TRACE CK.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	65	118



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

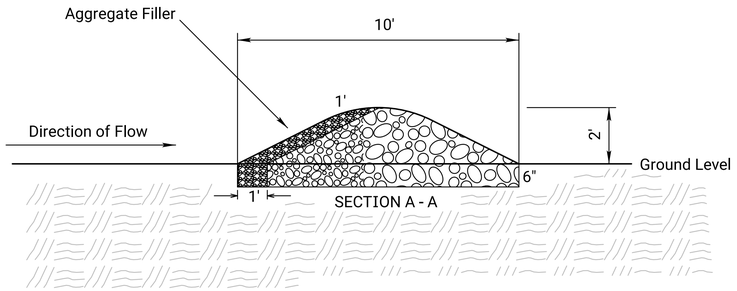
FHWA APPROVAL		09-14-16	APP'D.	Scott H. Shields			
DESIGNED	S.H.S.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	S.H.S.

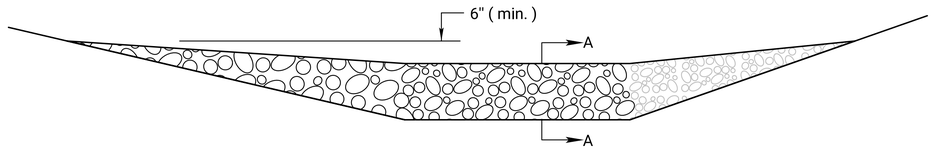
KDOT Graphics Certified 06-18-2022 Sh. No. 65

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File : KA576101LA852E.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	66	118





TYPICAL ELEVATION

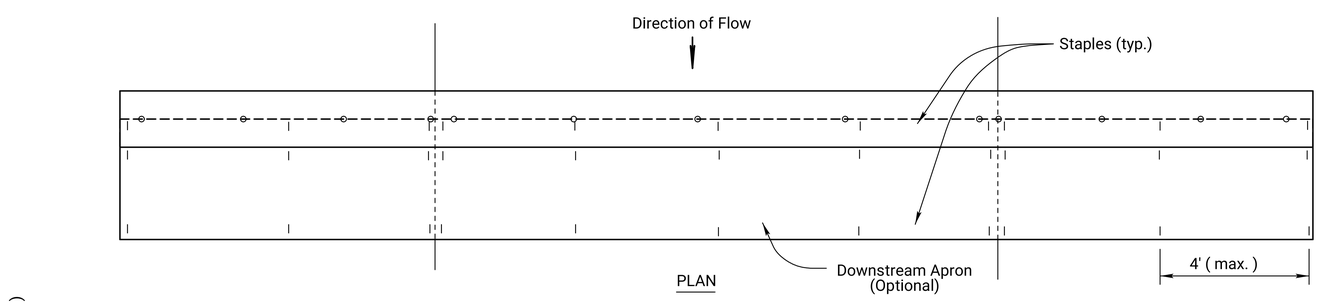
ROCK DITCH CHECK

NO SCALE

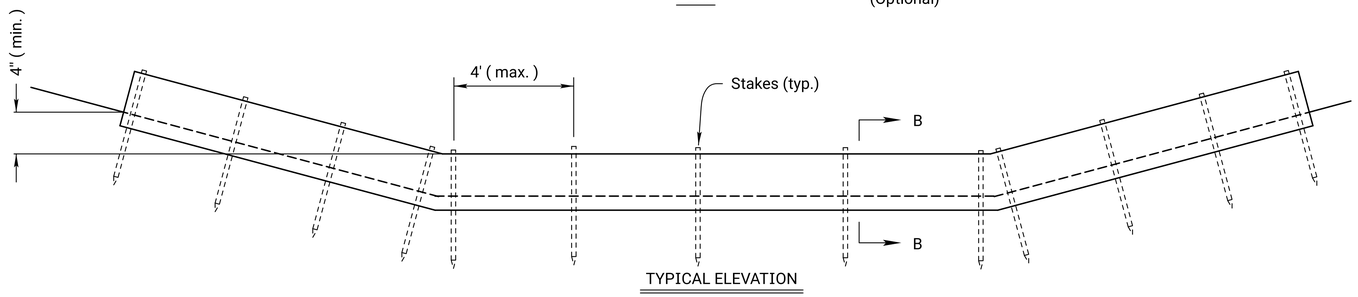
TEMPORARY ROCK DITCH CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
NOTE: Use this spacing for Rock Ditch Checks only.	

ROCK DITCH CHECK NOTES

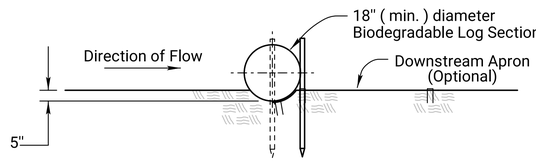
1. Rock shall be clean aggregate, D50-6" and aggregate filler.
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch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



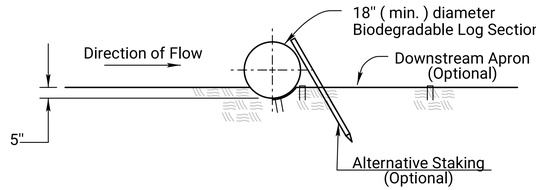
PLAN



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

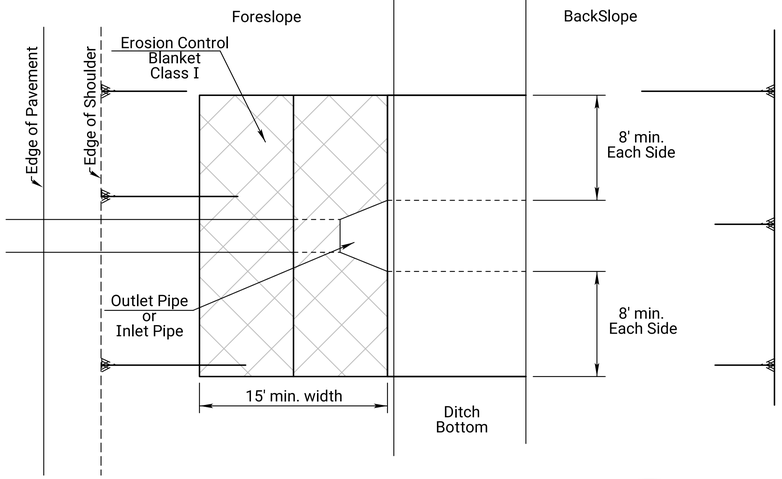
FHWA APPROVAL			11-19-20	APP'D.		Mervin Lare	
DESIGNED	M.L.	DETAILED	D.K.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	M.L.	DETAIL CK.	M.L.	QUAN.CK.		TRACE CK.	R.A.A.

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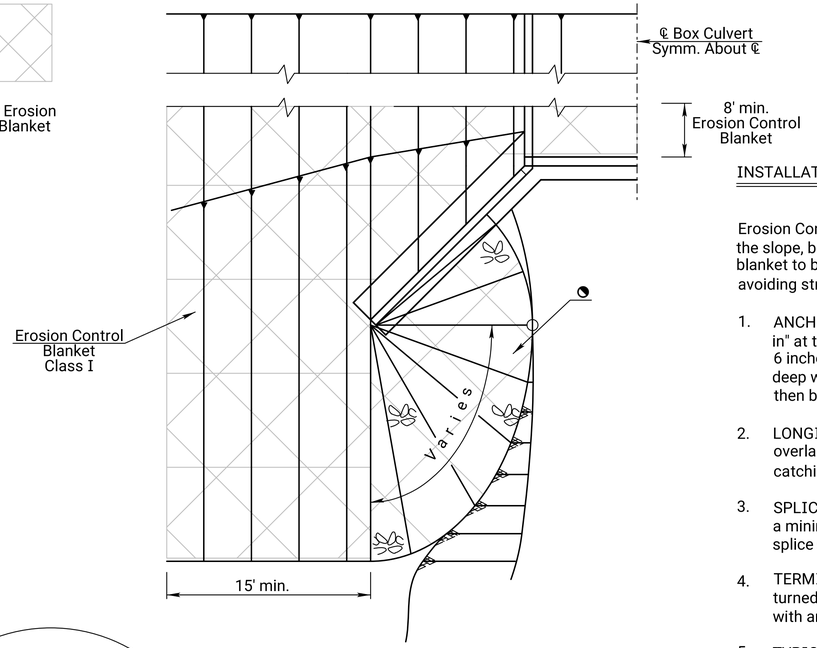
KDOT Graphics Certified

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File : KA576101LA852G.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	67	118



Limits of Erosion Control Blanket



PARTIAL PLAN BOX CULVERT

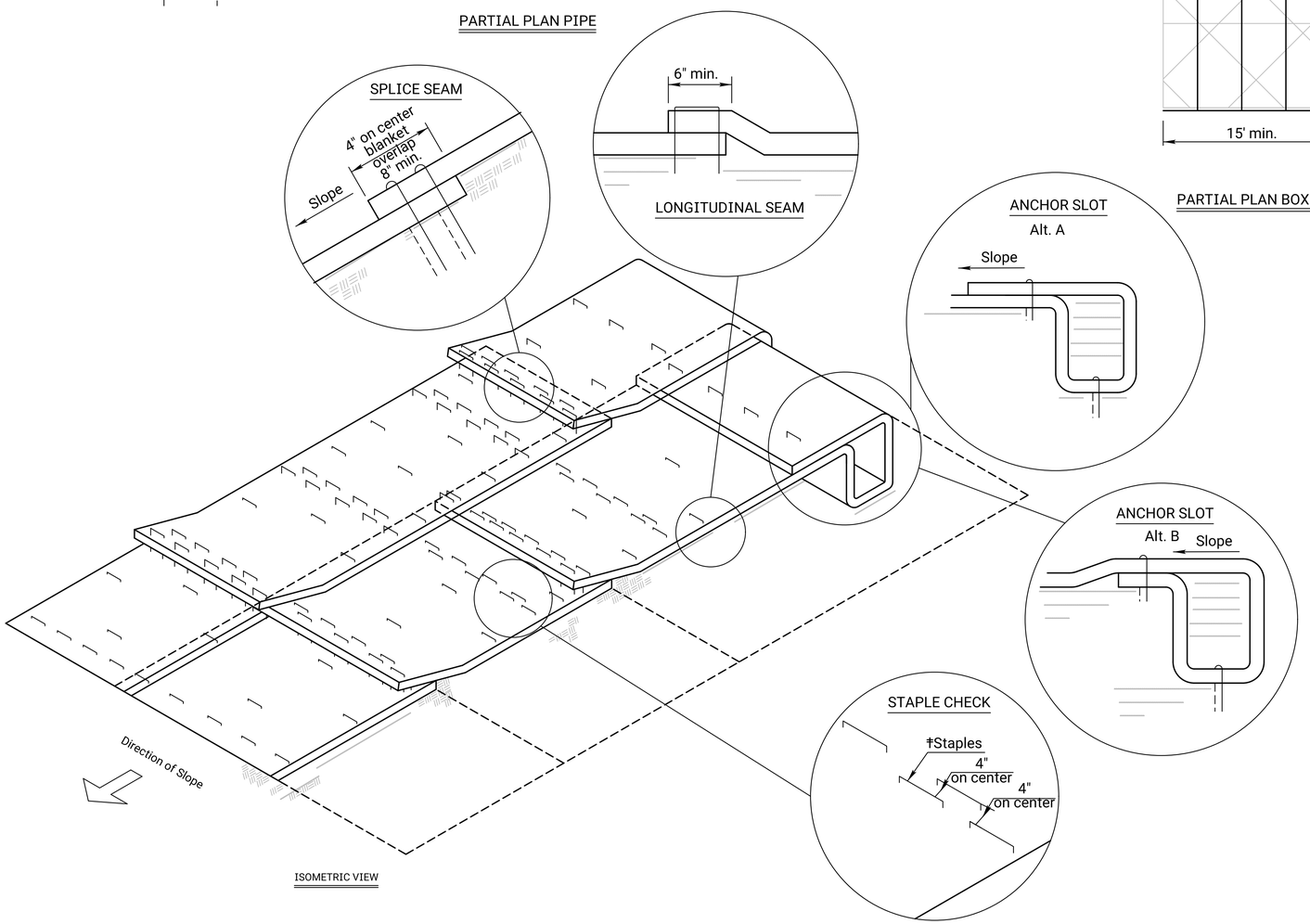
INSTALLATION DETAILS FOR EROSION CONTROL CLASS 1

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.

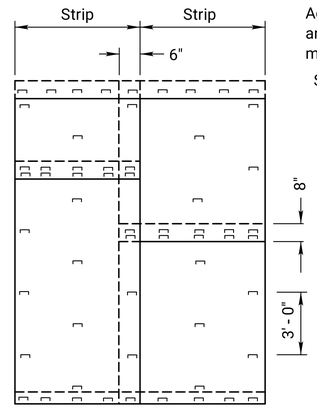
1. ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
2. LONGITUDINAL SEAMS: The 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: ǂEstablish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.

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

PARTIAL PLAN PIPE



ISOMETRIC VIEW



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

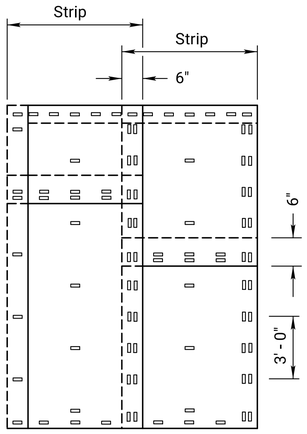
FHWA APPROVAL			03-10-15	APP'D.		Scott H. Shields	
DESIGNED	R.A.A.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	R.A.A.

KDOT Graphics Certified 06-20-2022 Sh. No. 67

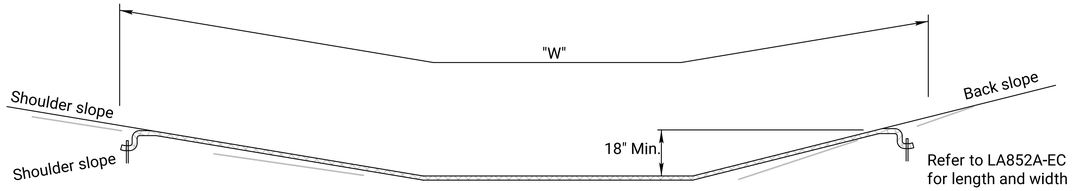
KDOT Graphics Certified

Plotted by: Joseph.Abboud@ks.gov 14-OCT-2025 13:21
File: KA576101LA855.dgn

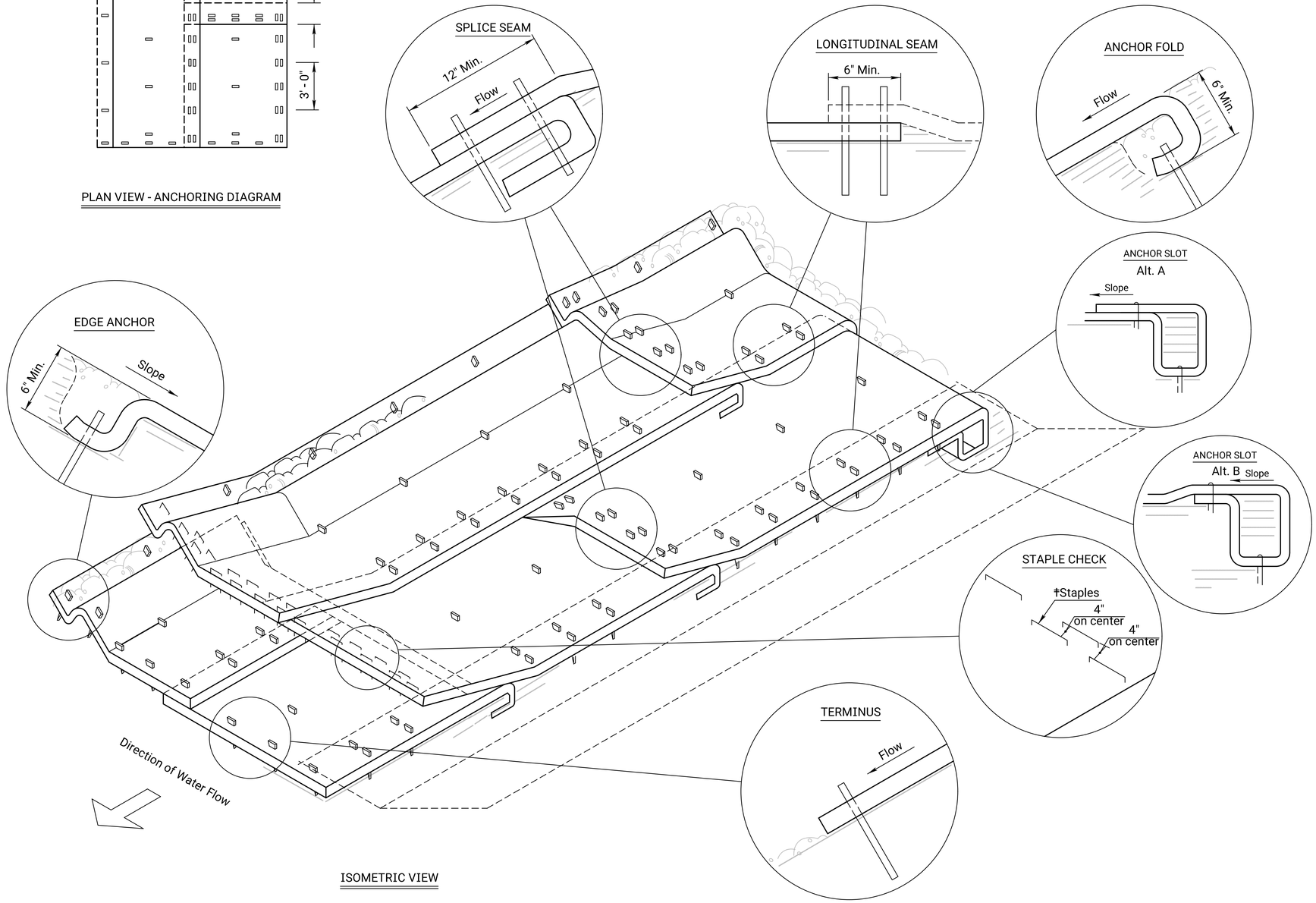
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	68	118



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

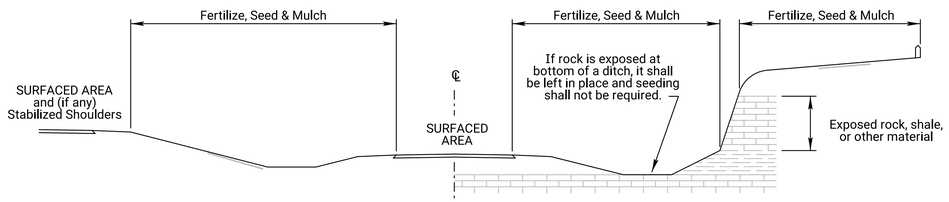
FHWA APPROVAL			11-02-15	APP'D.	Scott H. Shields		
DESIGNED	R.A.A.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	

KDOT Graphics Certified 06-20-2022 Sh. No. 68

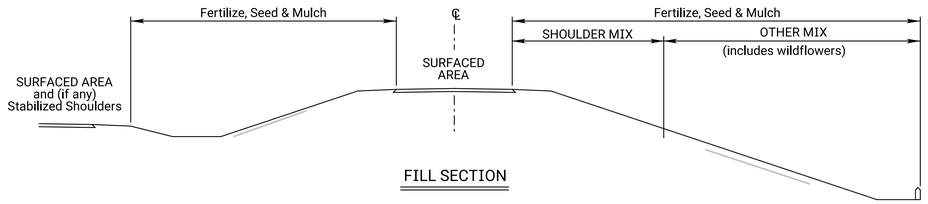
KDOT Graphics Certified

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:21
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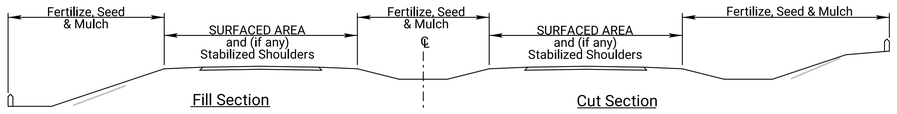
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	69	118



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.

NATIVE WILDFLOWER MIX 1

PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	1.62
0.3	Common Milkweed	1.62
0.3	Black Eyed Susan	1.62
0.5	Blanket Flower	2.71
0.5	False Sunflower	2.71
0.5	Lance-Leaf Coreopsis	2.71
0.2	Maximilian Sunflower	1.08
0.1	New England Aster	0.54
0.2	Pinnate Prairie Coneflower	1.08
0.2	Plains Coreopsis	1.08
0.3	Purple Coneflower	1.62
0.3	Upright Prairie Coneflower	1.62
0.3	Dames Rocket	1.62
0.3	Lemon Mint	1.62
0.2	Pitcher Sage	1.08
0.2	Wild Bergamot	1.08
1.0	Illinois Bundleflower	5.41
0.2	Common Evening Primrose	1.08
0.1	Hoary Verbena	0.54
0.8	Purple Prairie Clover	4.33
0.3	Roundhead Lespedeza	1.62
3.0	Showy Partridge Pea	16.23
0.2	White Prairie Clover	1.08
10.3	Total (lb)	55.70

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 SHLDR	P.L.S. RATE/ACRE OTHER	ACRES SHLDR	ACRES OTHER	BID ITEM	QUANTITY	UNIT
200		1.09		Fertilizer (13-13-13)	218.0	
	80		5.41	Fertilizer (15-30-15)	432.8	
	2		5.41	Seed (Big Bluestem Grass Seed) (Kaw)	10.8	
0.5		1.09		Seed (Blue Grama Grass Seed) (Lovington)	0.5	
4.5		1.09		Seed (Buffalograss Seed) (Treated)	4.9	
	10		5.41	Seed (Canada Wildrye Grass Seed)	54.1	
	2		5.41	Seed (Indiangrass Seed) (Osage)	10.8	
	2		5.41	Seed (Little Bluestem Grass Seed) (Aldous)	10.8	
45		1.09		Seed (Perennial Ryegrass)	49.1	
2.6		1.09		Seed (Prairie Junegrass)	2.8	
6.3	6.3	1.09	5.41	Seed (Side Oats Grama Grass Seed) (El Reno)	41.0	
	10		5.41	Seed (Sterile Wheatgrass) (Regreen/Quick Guard)	54.1	
	0.7		5.41	Seed (Switchgrass Seed) (Blackwell)	3.8	
	0.5		5.41	Seed (Tall Dropseed)	2.7	
45		1.09		Seed (Tall Fescue) (Endophyte Free)	49.1	
6	4	1.09	5.41	Seed (Western Wheatgrass Seed) (Barton)	28.2	
	10.3		5.41	Seed (Native Wildflower Mix 1)	55.7	
				Mulching ✳		

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

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

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

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

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

NO.	DATE	REVISIONS	BY	APP'D
02	11-25-20	Updated Seeding / Sodding Periods Charts	M.R.D.	M.L.
01	08-03-20	Revised Standard	M.R.D.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

PERMANENT SEEDING SUMMARY OF SEEDING QUANTITIES

LA850

FHWA APPROVAL	05-06-19	APP'D.	Mervin Lare
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 06-17-2025 Sh. No. 69

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Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:20
File : KA576101LA850.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	70	118

SYMBOL KEY

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

GENERAL NOTES

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

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

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

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

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

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

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

INDEX OF SHEETS

SIGNING INDEX, SYMBOLS, & GENERAL NOTES
POST SPACING & SIGN ANGLE DETAILS
HEIGHT & LATERAL DISTANCE FOR ERECTION
POSITIONING, DESIGN, & MOUNTING OF DELINEATORS
POSITIONING, DESIGN, & MOUNTING FOR OBJECT MARKERS (TYPE 2 & 3)
POSITIONING FOR CHEVRON (W1-8) SIGNS
PLAN SHEETS (INSTALLATIONS)
PLAN SHEETS (REMOVALS)
QUANTITIES SHEETS (INSTALLATIONS)
QUANTITIES SHEET (DELINEATORS & OBJECT MARKERS)
SUMMARY SHEET (INSTALLATIONS & REMOVALS)
SUMMARY SHEET (REMOVAL & RESET)
RECAPITULATION SHEET
STANDARD STRUCTURAL SIGN SUPPORTS (WOOD & STEEL POSTS)
MOUNTING OF SIGNS ON WOOD POSTS
MOUNTING OF FLAT SHEET SIGNS ON STEEL I-BEAM POSTS
MOUNTING OF REINFORCED PANEL SIGNS ON I-BEAM POSTS
DETAILS FOR FLAT SHEET SIGN BLANKS
DETAILS FOR PROCESSED SIGNS
DETAILS FOR REINFORCED PANELS
DETAILS FOR GUIDE SIGN LEGEND
DETAILS FOR GUIDE SIGNS
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

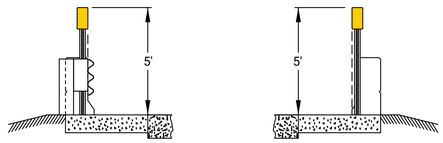
FHWA APPROVAL			10-01-19	APP'D.	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES	TRACED		
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.		

KDOT Graphics Certified 02-13-2023 Sh. No. 70

KDOT Graphics Certified

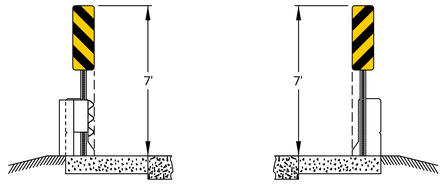
Plotted by : Jake.Comstock@ks.gov 9-OCT-2025 12:54
File : KA576101pss402-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	71	118



WITH GUARDRAIL WITHOUT GUARDRAIL

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

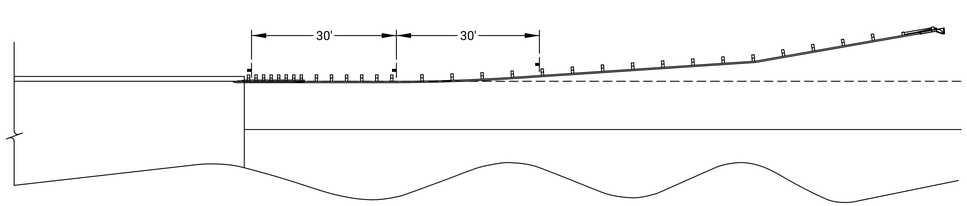


WITH GUARDRAIL WITHOUT GUARDRAIL

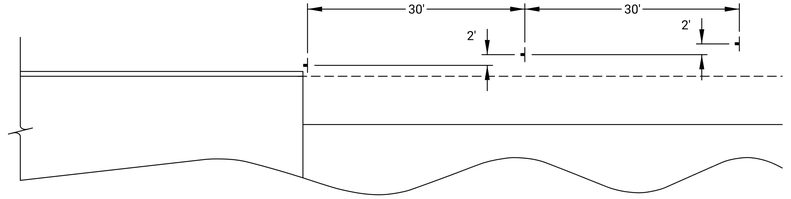
SHOULDER WIDTH LESS THAN 6 FEET (TYPE 3 OBJECT MARKER)

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

END OF STRUCTURE

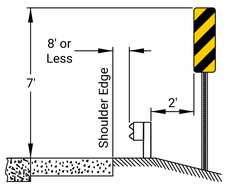


LONGITUDINAL PLACEMENT

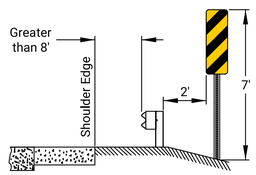


LONGITUDINAL PLACEMENT

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

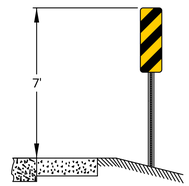


GUARDRAIL 8' OR LESS FROM SHOULDER EDGE



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

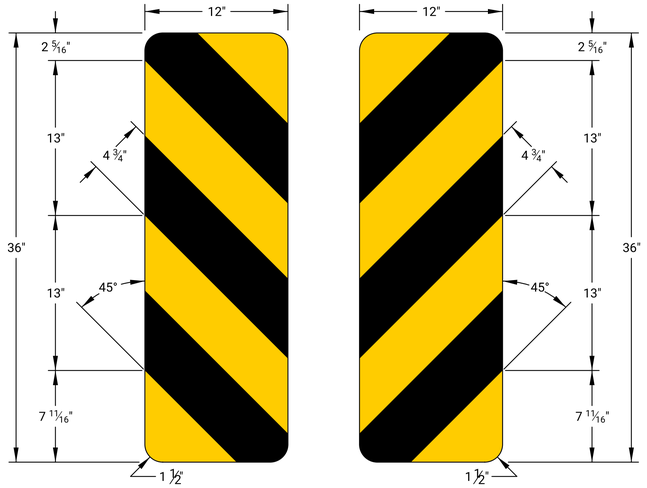
FHWA APPROVAL		10-01-19	APP'D.	Eric W. Nichol			
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES	TRACED		
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN.CK.	TRACE CK.		

KDOT Graphics Certified 05-25-2022 Sh. No. 71

KDOT Graphics Certified

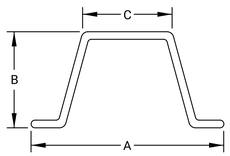
Plotted by : Jake.Comstock@ks.gov 9-OCT-2025 12:55
File : KA576101pss415-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	72	118



OM3-L

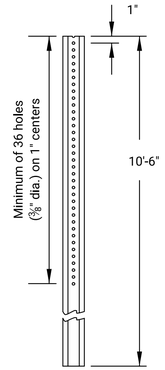
OM3-R



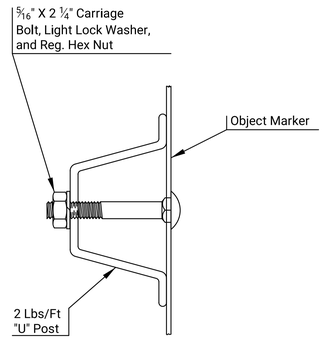
DIMENSIONS	
A	3 1/8
B	1 17/32
C	1 1/4

(Dimensions are nominal)

2 lb/ft "U" POST



PUNCHING DETAILS



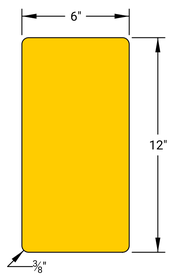
MOUNTING DETAILS

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

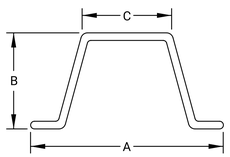
TYPE 3 OBJECT MARKER

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.



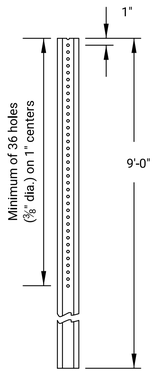
OM2



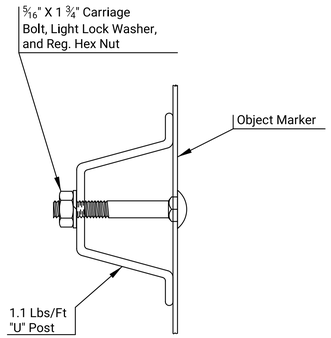
DIMENSIONS	
A	2 1/16
B	7/8
C	13/16

(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. 72

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File : KA576101pss416-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	73	118

SCALE 1" = 100'


580'
580'
580'

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	74	118

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	LEFT	RIGHT	CENTER	BACK TO BACK
573+75.00	588+58.80	K-9 MAINLINE																									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 10-15-2025 Sh. No. 74

KDOT Graphics Certified

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File : KA576101pss436-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	75	118

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 10-15-2025 Sh. No. 75

KDOT Graphics Certified

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File : KA576101pss439-01.dgn

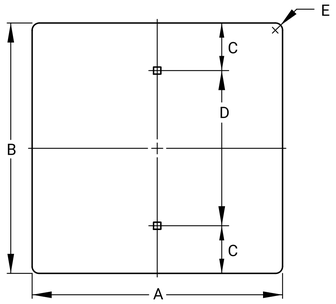
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	76	118

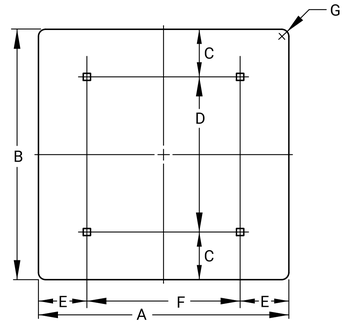
RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

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	9-58 KA-5761-01	2025	77	118





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

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

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

NOTE:
All holes are 3/8" square, unless otherwise noted.

The dimension "T" is the thickness of the aluminum blank.

(1) Holes shall be 5/16" diameter.

(2) Dimension "D" requires a center hole.

(3) Additional hole 12" below top hole.

All dimensions are in inches.

NO.	DATE	REVISIONS	BY	APP'D
01	10-01-19	Updated sign blank details and dimensions	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGN BLANK DETAILS FOR FLAT SHEET SIGNS

TE506 07-01-03

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

KDOT Graphics Certified 05-26-2022 Sh. No. 77

KDOT Graphics Certified

Plotted by : Jake.Comstock@ks.gov 9-OCT-2025 12:55
File : KA576101pss506-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	78	118

DETAILED SPECIFICATIONS FOR FLAT SHEET SIGNS AND OVERLAY PANELS

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

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

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

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

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

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

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

DETAILED SPECIFICATIONS FOR REINFORCED PANEL SIGNS

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

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

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

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

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

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

Spacing table dimensions are in inches.

NO.	DATE	REVISIONS	BY	APP'D
02	10-01-19	Changed notes	D.D.G.	E.W.N.
01	07-23-10	Changed Notes and Sheeting Type	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS SPECIFICATIONS FOR REINFORCED SIGN PANELS AND FLAT SHEET SIGNS

TE590 07-01-03

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

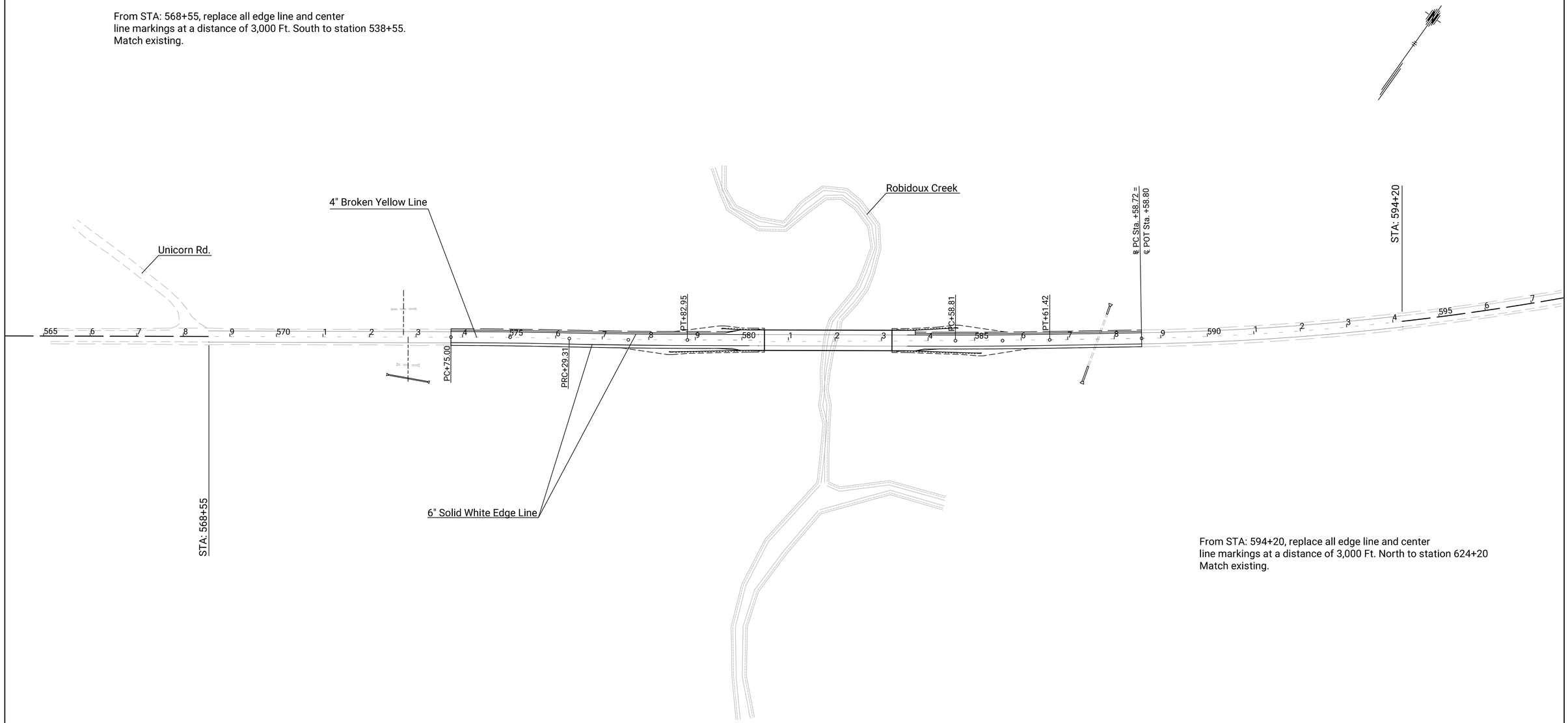
KDOT Graphics Certified 05-24-2022 Sh. No. 78

KDOT Graphics Certified

Plotted by : Jake.Comstock@ks.gov 9-OCT-2025 12:55
File : KA576101pss590-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	79	118

From STA: 568+55, replace all edge line and center
line markings at a distance of 3,000 Ft. South to station 538+55.
Match existing.



From STA: 594+20, replace all edge line and center
line markings at a distance of 3,000 Ft. North to station 624+20
Match existing.

Plotted by : Jonny.Madrid@ks.gov 14-OCT-2025 16:53
File : ka576101mpl-01.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING
MAIN LINE K-9

STA: 568+55 - STA: 594+20

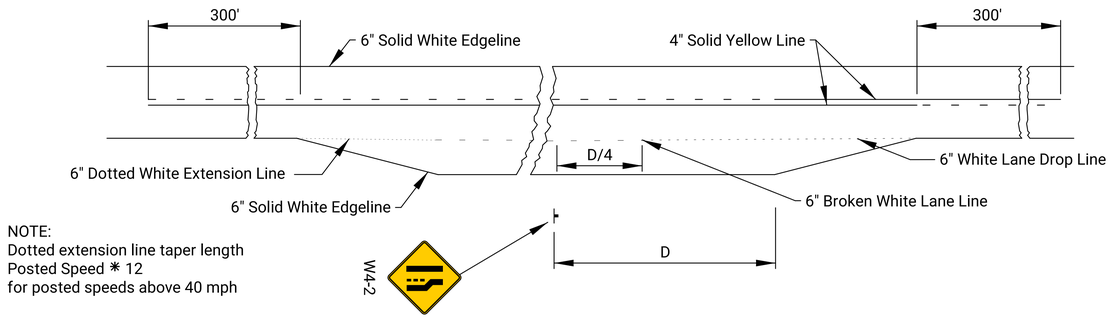
APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

KDOT Graphics Certified 09-19-2024

Sh. No. 79

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	80	118

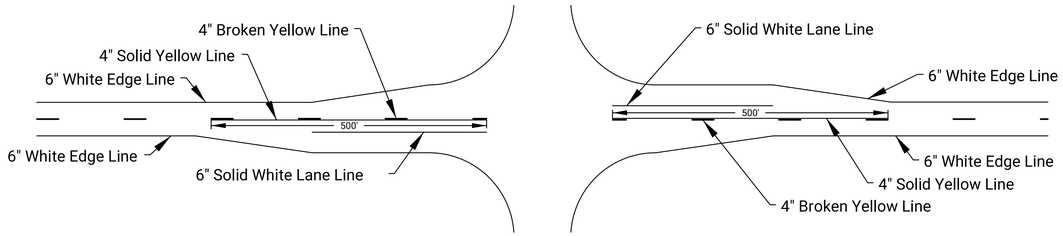


NOTE:
Dotted extension line taper length
Posted Speed ✳ 12
for posted speeds above 40 mph

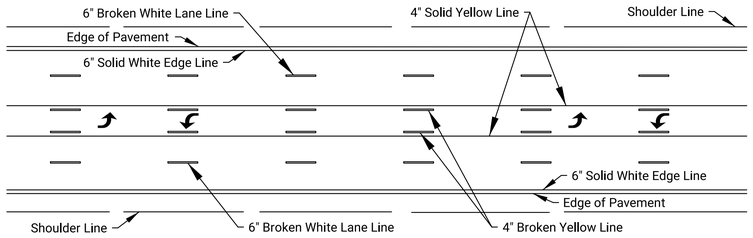
TYPICAL MARKING FOR AUXILIARY PASSING LANE

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

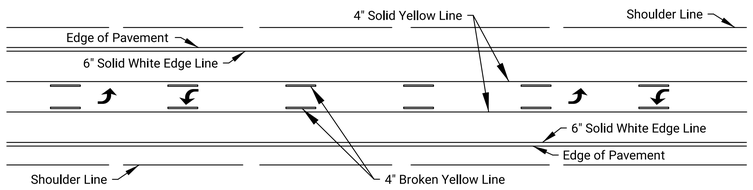
For highway junctions the no passing zone will extend 1000' from intersection.



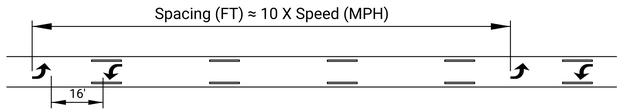
TYPICAL ROAD JUNCTION MARKINGS WITH BYPASS LANES



TWO-WAY LEFT TURN DETAIL FOR FIVE LANE ROADWAY

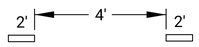


TWO-WAY LEFT TURN DETAIL FOR THREE LANE ROADWAY

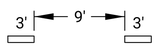


TWO-WAY LEFT TURN ARROW SPACING DETAIL

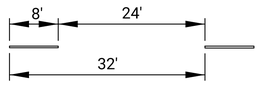
NOTE:
If arrows are used space the arrows as shown in the spacing detail.



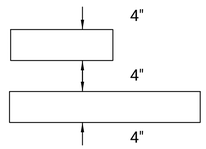
TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.



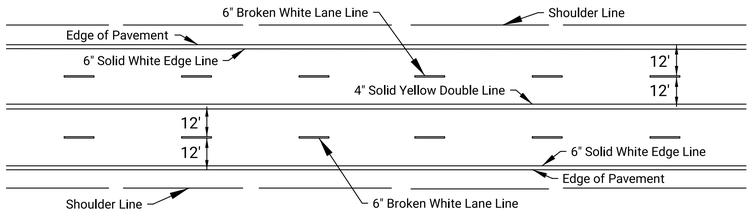
TYPICAL SPACING FOR LANE DROP, UNLESS OTHERWISE NOTED ON PLANS.



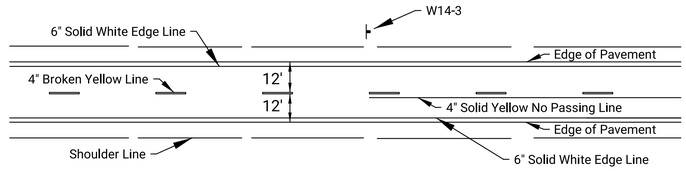
TYPICAL SPACING FOR BROKEN LINES, UNLESS OTHERWISE NOTED ON PLANS



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. 80

KDOT Graphics Certified

Plotted by : Jonny.Madrid@ks.gov 14-OCT-2025 16:52
File : te308.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	81	118

SUMMARY OF PAVEMENT MARKINGS

LOCATION	4" Solid WHITE Edge Line	6" Solid WHITE Edge Line	6" Broken WHITE Lane Line	6" Broken WHITE Lane Line (PCP)	6" Dotted WHITE Extension Line	6" Broken WHITE Lane Drop Line	6" Solid WHITE Lane Line	8" Broken WHITE Lane Drop Line	8" Solid WHITE Gore Line	8" Dotted WHITE Extension Line	12" Solid WHITE Diagonal Line	12" Solid WHITE Chevron Line	12" Solid WHITE Type I Crosswalk Line	24" Solid WHITE Type II Crosswalk Line	24" Solid WHITE Stop Line	4" Solid YELLOW Edge Line	4" Solid YELLOW Double Line	4" Solid YELLOW Line	4" Broken YELLOW Line	6" Solid YELLOW Edge Line	12" Solid YELLOW Diagonal Line
MAINLINE K-9																					
STA: 538+55 - STA:624+20																					
		17,035																	8,565		
TOTALS		17,035																	2,142		

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION							STOP	ONLY	X-ING	SCHOOL	70	435	24	400	18							
TOTALS																						

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	17,035	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")	2,142	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	12,000	FT

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 09-19-2024 Sh. No. 81

KDOT Graphics Certified

Plotted by : Jonny.Madrid@ks.gov 14-OCT-2025 16:53
File : te311.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	82	118

PHASE 1

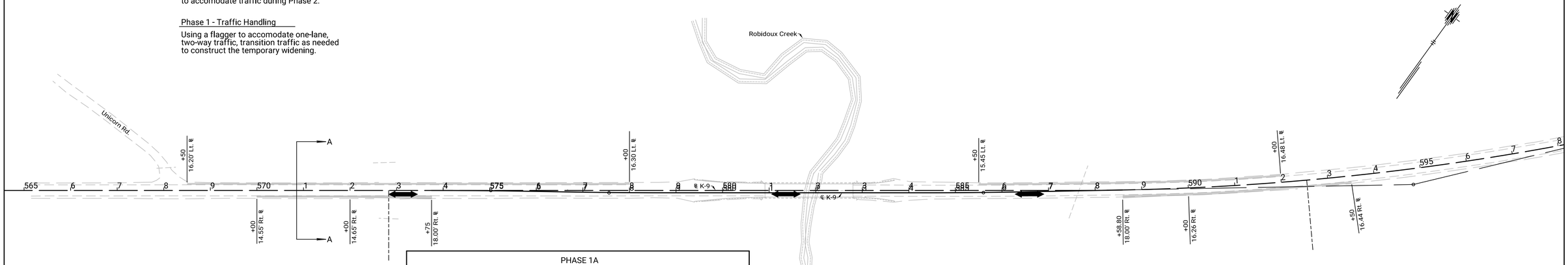
Phase 1 - Construction

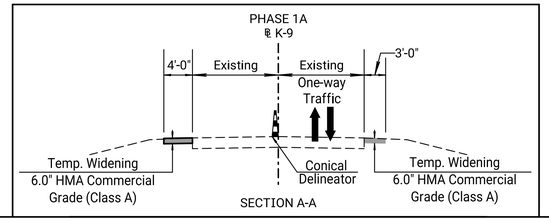
A) Construct Temp Widening Rt. ℄ Sta. 570+00 to ℄ Sta. 573+75 and from Rt. ℄ Sta. 588+58.80 to ℄ Sta. 593+50.

B) Construct Temp Widening Lt. ℄ Sta. 568+50 to ℄ Sta. 578+00 and from Lt. ℄ Sta. 585+50 to ℄ Sta. 592+00. Upgrade blunt end terminals Lt. to accomodate traffic during Phase 2.

Phase 1 - Traffic Handling

Using a flagger to accomodate one-lane, two-way traffic, transition traffic as needed to construct the temporary widening.





LEGEND

- Construction (Current Phase)
- Construction (Previous Phase)
- Traffic Direction
- Eradication

SCALE

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

PROFILE: Horiz. same as above

Vert. 10' 0

PHASE 2

Phase 2 - Traffic Handling

Shift traffic to existing westbound lane, using a flagger to accomodate one-lane, two-way traffic. Once the temporary concrete safety barrier has been installed, traffic will shift to utilizing the temporary signals. Unicorn Rd will be closed for the duration of construction. Contractor will be responsible for maintaining access to both field entrances during construction.

Phase 2 - Construction

A) Install temporary signals and place temporary concrete safety barrier to accomodate one-lane, two-way traffic during Phase 2

B) Construct pavement and shoulder Rt. from ℄ Sta. 573+75 to E.W.S. ℄ Sta. 580+48.53 and from E.W.S. ℄ Sta. 583+22.53 to ℄ Sta. 588+58.80. Install guardrail Rt.

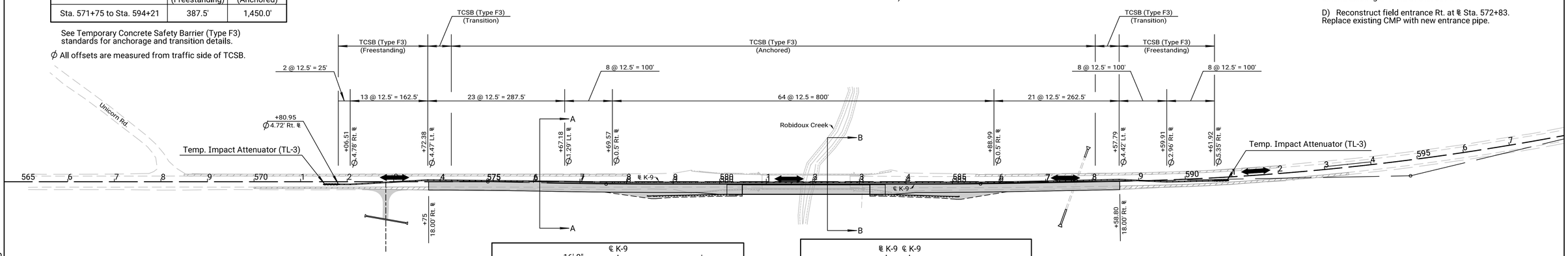
C) Construct Rt. side of Bridge No. 9-58-240.51(075). Extend existing CRP Rt. at Sta. 587+66

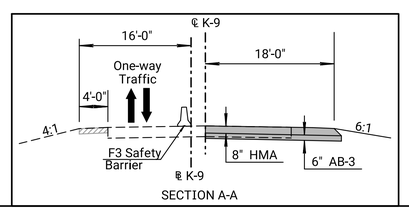
D) Reconstruct field entrance Rt. at ℄ Sta. 572+83. Replace existing CMP with new entrance pipe.

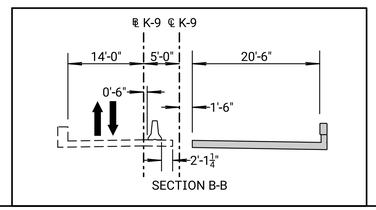
Temporary Concrete Safety Barrier (Type F3) Phase 2		
Station to Station	Type F3 (Freestanding)	Type F3 (Anchored)
Sta. 571+75 to Sta. 594+21	387.5'	1,450.0'

See Temporary Concrete Safety Barrier (Type F3) standards for anchorage and transition details.

ϕ All offsets are measured from traffic side of TCSB.







KANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION SEQUENCING

PHASE 1 & 2

Sh. No. 82

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 15:49
File : KA576101rcs-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	83	118

PHASE 3

Phase 3 - Construction

A) Relocate temporary concrete safety barrier to accomodate one-lane, two-way traffic during Phase 3

B) Construct pavement and shoulder Lt. from ℄ Sta. 573+75 to E.W.S. ℄ Sta. 580+48.53 and from E.W.S. ℄ Sta. 583+22.53 to ℄ Sta. 588+58.80. Install guardrail Lt.

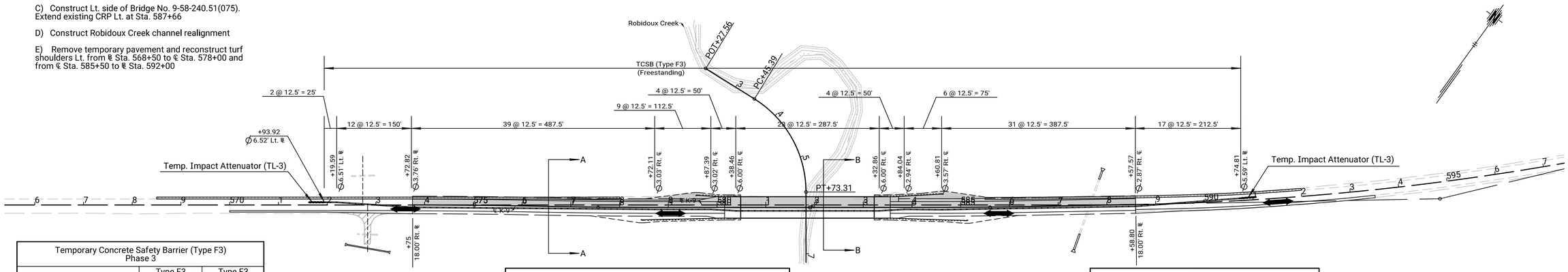
C) Construct Lt. side of Bridge No. 9-58-240.51(075). Extend existing CRP Lt. at Sta. 587+66

D) Construct Robidoux Creek channel realignment

E) Remove temporary pavement and reconstruct turf shoulders Lt. from ℄ Sta. 568+50 to ℄ Sta. 578+00 and from ℄ Sta. 585+50 to ℄ Sta. 592+00

Phase 3 - Traffic Handling

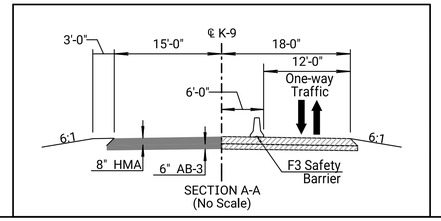
Shift traffic to existing eastbound lane, using temporary signals to accomodate one-lane, two-way traffic.

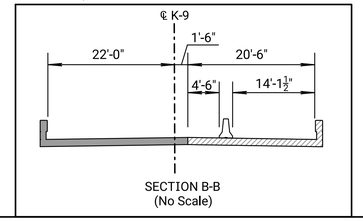


Temporary Concrete Safety Barrier (Type F3) Phase 3		
Station to Station	Type F3 (Freestanding)	Type F3 (Anchored)
Sta. 571+94 to Sta. 590+75	1,837.5'	0.0'

See Temporary Concrete Safety Barrier (Type F3) standards for anchorage and transition details.

Relocate TCSB utilized during Phase 2 Construction





LEGEND

- Construction (Current Phase)
- Construction (Previous Phase)
- Traffic Direction
- Eradication

∅ All offsets are to measured from traffic side of TCSB

PHASE 4

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

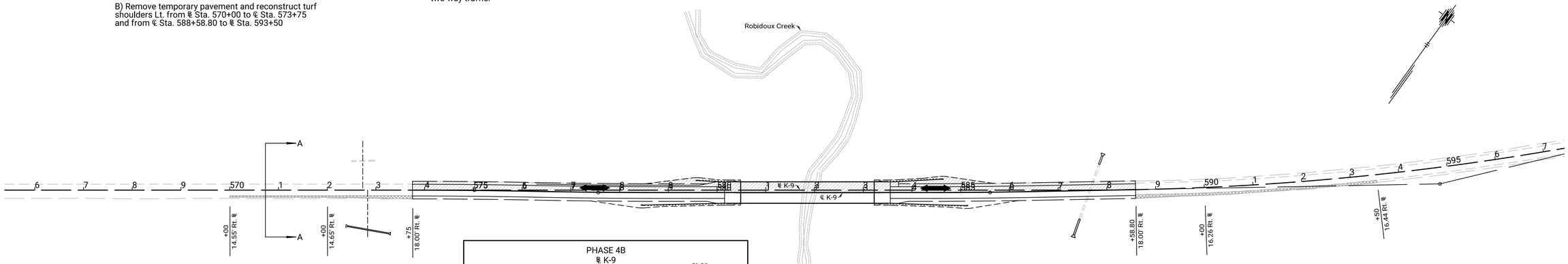
Phase 4 - Construction

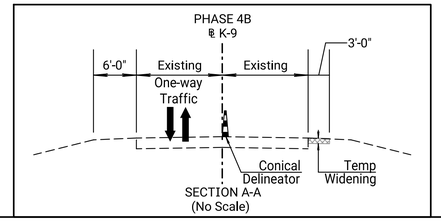
A) Remove temporary signals and temporary concrete safety barrier utilized during Phase 4

B) Remove temporary pavement and reconstruct turf shoulders Lt. from ℄ Sta. 570+00 to ℄ Sta. 573+75 and from ℄ Sta. 588+58.80 to ℄ Sta. 593+50

Phase 4 - Traffic Handling

Shift traffic to existing westbound lane, using a flagger to accomodate one-lane, two-way traffic.





KANSAS DEPARTMENT OF TRANSPORTATION

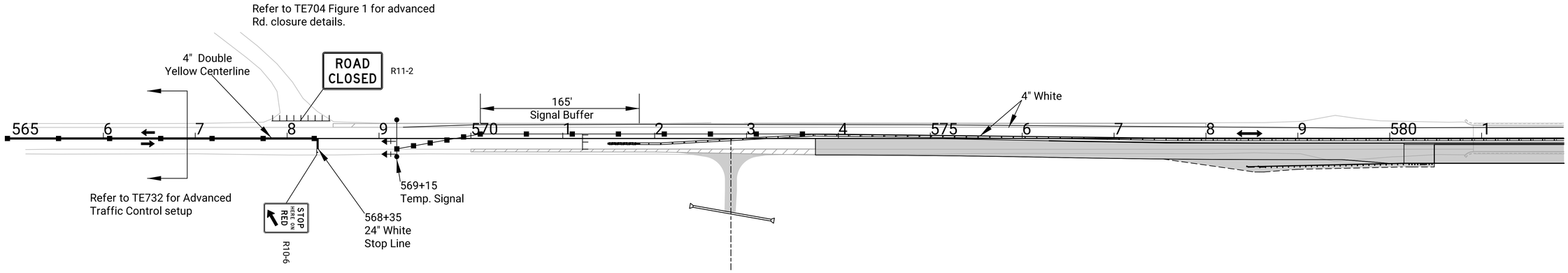
CONSTRUCTION SEQUENCING

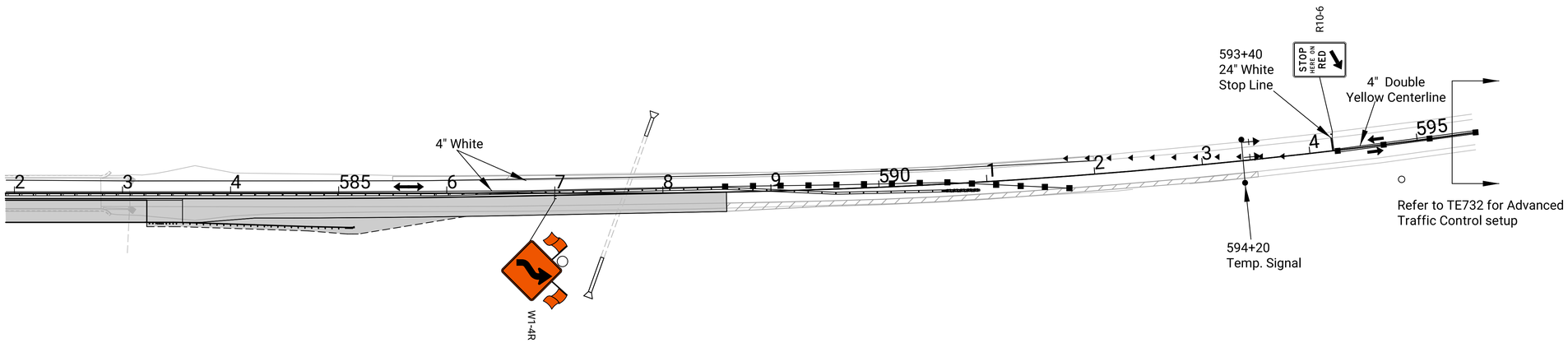
PHASE 3 & 4

Sh. No. 83

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 15:50
File : ka576101rcs-02.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	84	118





NOT TO SCALE

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

KANSAS DEPARTMENT OF TRANSPORTATION

Traffic Control
Phase 2

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

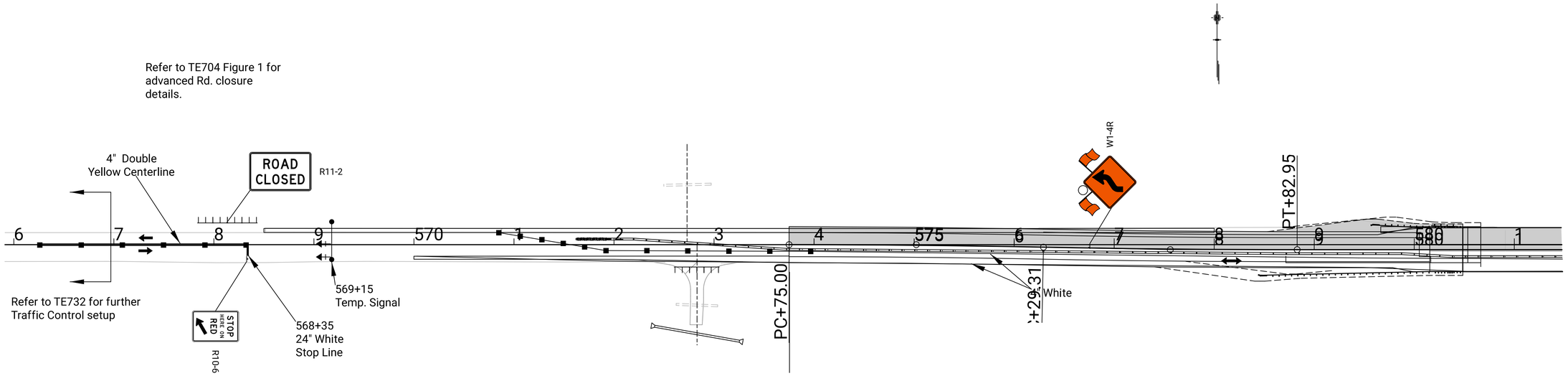
KDOT Graphics Certified 12-18-2024

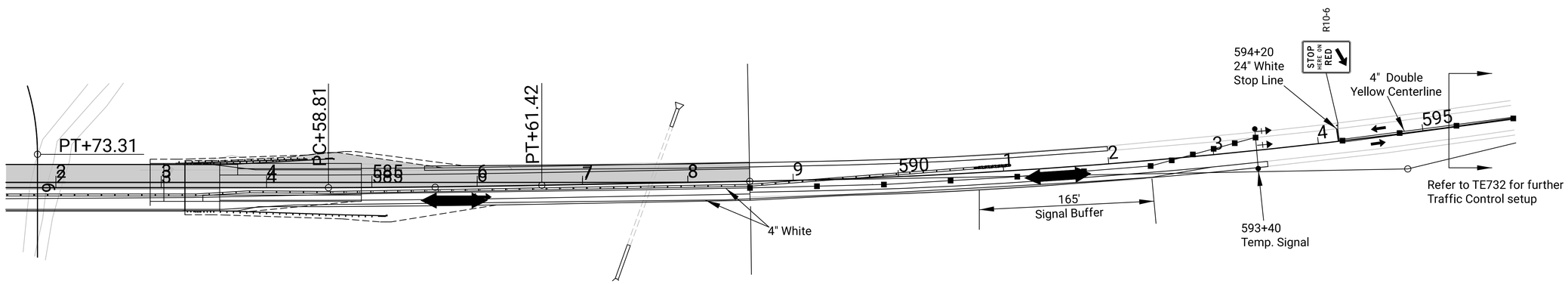
Sh. No. 84

KDOT Graphics Certified

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:24
File : ka576101cpl-02.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	85	118





NOT TO SCALE

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

KANSAS DEPARTMENT OF TRANSPORTATION

Traffic Control
Phase 3

APP'D			
DESIGNED	DETAILED	DESIGN CK.	DETAIL CK.

KDOT Graphics Certified 12-18-2024

Sh. No. 85

KDOT Graphics Certified

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101cpl-03.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	86	118

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.

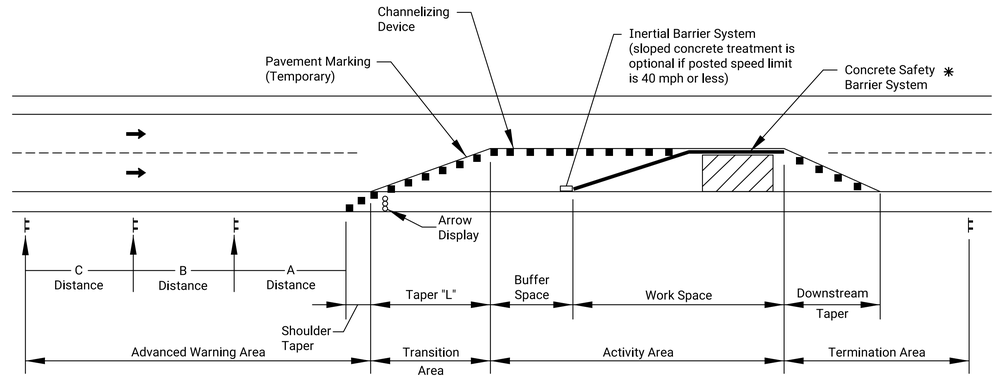
2) Minimum Lane Width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

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.



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

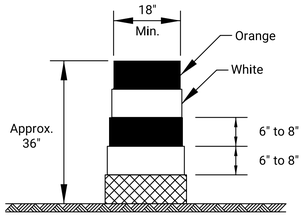
FHWA APPROVAL		APP'D. 03-13-18	Eric Kocher
DESIGNED B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 07-18-2022 Sh. No. 86

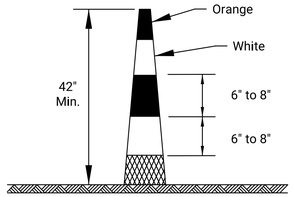
KDOT Graphics Certified

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101css700-01.dgn

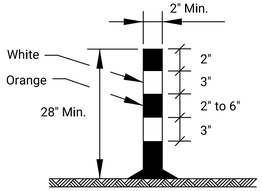
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	87	118



DRUM

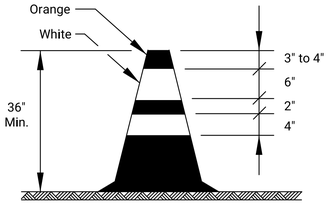


CONICAL
DELINEATOR

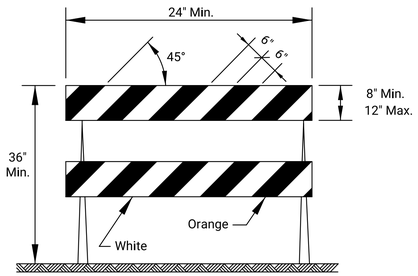


TUBULAR MARKER

Striping as shown for up to 42".

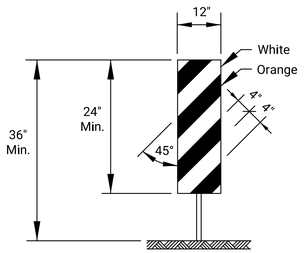


TRAFFIC CONE



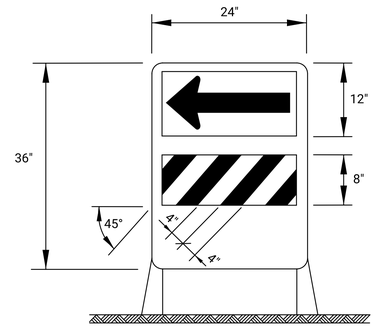
TYPE 2 BARRICADE

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



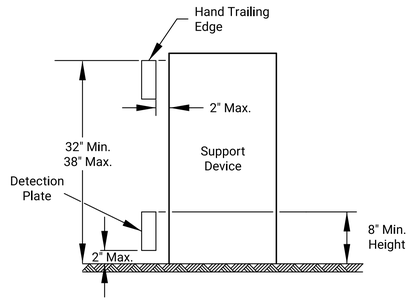
VERTICAL PANEL

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.

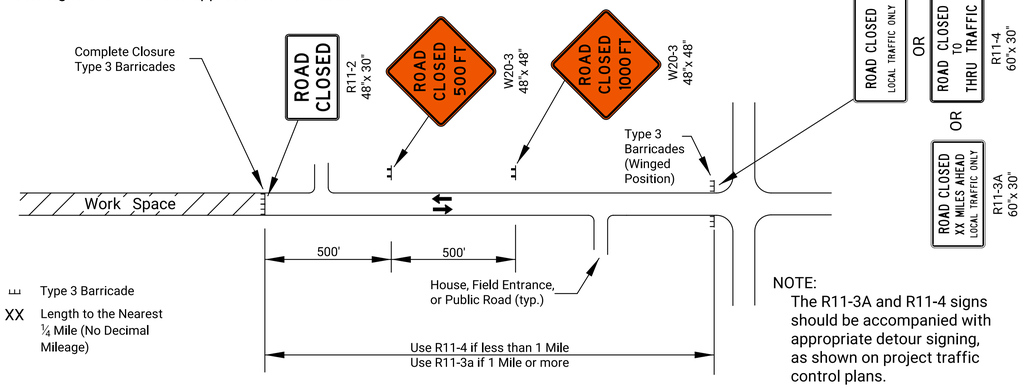
KDOT Graphics Certified 07-18-2022 Sh. No. 87

KDOT Graphics Certified

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:22
File : ka576101css702-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	88	118

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)

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

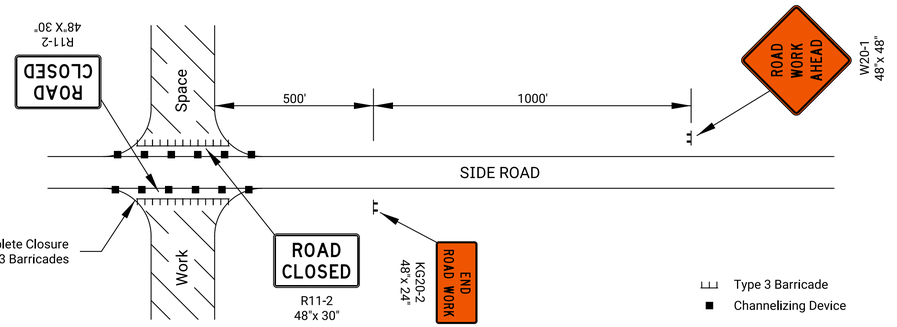


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

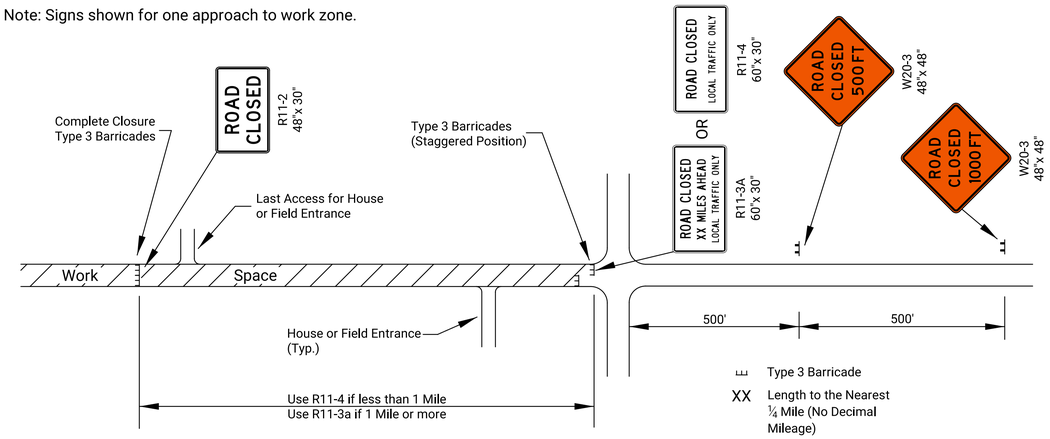


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

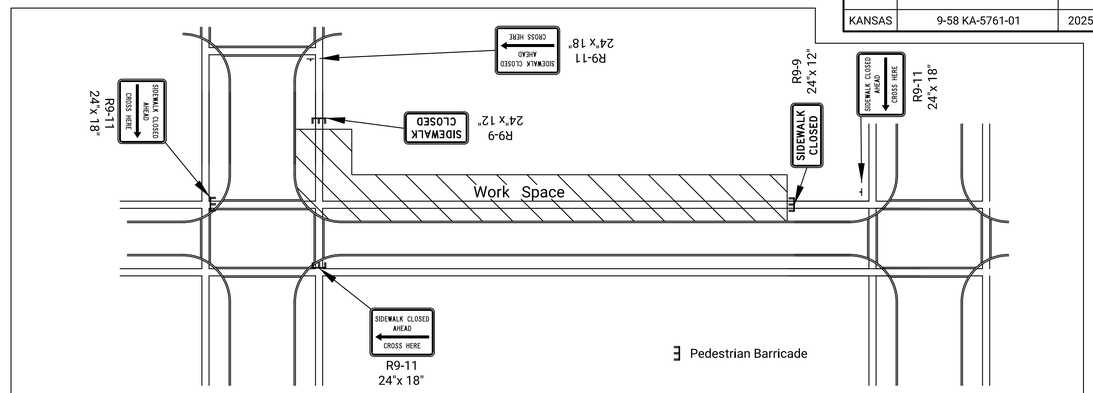
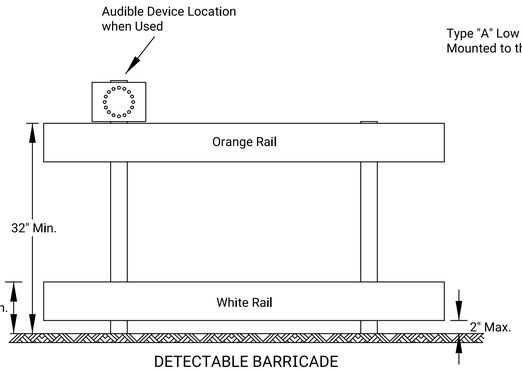
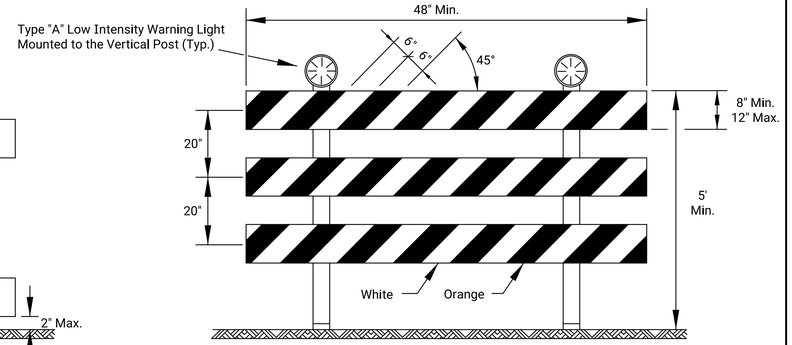


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE



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.	

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File : ka576101css704-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	89	118

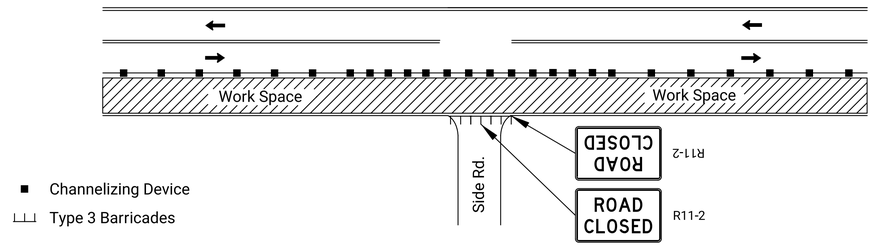


FIGURE 1: SIDE ROAD OR ENTRANCE CLOSED THROUGH WORK AREA

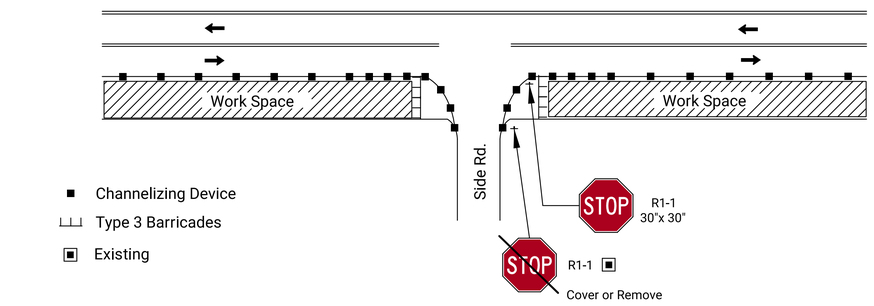


FIGURE 2: SIDE ROAD OR ENTRANCE OPEN THROUGH WORK AREA

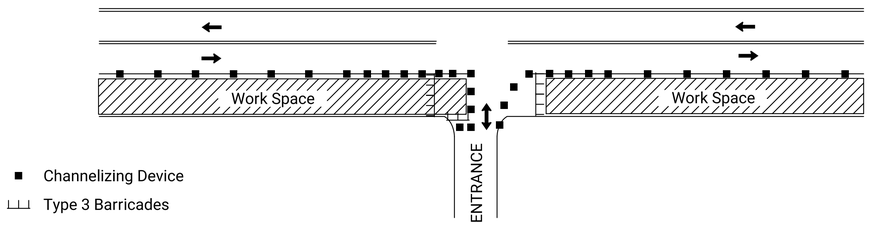


FIGURE 3: LOW VOLUME ENTRANCE CONTRUCTED HALF AT A TIME

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

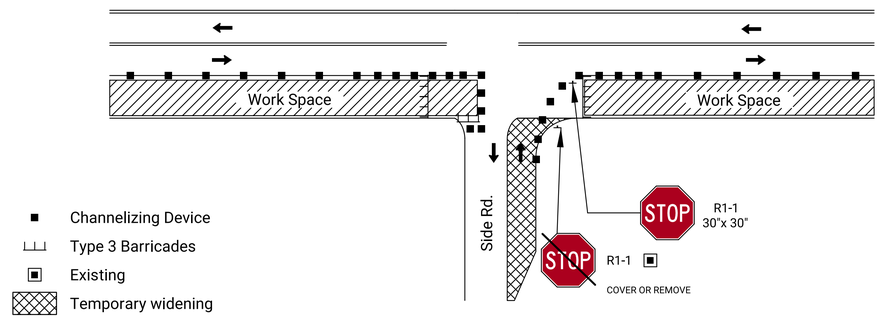


FIGURE 4: SIDE ROAD OR ENTRANCE CONSTRUCTED HALF AT A TIME:
TWO WAY TRAFFIC REQUIRED

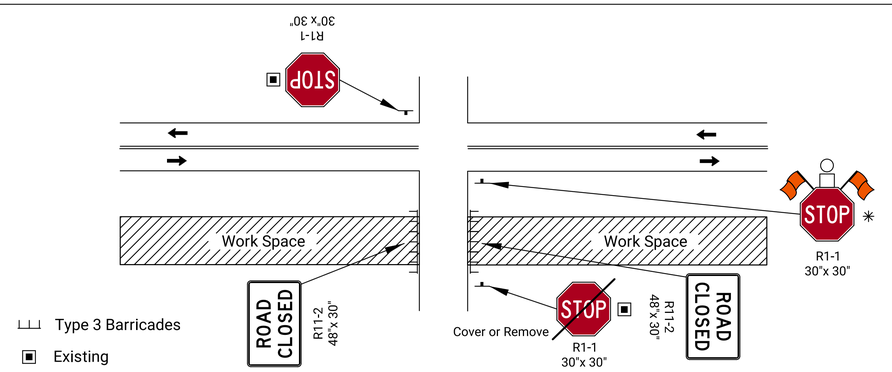


FIGURE 5: SIDE ROAD OPEN THROUGH WORK AREA ON DIVIDED ROADWAY

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
ACCESS THROUGH THE WORK AREA

TE705

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

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File : ka576101css705-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	90	118

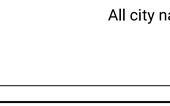
SIGN LAYOUT INFORMATION

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: 3" C, 24"x 6"
Expwy/Freeway: 6" C, 48"x 12"

NEXT X MILES
W7-3a
Mileage to be Determined by the Engineer.


W8-17
Std. Size Expwy/Freeway
48"x 48"

SHOULDER DROP-OFF
W8-17P (Optional)
Std. Size Expwy/Freeway
30"x 24"

GROOVED PAVEMENT
W8-15
Std. Size Expwy/Freeway
8" D
48"x 48"

LOOSE GRAVEL
W8-7
Std. Size Expwy/Freeway
8" D
48"x 48"

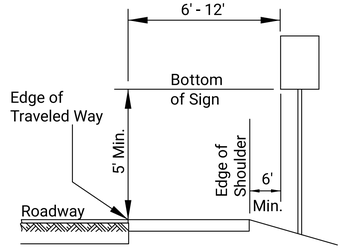

W8-15p
Std. Size Expwy/Freeway
30"x 24"

UNEVEN LANES
W8-11
Std. Size Expwy/Freeway
8" D
48"x 48"

NB US-75 CLOSED
FOLLOW DETOUR
SP-01 (Special Sign)
Std. Size: 6" C
Expwy/Freeway: 10" D

US-75 CLOSED
NORTH OF Topeka
FOLLOW DETOUR
SP-02 (Special Sign)
Std. Size: Uppercase: 6" C; Lowercase: 4.5" C
Expwy/Freeway: Uppercase: 10" D; Lowercase: 8" D

All city names and street names on special signs and destination signs must have upper and lower case letters.

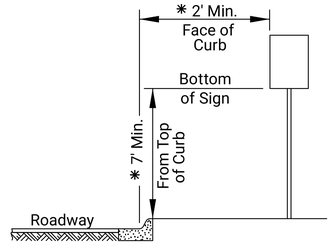


RURAL

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.

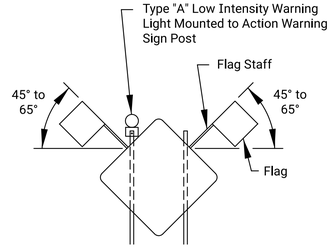
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

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.

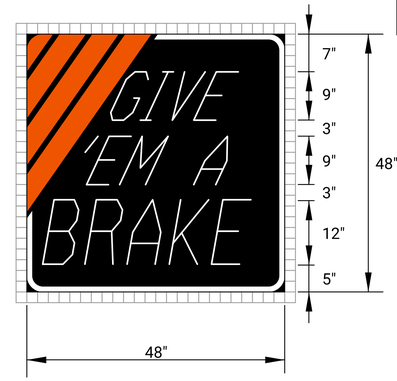
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

* 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.



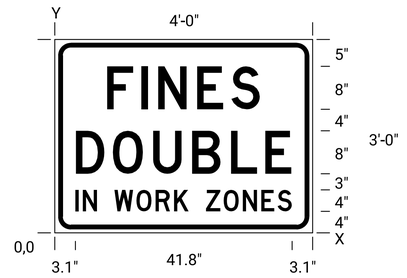
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

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.	

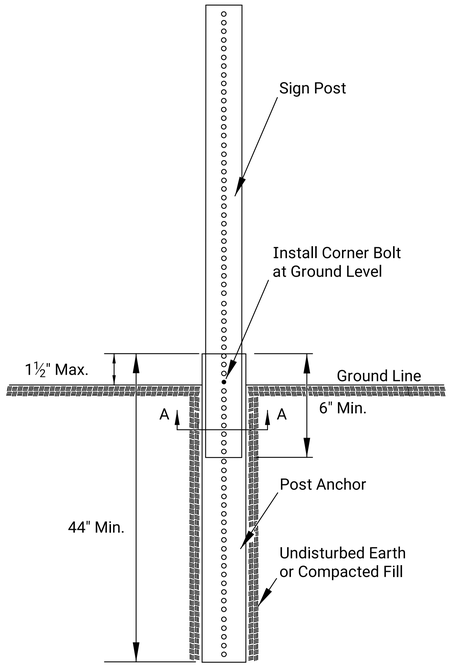
KDOT Graphics Certified 12-16-2022 Sh. No. 90

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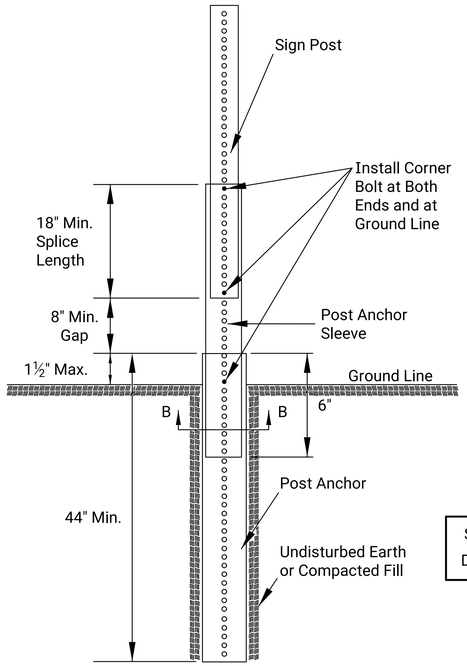
Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101css710-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	91	118

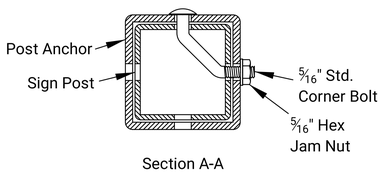
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



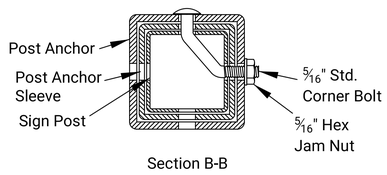
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

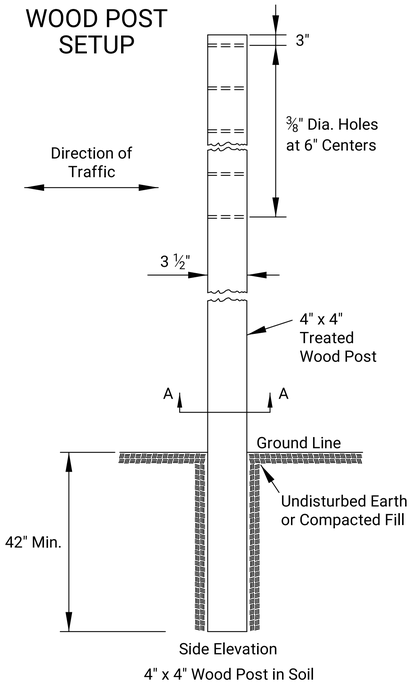


Section B-B

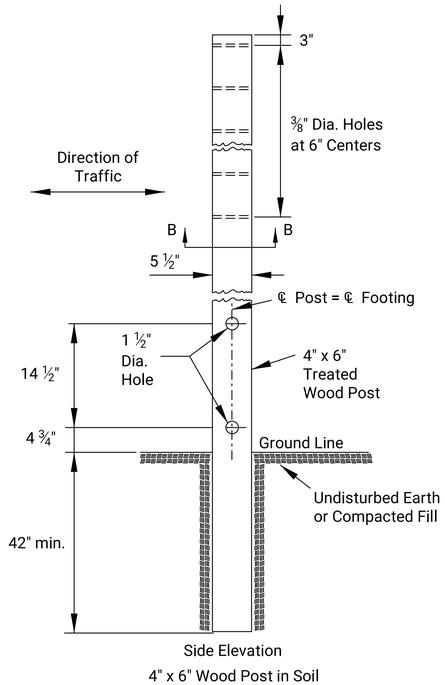
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

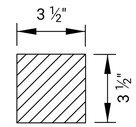
WOOD POST SETUP



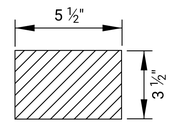
Side Elevation
4" x 4" Wood Post in Soil



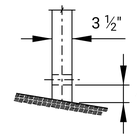
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



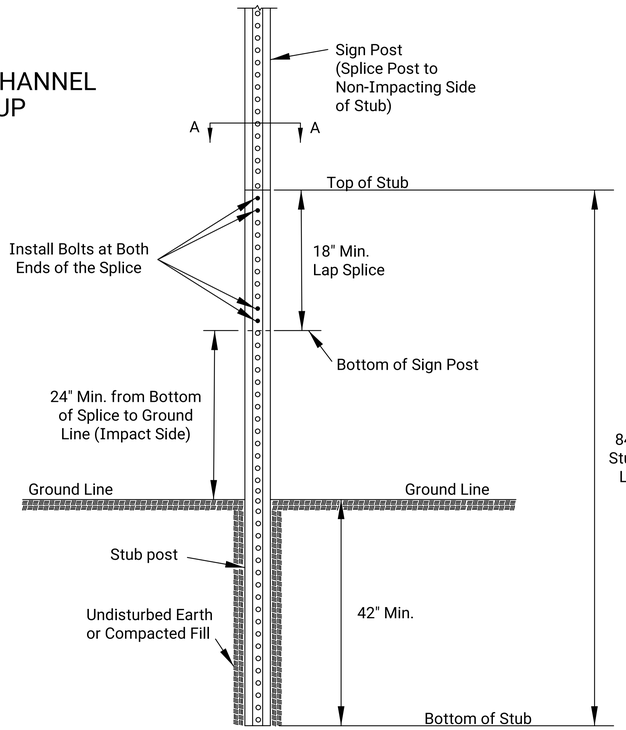
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

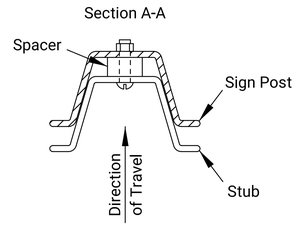
3 LB/F U-CHANNEL SETUP



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

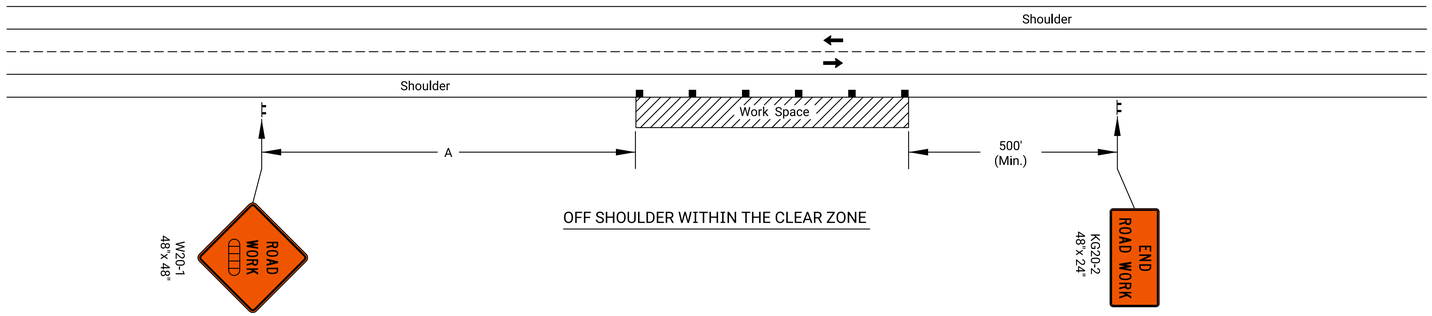
FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

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Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101css712-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	92	118

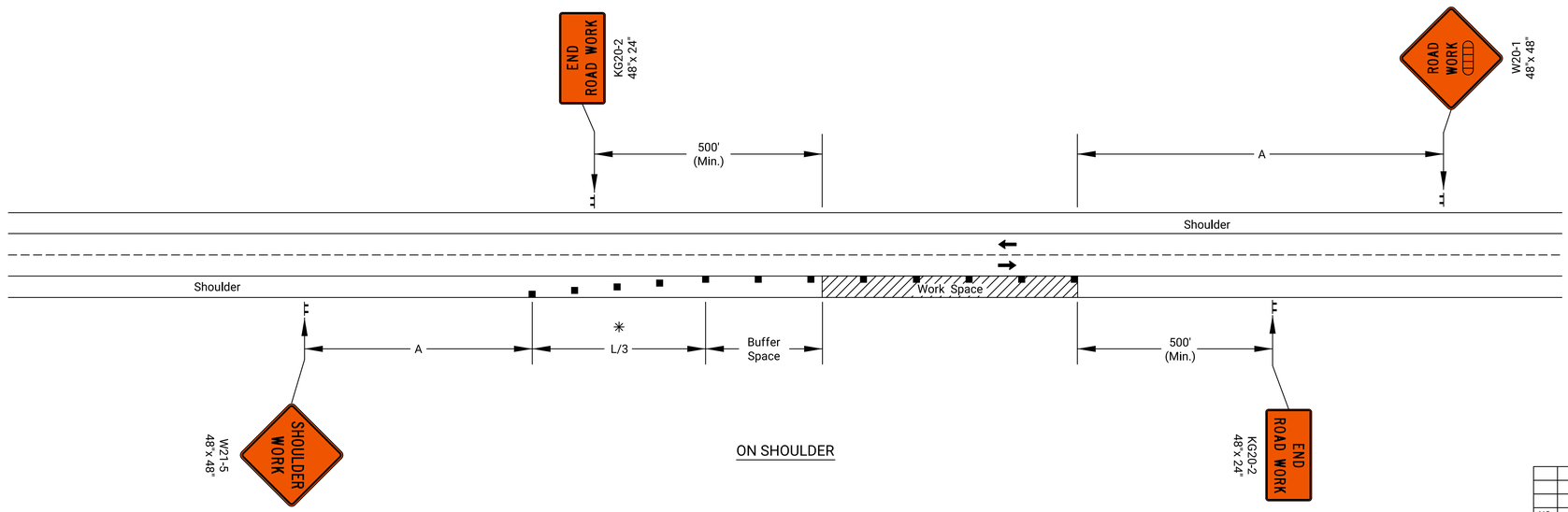


OFF SHOULDER WITHIN THE CLEAR ZONE

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.	

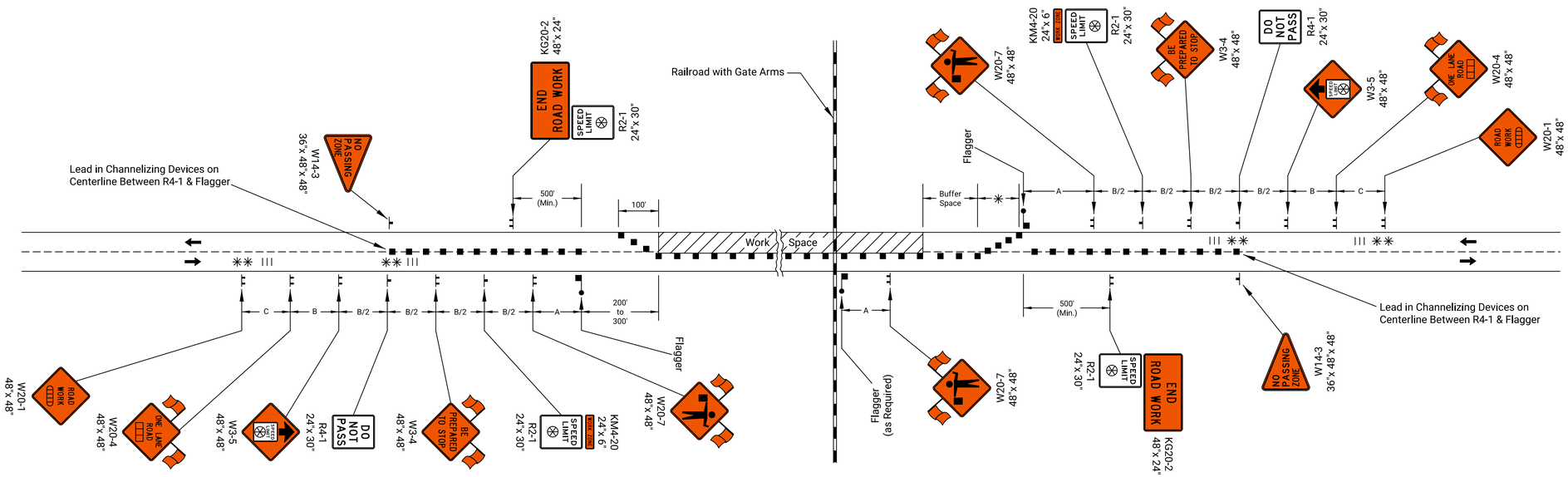
KDOT Graphics Certified 07-18-2022 Sh. No. 92

KDOT Graphics Certified

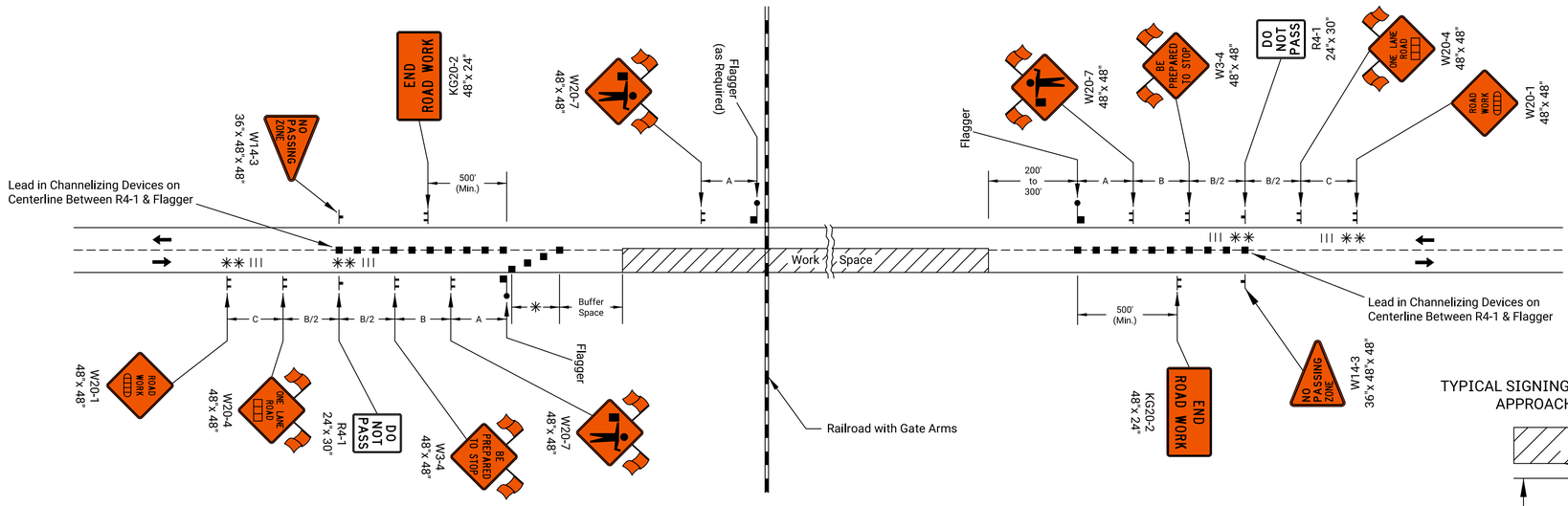
Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:22
File : ka576101css720-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	93	118

FLAGGER



FLAGGER AND PILOT CAR



- ■ Channelizing Device
- Ahead, 1500 ft, or 1 Mile
- Ahead, 1000 ft, 1500 ft, or ½ Mile
- Speed to be Determined by the Engineer
- ○ Type "A" Low Intensity Warning Light
- ||| Temporary Portable Rumble Strips

USE TE731 FOR FLAGGER OR PILOT CAR ON ROADWAYS WITH CONCRETE SHOULDERS GREATER THAN 8 FT.

Notes:

Trucks hauling material to the project should STOP at the Flagger. After stopping, upon approval of the Engineer, trucks may be allowed to move around the Flagger.

Place a Flagger at all highway and major collector intersections and at-grade railroad intersections with lights and gates in the work space to control traffic crossing the tracks to the left of the gate arm. The need for a Flagger at minor side road intersections shall be determined by the Engineer. Place a W20-7 (Flagger symbol) sign on each side road that is controlled by a Flagger.

Existing signs shall not be covered or removed between Flagger stations.

Temporary rumble strips may be used in lieu of lead in channelizing devices when the roadway is less than or equal to 30' including paved shoulders. When extenuating circumstances exist, the Area Engineer may elect to eliminate both the lead in channelizers and the rumble strips.

∗ Minimum six (6) channelizers spaced at 20' intervals.

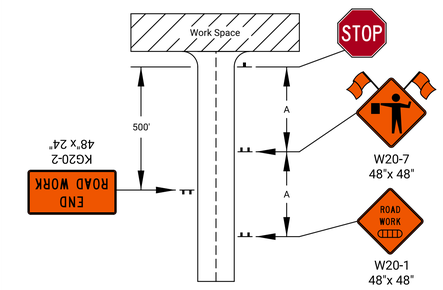
∗∗ Optional rumble strips may be placed: One set between the W20-1 and W20-4, and one set between the R4-1 and W3-4, on each approach.

△ Not required on substantial maintenance projects (1R).

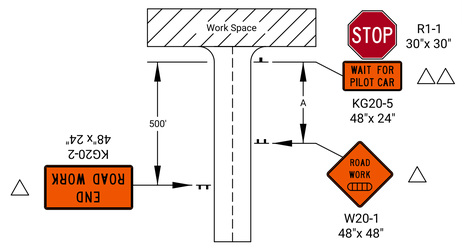
△△ The KG20-5 (WAIT FOR PILOT CAR) sign shall be mounted on an approved portable support and not attached to the existing stop sign post.

The KG20-5 sign shall be placed immediately in front of the existing stop sign, a minimum of 6" below the bottom of the stop sign. The sign should be removed or covered when there is no pilot car.

TYPICAL SIGNING FOR HIGHWAY OR MAJOR COLLECTOR APPROACH TO WORK SPACE



TYPICAL SIGNING FOR A MINOR SIDE ROAD APPROACH TO WORK SPACE



NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL FLAGGER OR PILOT CAR

TE730

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.	

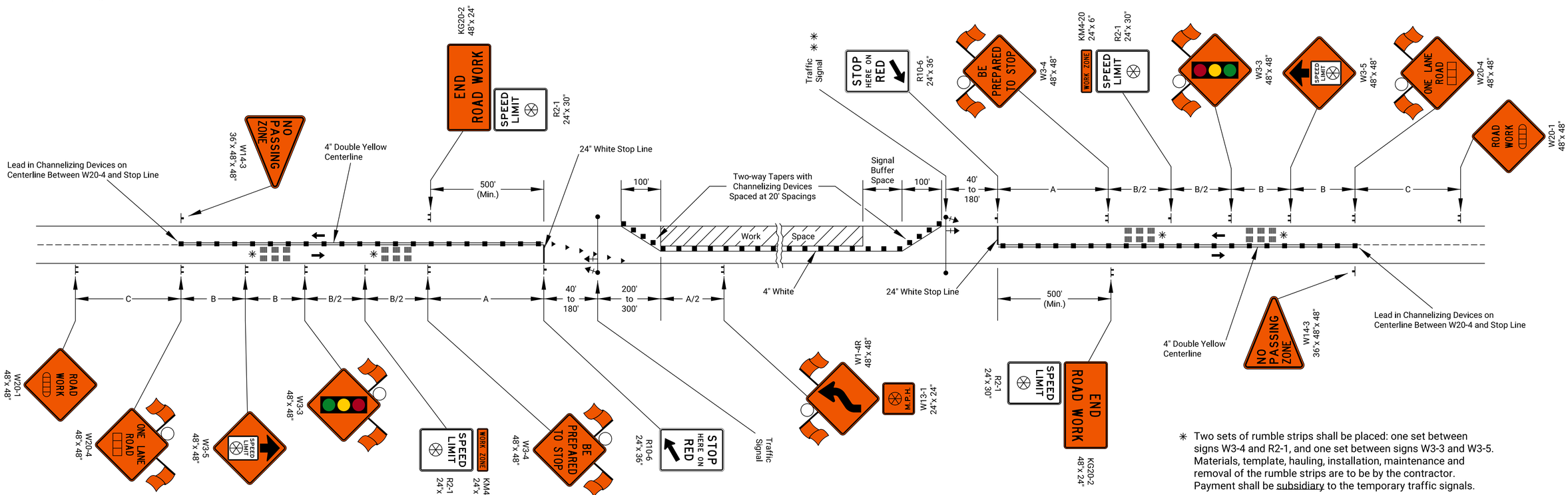
KDOT Graphics Certified 07-18-2022 Sh. No. 93

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Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101css730-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	94	118

NOTE: Refer to TE733 and TE734 for additional temporary traffic signal details.



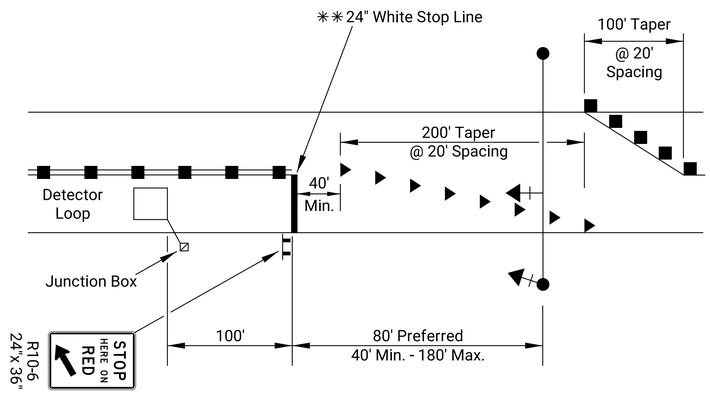
✳ Two sets of rumble strips shall be placed: one set between signs W3-4 and R2-1, and one set between signs W3-3 and W3-5. Materials, template, hauling, installation, maintenance and removal of the rumble strips are to be by the contractor. Payment shall be subsidiary to the temporary traffic signals.

SIGNAL BUFFER SPACE

SPEED (MPH) ⚠	20	25	30	35	40	45	50	55	60	65	70
LENGTH (FT)	35	50	65	85	100	115	130	150	165	165	165

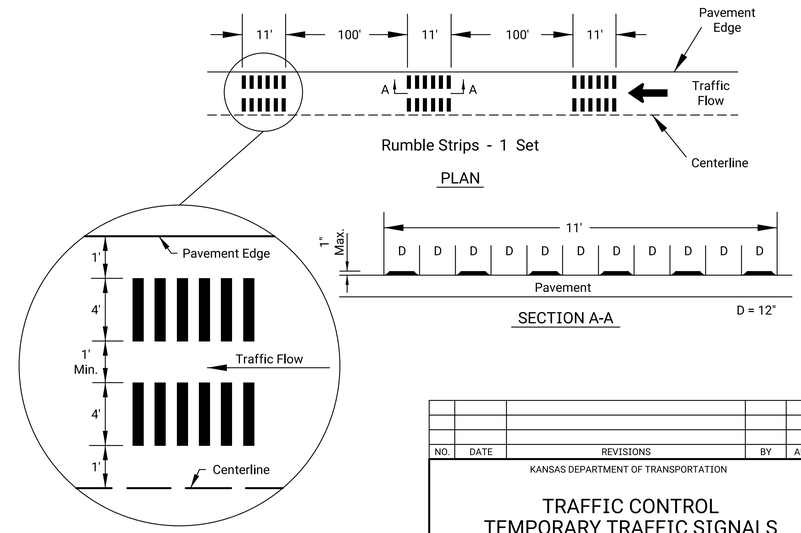
Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

⚠ Posted speed prior to work starting



✳✳ Stop Line Created Using (6) 4" Strips of Temporary Tape

TYPICAL ASPHALT RUMBLE STRIP DETAILS



- ▸ Uni-Directional Yellow Temporary Raised Pavement Marker (Type 1) (Facing Right)
- ■ Channelizing Device
- Ahead, 1500 ft, or 1 Mile
- Ahead, 1000 ft, 1500 ft, or ½ Mile
- Speed to be determined by the Engineer
- Signal Head with Back Plate
- ● Temporary Signal Pole or Trailer
- ○ Type "A" Low Intensity Warning Light

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL TEMPORARY TRAFFIC SIGNALS

TE732

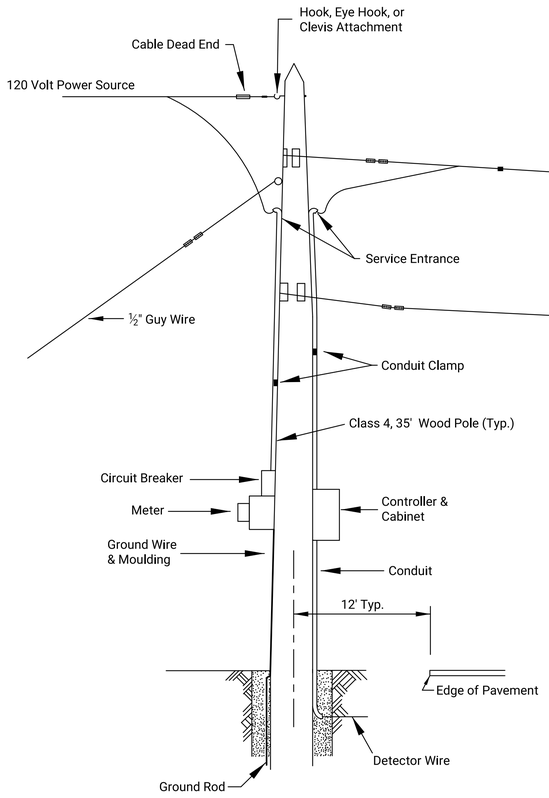
FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED R.W.B.	QUANTITIES		TRACED
DESIGN CK.		DETAIL CK.	QUAN.CK.		TRACE CK.

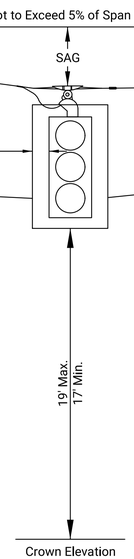
KDOT Graphics Certified 07-18-2022 Sh. No. 94

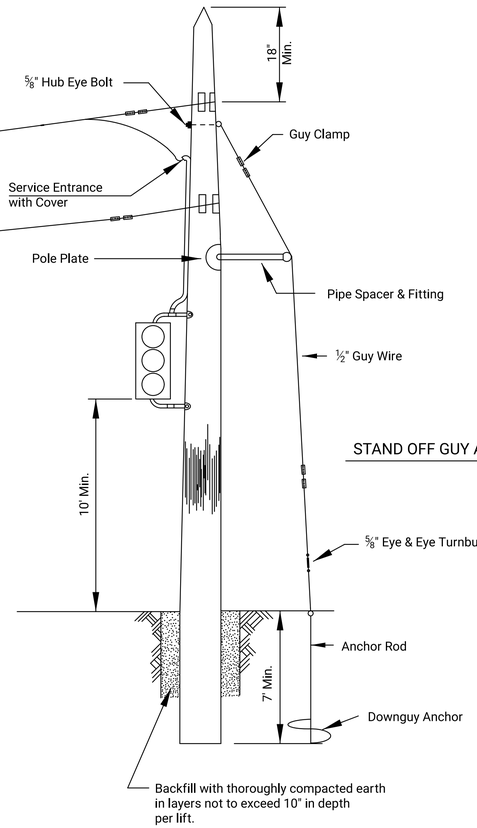
KDOT Graphics Certified

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101css732-01.dgn

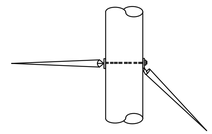
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	95	118



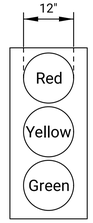




STAND OFF GUY ALTERNATE



Alternate method of mounting for spanwire & downguy traffic signal support pole.



SIGNAL INDICATIONS

GENERAL NOTES

The engineer in charge of construction will need to approve all locations for traffic signals to be installed. Final positions & aiming of signal faces to be determined in the field.

Trailer mounted portable traffic signals may be substituted for span wire signals.

The traffic signal system shall conform to and be operated according to the requirements of the M.U.T.C.D.

Contact local utility companies to advise them of installation and coordinate power hook-up if needed.

All wiring installed shall conform to the national electrical code and local ordinances & requirements.

The power supply and the operation & maintenance of the signal system shall be the responsibility of the contractor.

Note:
See TE734 for additional information.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
TEMPORARY TRAFFIC SIGNAL DETAILS

TE733

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. 95

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101css733-01.dgn

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	96	118

The control equipment shall be designed in such a manner that the normal dwell condition shall be an all red" signal display. Upon receipt of a detector actuation from one approach, the signals facing that approach shall cycle to a green indication for a minimum period (minimum green). Subsequent detector actuations from the same direction shall result in additional green time being allocated to that movement (unit extension). In the event that an actuation exists for the direction of travel not having the right of way, a maximum green time setting shall provide a preset time limit for the direction having the right of way.

The control equipment shall provide for different clearance sequences, one for each required phase.

If the green indication has been displayed to one approach to the zone, no vehicle actuation exists on the opposite approach and another actuation occurs during the yellow display to the approach just serviced, the display shall proceed to an all red display for a period of time (red revert) to prevent the display of green - yellow - green indications to the motorist.

If the right of way is to be transferred to another approach, an all red indication shall be provided so that opposing traffic does not meet within the one way zone.

Response to a vehicle actuation from another approach shall be immediate if all timings have expired. In the event that all time settings have not expired at the point at which a vehicle actuation occurs, the system shall continue to provide the appropriate clearance interval timings before acting upon an actuation input.

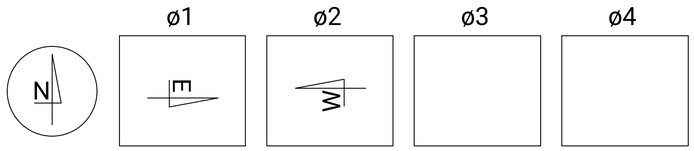
Vehicle actuations received from the detector at approaches other than that which last received a green indication shall have preference over additional actuations received from the end which last had the right of way in the event that any clearance interval timings have not expired when the actuation(s) occurs. If all timings have expired, response shall be on a first come, first served basis.

All time settings shall be user adjustable and shall be accomplished from the equipment front panel by way of a keyboard and menu screen format. All applicable portions of the
KDOT standard specifications for vehicle actuation shall apply except that a standard NEMA conflict monitor shall be acceptable.

Signals shall be capable of actuation. On asphalt roadways, detection loops may be sawed into the road. Commercially made loop mats may also be used. Do not cut loops into concrete pavement. Other types of detection may be used if approved prior to installation by the Engineer. Do not use microwave detection systems in urban areas. Detector shall be set to operate in the locking mode.

If used, detection loops shall be 6' by 6' and have three turns of wire (see detail). Center loops in the lane of traffic and locate 100' behind the stop line. Cut slots in pavement for loops $\frac{5}{16}$" wide with 1"
minimum depth. Fill slots with asphalt or an approved elastic epoxy sealant (concrete pavement) to within $\frac{1}{8}$" of pavement surface. Other than a "western union" type splice or approved connector at their junction, feeder cable and loop wire shall be of continuous run with no splices. The loop and the feeder cable connection shall be twisted 2 turns per foot.

SIGNAL PHASING AND TIMING

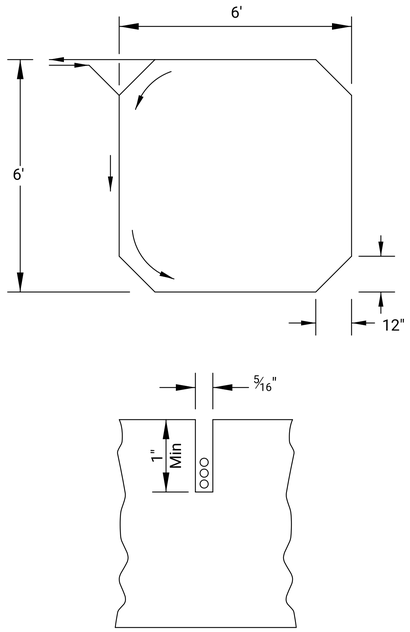


Phase	Minimum Green	Maximum Green	Yellow	All Red
1	10	60	4	53
2	10	60	4	53

Phase		Stationing
EB	Stopline	568+35
EB	Signal	569+15
WB	Signal	593+40
WB	Stopline	594+20

All times in seconds.
Normal dwell shall be "all red".
Unit extension shall be 3.0 seconds.
Red revert shall be 5.0 seconds.

LOOP DETECTOR DETAIL



Note: See TE733 for additional information.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
TEMPORARY TRAFFIC SIGNAL DETAILS

TE734

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

KDOT Graphics Certified 12-16-2024 Sh. No. 96

KDOT Graphics Certified

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101tcss734-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	97	118

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over

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	
KG20-2	2		
W21-5		1	
W20-4		2	
W3-5		2	
R4-1	2		
W3-4		2	
R2-1	4		
KM4-20	2		
W14-3	2		
W3-3		2	
R10-6	2		
KI-104a		2	
KI-105a		2	
W20-3		2	
R11-2		1	
R11-4		1	

Barricades ✳		Channelizing Devices ✳		
Type 3 (4' to 12')	Pedestrian	Fixed	Portable	Pedestrian
10			80	

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	12
Work Zone Warning Light (Red Type "B" High Intensity)	
Arrow Display	
Portable Changeable Message Sign	

Recapitulation of Quantities		
Item	Quantity	Unit
Work Zone Signs (0 to 9.25 Sq.Ft.)	4550	Each Per Day
Work Zone Signs (9.26 to 16.25 Sq.Ft.)	6830	Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)		Each Per Day
Work Zone Barricades (Type 3 - 4' to 12')	3250	Each Per Day
Work Zone Barricades (Pedestrian)		Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)	26,000	Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)	3900	Each Per Day
Work Zone Warning Light (Red Type "B" High Intensity)		Each Per Day
Arrow Display		Each Per Day
Portable Changeable Message Sign		Each Per Day
Pavement Marking (Temporary)		
4" Solid (Type I)	222	Sta./Line
4" Solid (Type II)		Sta./Line
4" Broken (8.0') (Type I)		Sta./Line
4" Broken (8.0') (Type II)		Sta./Line
4" Broken (3.0') (Type I)		Sta./Line
4" Broken (3.0') (Type II)		Sta./Line
4" Dotted Extension (Type I)		Sta./Line
4" Dotted Extension (Type II)		Sta./Line
Solid (Line Masking Tape)		Sta./Line
Broken (Line Masking Tape)		Sta./Line
Symbol (Type I)		Each
Symbol (Type II)		Each
Flexible Raised Pavement Marker (4" Broken (8.0'))		Sta./Line
Flexible Raised Pavement Marker (4" Broken (3.0'))		Sta./Line
Pavement Marking Removal	19,750	Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)		Each
Rigid Raised Pavement Marker (Type I)	22	Each
Rigid Raised Pavement Marker (Type II)		Each
Traffic Signal Installation (Temporary)	Lump Sum	Lump Sum
Traffic Control (Initial Set Up)	Lump Sum	Lump Sum
Traffic Control		Lump Sum
Flagger (Set Price)	1	Hour

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SUMMARY OF DEVICES RECAPITULATION OF QUANTITIES

TE795

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

KDOT Graphics Certified 10-08-2025 Sh. No. 97

KDOT Graphics Certified

Plotted by : Robert.Bartron@ks.gov 8-OCT-2025 21:23
File : ka576101css795-01.dgn

Note to Designer: Report the quantity for temporary concrete safety barrier in linear feet.
The quantity is calculated by multiplying the number of barrier units by 12'-6".

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	98	118

SUMMARY OF QUANTITIES

⊙ CONCRETE SAFETY BARRIER (TYPE F3)

LOCATION (ROUTE)	STATION (OR STATION RANGE)	SIDE	TEMPORARY	TEMPORARY-RELOCATE	TEMPORARY-INSTALL ONLY	UNIT	COMMENTS
K-9	571+80.95 to 572+06.51	Rt.	25				Freestanding
K-9	572+06.51 to 573+72.38	Lt. & Rt.	162.5				Freestanding
K-9	573+72.38 to 574+22.38	Lt.	50				Transition
K-9	574+22.38 to 576+67.18	Lt.	237.5				Anchored
K-9	576+67.18 to 577+69.57	Lt. & Rt.	100				Anchored
K-9	577+69.57 to 585+88.99	Rt.	800				Anchored
K-9	585+88.99 to 588+07.79	Lt. & Rt.	212.5				Anchored
K-9	588+07.79 to 588+57.79	Lt.	50				Transition
K-9	588+57.79 to 589+59.91	Lt. & Rt.	100				Freestanding
K-9	589+59.91 to 590+61.92	Rt.	100				Freestanding
K-9	571+93.92 to 572+19.59	Lt.		25			Freestanding
K-9	572+19.59 to 573+72.82	Lt. & Rt.		150			Freestanding
K-9	573+72.82 to 578+72.11	Rt.		487.5			Freestanding
K-9	578+72.11 to 579+87.39	Rt.		112.5			Freestanding
K-9	579+87.39 to 580+38.46	Rt.		50			Freestanding
K-9	580+38.46 to 583+32.86	Rt.		287.5			Freestanding
K-9	583+32.86 to 583+84.04	Rt.		50			Freestanding
K-9	583+84.04 to 584+60.81	Rt.		75			Freestanding
K-9	584+60.81 to 588+57.57	Rt.		387.5			Freestanding
K-9	588+57.57 to 590+74.81	Lt. & Rt.		212.5			Freestanding
Total			1837.5	1837.5			

⊙ The quantity reported does not include the 3⅝" gap between 12'-6" sections of barrier. The 3⅝" gap will not be included in the pay length for Concrete Safety Barrier (Type F3) (Temporary).
See the Summary of Quantities on Sheet No. 57 for Recap of Temporary Concrete Safety Barrier and End Treatments.

Design Parameters	
Design Speed (mph)	Flare Rate (a:b)
70	15:1
60	14:1
55	12:1
50	11:1
45	10:1
40	8:1
30	7:1

Note: The flare rates listed here apply only to temporary concrete safety barrier installations. See temporary concrete safety barrier layouts included in the plans for variations. Typical alternate flare rates may be used as approved by the Engineer.

TEMP. IMPACT ATTENUATOR (TL-3)					
ROUTE	STATION	PHASE	Side	TL-3	⚠ TL-3 (RELOCATE)
K-9	571+80.95	2	Rt.	1	
K-9	590+61.92	2	Rt.	1	
K-9	571+93.92	3	Lt.		1
K-9	590+74.81	3	Lt.		1
			TOTAL	2	2

⚠ Temporary TL-3 Relocate is Subsidiary to Bid Item

NO.	DATE	REVISIONS	BY	APP'D
01	02-11-15	Initial Release	K.E.K.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
TEMPORARY CONCRETE SAFETY
BARRIER AND END TREATMENTS

RD052

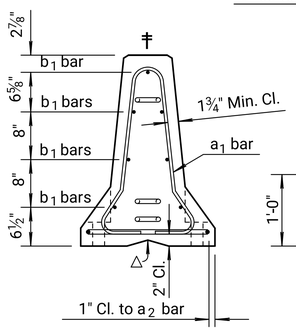
FHWA APPROVAL	09-16-15	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 10-16-2025 Sh. No. 98

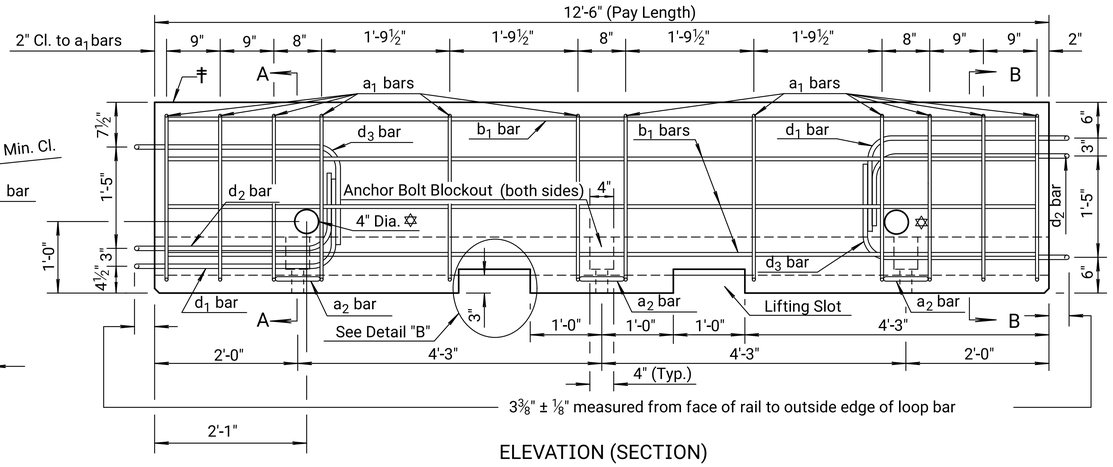
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Plotted by : Dylan.Newell@ks.gov 16-OCT-2025 13:41
File : KA576101rd052.dgn

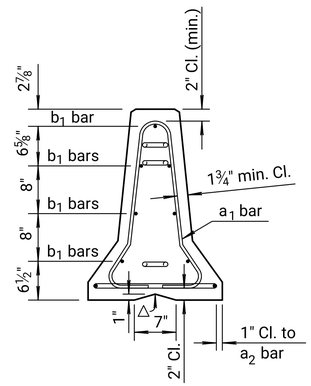
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	99	118



SECTION A-A
TYPICAL SECTION
(Stirrup Placement)

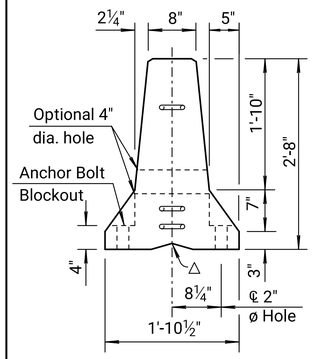


ELEVATION (SECTION)

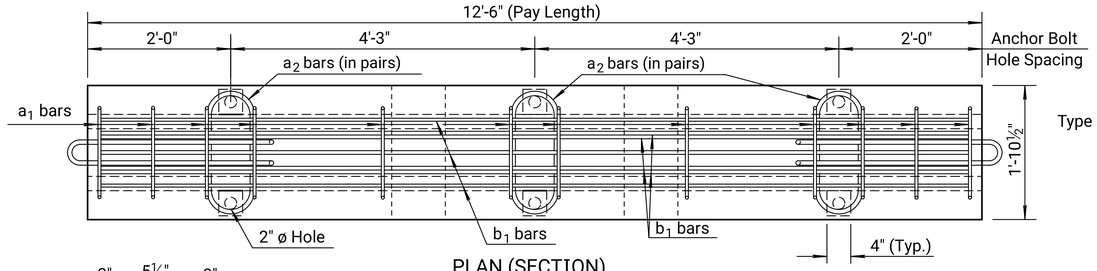


SECTION B-B
TYPICAL SECTION
(Stirrup Placement)

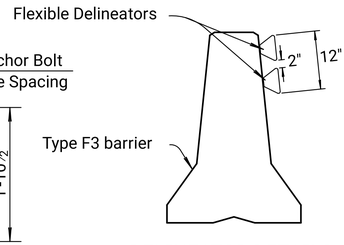
‡ Marked End
✡ 4" diameter - 11 gauge steel round mechanical tubing sleeve. These holes are optional.
△ V Notch is optional



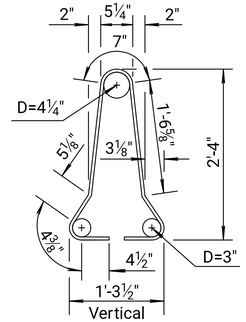
END VIEW



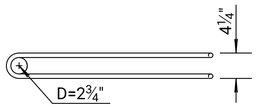
PLAN (SECTION)



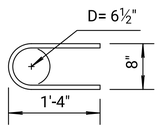
DELINEATOR DETAILS



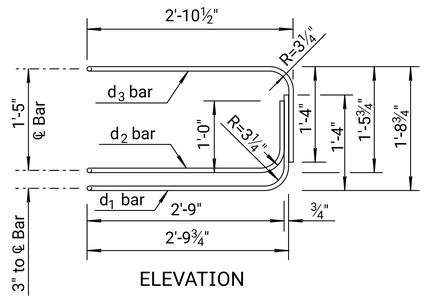
a_1 bar



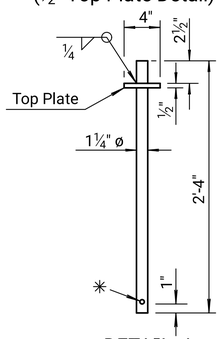
PLAN
LOOP BAR ASSEMBLY
(Marked end shown, invert
for other end)
(Material as stated in General Notes)



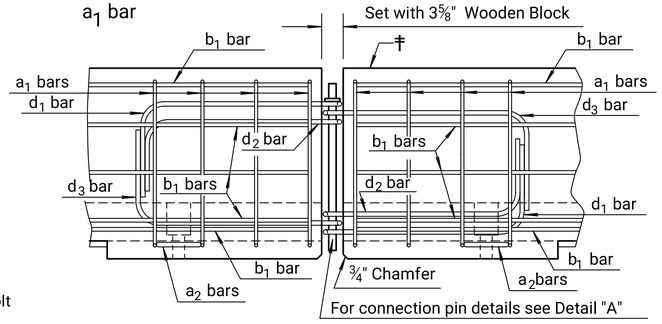
a_2 bar



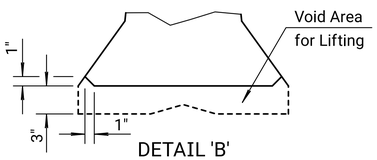
ELEVATION



DETAIL A
CONNECTION PIN
(A36 Steel) 10.9 lbs. each
✳ ⅝" ø hole for retainer bolt. The retainer bolt & nut are installed at Contractor's option.
Note: Retainer bolt & nut required with Tie Down Strap.



DETAILS OF BARRIER CONNECTION



DETAIL 'B'
LIFTING SLOT DETAIL
(1" Chamfer to prevent spalling)

Per 12'-6" Barrier Section

REINFORCING A615 Gr. 60					
Bar	Bar Size	Shape	No. of Bars	Length Ft.	Weight Lbs.
a_1	#4		12	6'-0"	48.1
a_2	#6		6	2'-11"	26.3
b_1	#5		7	12'-2"	88.8
LOOP ASSEMBLY					
d_1	#6		2	8'-5"	25.3
d_2	#6		2	7'-7"	22.8
d_3	#6		2	8'-6"	25.5

Concrete Quantity = 1.3 C.Y.
(Dimensions are out to out of bars unless otherwise noted.)

NOTE: At no time shall the barriers be lifted, moved, etc. by use of the loop bars: d_1, d_2 or d_3.

GENERAL NOTES:

MATERIAL: Use ASTM A615, Grade 60 reinforcing bars, except for the loop bars (d_1, d_2 and d_3). The loop bars (d_1, d_2 and d_3) shall be ¾" smooth steel bars with a minimum yield of 60 ksi, a tensile strength of not less than 1.25 times the yield strength but a minimum of 80 ksi, a minimum 14% elongation in 8 inches, and passing a 180 degree bend test using a 3.5 D pin bend diameter. The loops shall be installed within ⅛" of the plan dimensions.

Use air-entrained concrete with f'c = 5,000 p.s.i.

SECTION: The section furnished must generally comply with dimensions shown. Requests for minor variations in section geometry and attachments may be submitted to the Engineer for approval.

LIFTING SLOTS: Lifting slots shall be constructed where specified on the plans to facilitate the drainage of water after installation on the roadway.

TEMPORARY CONCRETE SAFETY BARRIER: Furnishing and placing of all materials when required and all labor and equipment required to position the temporary barrier shall be included in the Contract unit price bid for "Concrete Safety Barrier (Type F3)(Temporary)". Any relocation of the barrier required for the project shall be paid in accordance with the Special Provisions under the bid item "Concrete Safety Barrier (Type F3) (Temporary-Relocate)". Unless otherwise noted on the Plans, the Temporary Concrete Safety Barrier shall become the property of the Contractor and shall be removed from the site upon acceptance of the completed project.

Approximate weight of one unit equals 2.7 tons.

PLACEMENT: Barrier shall be placed on a paved surface. All loose dirt and sand shall be removed from the roadway surface just prior to placement of the barrier.

After the barrier is placed and the connection pin is inserted, tension or pull the barrier such that the installation is taut and the connection pin cannot freely move vertically. If the connection pin or loop bar assembly are damaged during the tensioning process, it is the responsibility of the Contractor to repair the damaged area or replace the temporary barrier section.

MARKING: The left end (‡) of each barrier shall be permanently marked by stamping or forming into the barrier the following information:

- Type F3
- Manufacturer code (as specified by KDOT Bureau of Const. & Maint.)
- Date manufactured (month and year)

DELINEATION: Delineators shall be spaced on 50' centers, except through curves where they shall be spaced on 25' centers. See Standard Drawing RD610 for additional details.

The delineation shall be mounted on the side of the Temporary Concrete Safety Barrier with two delineators at each location. Each delineator shall have a minimum height-to-width ratio of 1.75, and a minimum reflective surface area of 7 sq. in.. The delineators shall be affixed to the Temporary Concrete Safety Barrier as recommended by the manufacturer.

Delineators shall be attached to bridge rail or other structures in construction zones when roadway is narrowed and traffic is adjacent to the structure. The method and location of placement shall be similar to permanent barrier delineation.

When traffic flow is in one direction, the delineators shall be yellow when used on the left, white when used on the right. When traffic flow is in both directions delineators shall be placed back-to-back, and shall correspond to the color of the edge line.

The work and materials required for the installation of delineators as mentioned shall be subsidiary to the bid item "Concrete Safety Barrier (Type F3) (Temporary).

If necessary, include Standard Drawing RD622A for Taper Section, Standard drawing RD622B for anchor and tie down details, Standard Drawing RD622C for Bridges with thermal expansion of 1½" or greater and Standard Drawing RD622D for Barrier Layouts.

The Contractor shall be responsible for maintaining a clear area, shown as dimension "A" on Standard Drawing RD622B. The clear area is located behind the Temporary Concrete Safety Barrier and shall be kept free of any equipment, material stockpiles or other obstacles. For non-anchored roadway applications, dimension "A" shall be a minimum of 2'-0".

NO.	DATE	REVISIONS	BY	APP'D
07	09-11-17	Revised Markers	A.L.R.	S.W.K.
06	07-17-17	Revised General Note	A.L.R.	S.W.K.
05	08-27-15	Added Note, Pay Length	K.E.K.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE SAFETY BARRIER TYPE F3

RD622

FHWA APPROVAL	03-05-18	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 11-13-2024 Sh. No. 99

KDOT Graphics Certified

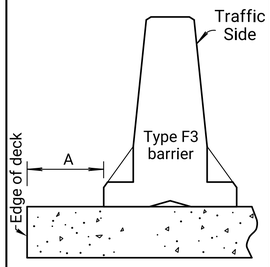
Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:24
File : KA576101rd622.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	100	118

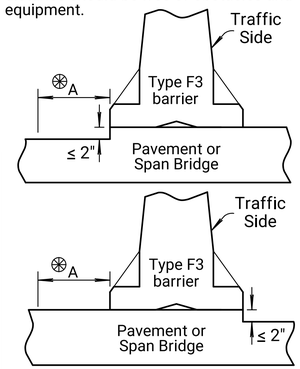
GENERAL NOTES:
INSTALLATION: Holes into the pavement to anchor the concrete safety barrier may be drilled after positioning barrier. When anchoring with 3 bolts on traffic side, install barrier with through anchor bolt where possible, use grouted anchor bolts where through bolt can't be used. Do not drill into or otherwise damage support beams, girders, or expansion joints. All work & materials required for the installation of the anchors are subsidiary to the bid item "Concrete Safety Barrier".
UTILITIES & STRUCTURES (Stakes): Verify buried utilities & structures within stake depth. If conflicts between stake & buried elements exist, up to 2 stakes maximum in a single barrier may be omitted if adjacent barriers have 3 stakes each.

ANCHORAGE: Use galvanized grouted anchor bolts, through anchor bolts, nuts & washers that meet standard specifications. Install 3 anchor bolts or asphalt pins per barrier on the traffic side except on transition barrier as shown.
BARRIER REMOVAL: Completely remove all anchor systems. Remove grouted or drop-in anchor system by drilling the anchor with a core barrel 2x the diameter of the insert. Core to a depth equal to the installed depth & remove the core, prepare the hole by removing dust & debris. Fill hole with material that meets KDOT Pre-qualified "Non-shrink grouts for grouting anchor bolts & reinforcing into previously poured concrete". Follow the manufacturer's procedures for mixing, hole preparation & curing. To fill through bolt anchor or screw-in anchor system, remove & completely fill the hole using instructions for drop-in anchors except no coring is required.
For removed or relocated barrier on flexible pavement, fill stake holes completely with hot or cold asphalt patch material. Work & materials required to remove & patch anchor holes are subsidiary to the bid item "Concrete Safety Barrier".
TEMPORARY BARRIERS: Temporary Barriers shown in the details of this drawing are not allowed for permanent installations.
See KDOT Standard Drawing "Temporary Concrete Safety Barrier Type F3 Transition Layouts" for transition details between anchored & free-standing barriers. See KDOT Standard Drawing "Temporary Concrete Safety Barrier Type F3" for details & quantities not shown on this sheet.
SIGNING: For sign spacing, traffic control device details & reference notes, see Index of Sheets.

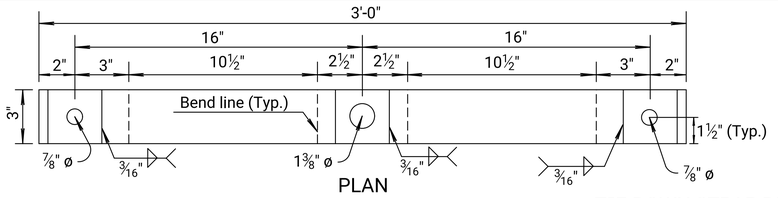
NO ANCHORAGE REQUIRED unless shown on plans		
"A" DISTANCE	A ≥ 4'	A ≥ 2'
LOCATION	Span Bridge	⊛ Box Culverts Roadways - Flexible or Rigid Pvmnt.



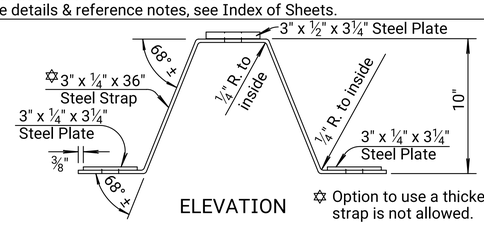
⊛Applies on span bridges when the action creates a height differential of ≤ 2". Measured from the toe of the barrier, the "A" distance should be free of obstacles and equipment.



BARRIER LOCATION NEAR HEIGHT DIFFERENTIAL



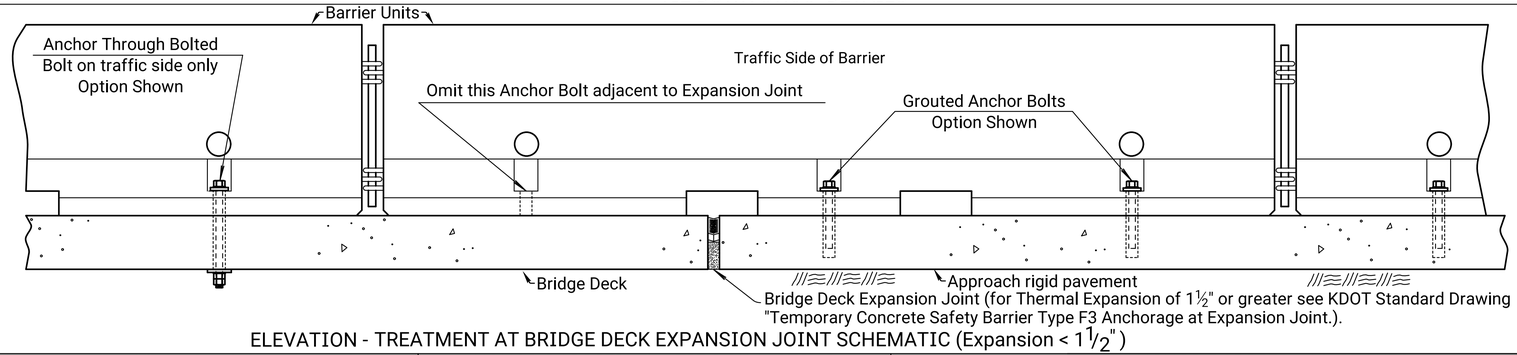
PLAN



ELEVATION

✡ Option to use a thicker steel strap is not allowed.

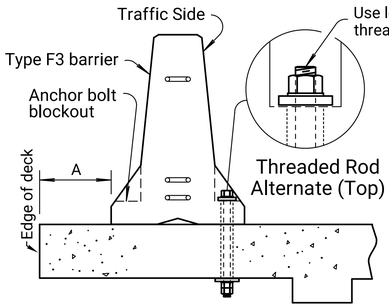
TIE-DOWN STRAP DETAILS

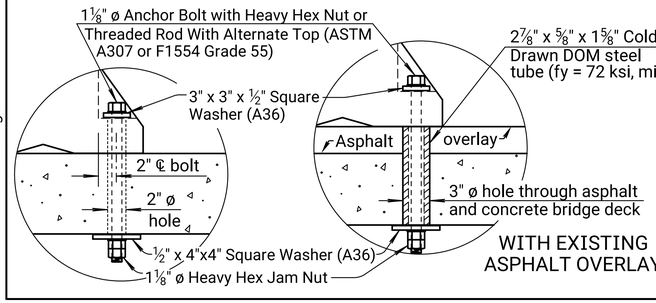


ELEVATION - TREATMENT AT BRIDGE DECK EXPANSION JOINT SCHEMATIC (Expansion < 1½")

ANCHORAGE	ANCHOR BARRIER with 3 BOLTS ON TRAFFIC SIDE	ANCHOR BARRIER with 3 BOLTS ON TRAFFIC SIDE		ANCHOR BARRIER with TIE-DOWN STRAP		ANCHOR BARRIER with STAKES
"A" DISTANCE	0' ≤ A < 2'	0' ≤ A < 2'		△ 2' ≤ A < 4'	6" ≤ A < 2'	6" ≤ A < 2'
LOCATION	Span Bridge	Span Bridge	Box Culverts Roadways - RIGID Pavement	Span Bridge	Box Culverts Roadways - RIGID Pavement	Box Culverts (ceiling below stake depth) Roadways - FLEXIBLE Pavement

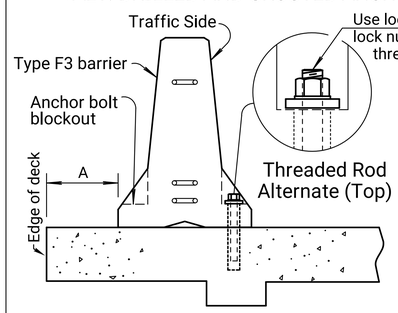
THROUGH BOLT (Preferred)



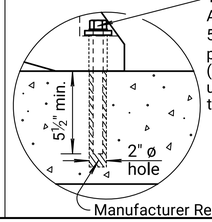


WITH EXISTING ASPHALT OVERLAY

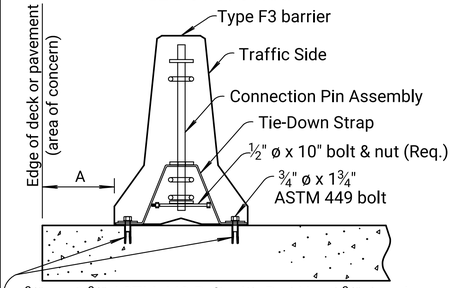
✧ALT. DRILLED AND GROUTED ANCHOR



✧Note: Alternate Drilled and Grouted Anchor installation avoids damage to the support beams, girders or expansion joint. The State Bridge Office shall approve the use of the Alternate Drilled and Grouted Anchor installation for bridge applications.

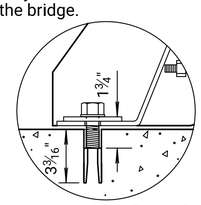


TIE-DOWN STRAP



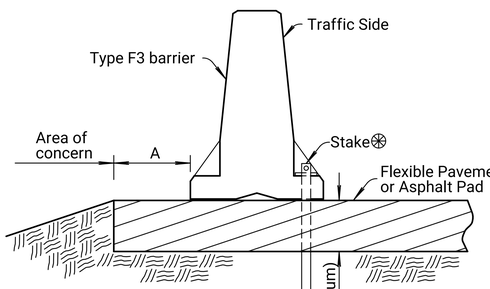
¾" ø x 1 ¾" ASTM 449 Bolt with Red Head ¾" drop in anchor, Red Head large diameter Tapcon (LDT) ¾" ø x 4 ½" long, or Simpson Titen HD ¾" ø x 5" long

△"A" distance may be reduced to 6" if traffic does not travel under the bridge.

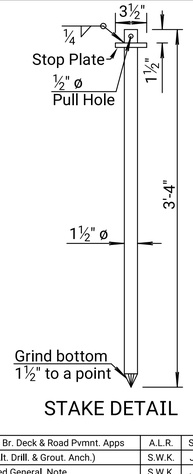


With prior approval from the State Bridge Office, anchoring the barrier with 3 bolts (Through Bolt OR Drilled & Grouted Anchor oprtions) on the traffic side may be used in lieu of tie-down straps.

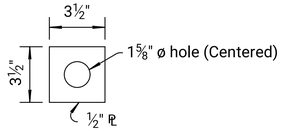
STAKED DOWN



⊛ Predrill 1½" ø holes in flexible pavement prior to installing stakes.



STAKE DETAIL



STOP PLATE DETAIL

NO.	DATE	REVISIONS	BY	APP'D
07	04-21-21	Revised Layouts for Br. Deck & Road Pvmnt. Apps	A.L.R.	S.W.K.
06	12-31-13	Rev. Note (Alt. Drill. & Grout. Anch.)	S.W.K.	J.O.B.
05	06-27-11	Revised General Note	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE SAFETY BARRIER TYPE F3 ANCHORAGE

RD622B

FHWA APPROVAL		04-21-21	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. 100

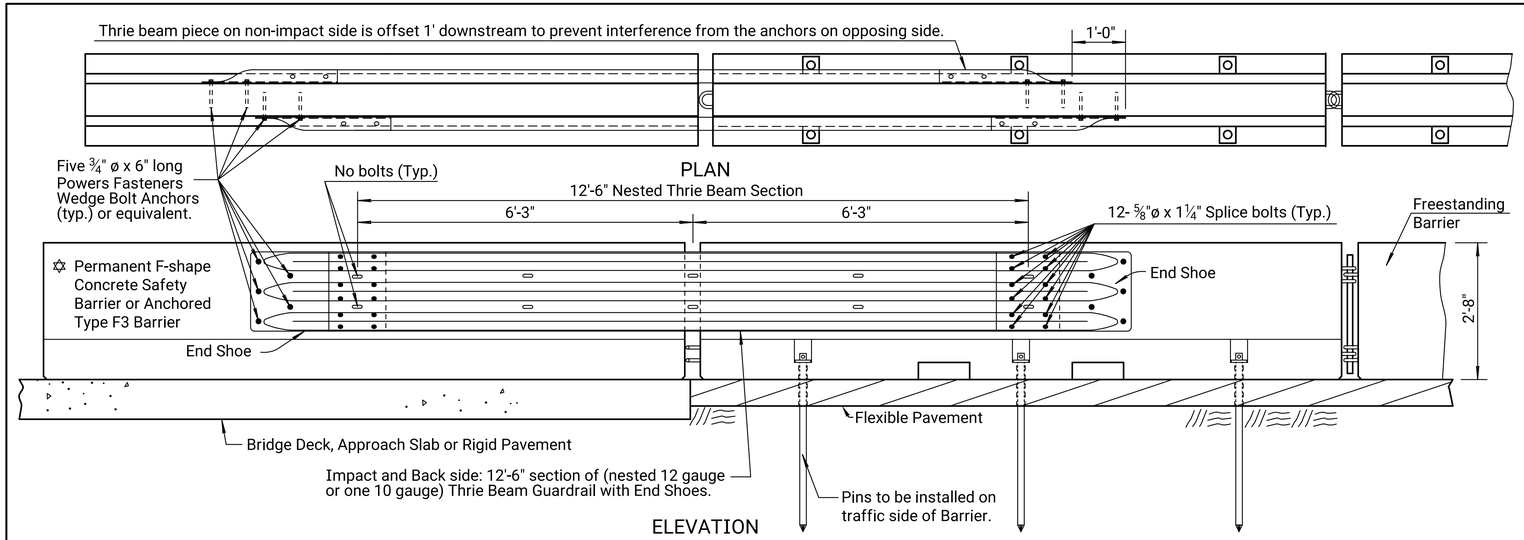
KDOT Graphics Certified

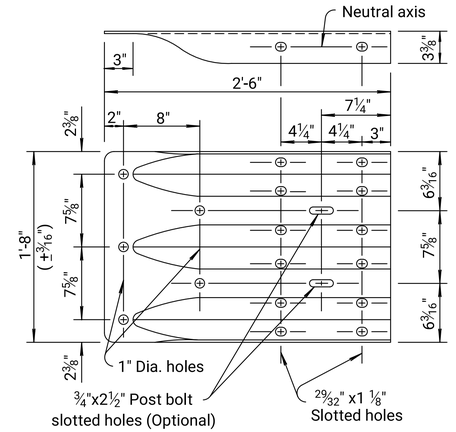
Note to Designer: For use on Haunched slab bridges, the Road Designer shall coordinate with the Bridge Designer for "corridor In the reinforcing steel layout to accommodate barrier anchoring."
Road Designer shall coordinate barrier layout with Bridge Designer to accomodate for expansion during construction.

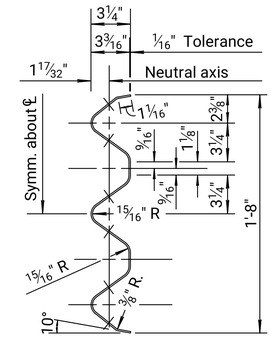
Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:24
File : KA576101rd622b.dgn

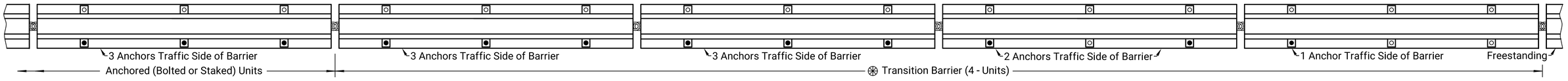
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	101	118

GENERAL NOTES:
The work and materials required for the installation & removal of the guardrail connection and barrier anchors as shown on this sheet shall be subsidiary to the "Concrete Safety Barrier" bid item.

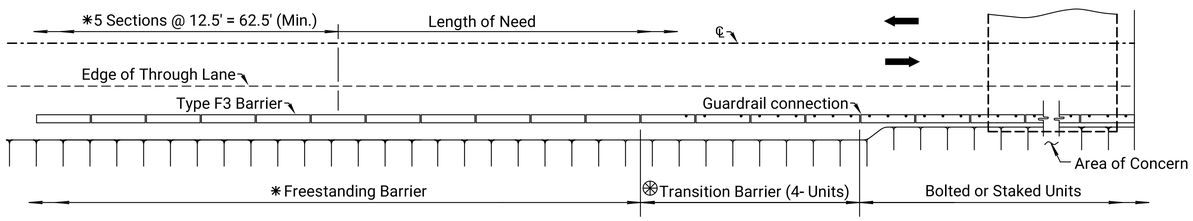




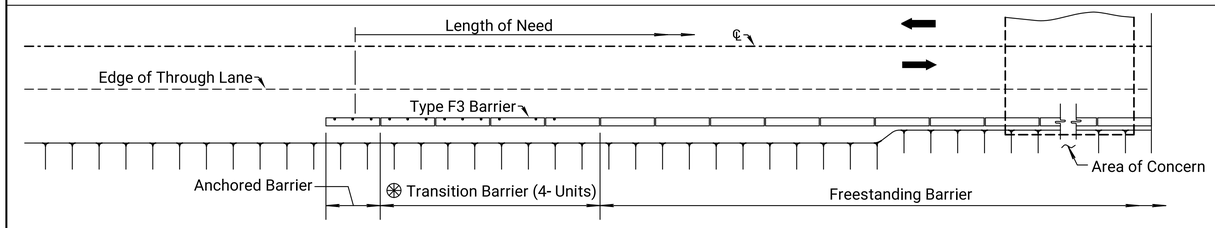




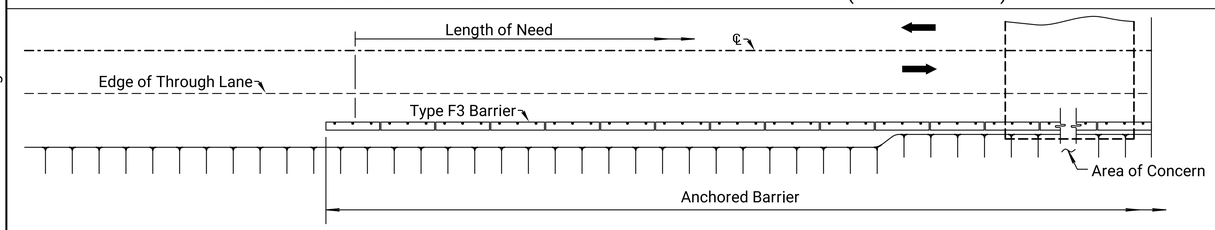
LENGTH OF NEED (LON)



LENGTH OF NEED WITH FREESTANDING TYPE F-3 CONCRETE BARRIER ENDING

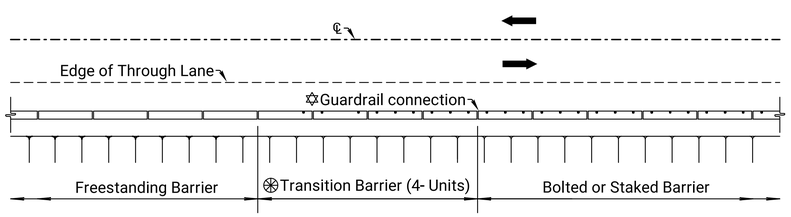


REDUCED LENGTH OF NEED WITH ALTERNATE END ANCHORAGE (FREESTANDING)



REDUCED LENGTH OF NEED WITH ALTERNATE END ANCHORAGE (ANCHORED)

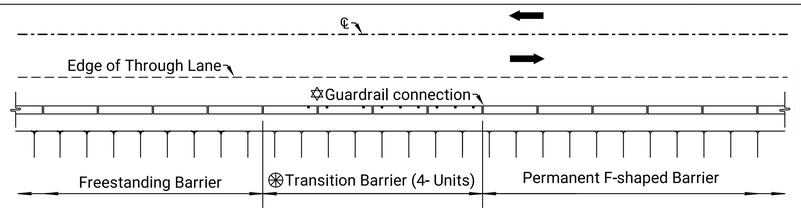
TRANSITION LAYOUTS



TRANSITION "From/To"	✡	✡
Transition from a Freestanding Barrier to a Type F3 Barrier anchored to a rigid pavement with bolted connection or bolted to a bridge deck.	YES	YES
Transition from a Freestanding Barrier to a Type F3 Barrier pinned/staked to asphalt pavement.	NO	YES

✡ Guardrail Connection ✡ Transition Barrier

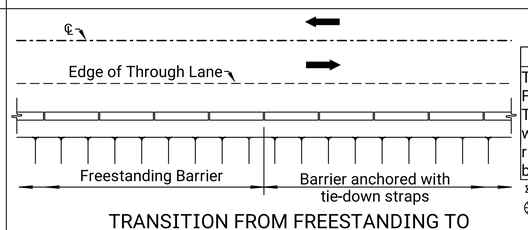
TRANSITION FROM FREESTANDING TO AN ANCHORED (BOLTED OR STAKED) TYPE F-3 BARRIER



TRANSITION "From/To"	✡	✡
Transition from a Freestanding Barrier to a Permanent F-Shape Barrier.	YES	YES

✡ Guardrail Connection ✡ Transition Barrier

TRANSITION FROM FREESTANDING TO PERMANENT F-SHAPED BARRIER



TRANSITION "From/To"	✡	✡
Transition from a Freestanding Barrier to a Type F3 Barrier anchored with tie-down straps on a rigid pavement or a bridge deck.	NO	NO

✡ Guardrail Connection ✡ Transition Barrier

TRANSITION FROM FREESTANDING TO TYPE F3 BARRIER ANCHORED WITH STRAPS

NO.	DATE	REVISIONS	BY	APP'D
02	07-19-19	Added LON & Transition Layouts	A.L.R.	T.T.R.
01	01-30-07	Rem. temp. details from perm. barrier	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE SAFETY BARRIER TYPE F3 TRANSITION LAYOUTS

RD622D

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

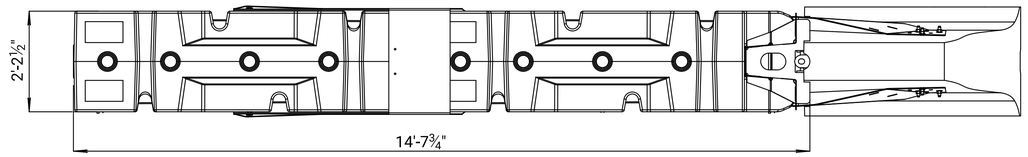
KDOT Graphics Certified 05-13-2022 Sh. No. 101

KDOT Graphics Certified

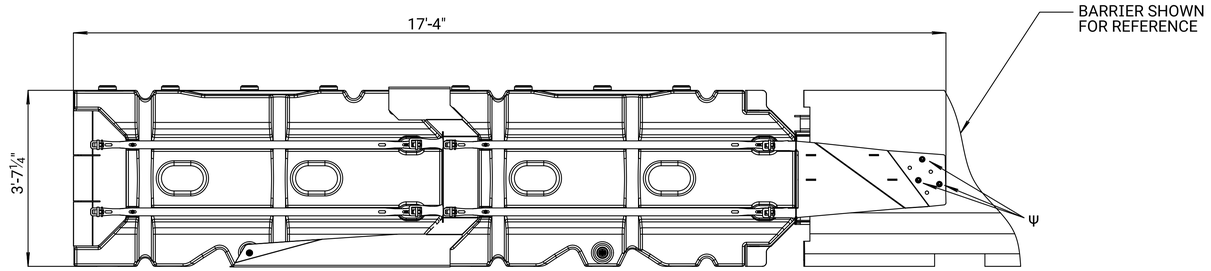
✳ Note to Designer: The minimum length for Freestanding Temporary Concrete Safey Barrier (TCSB) Installations is 11 sections @ 12.5' = 137.5'. In a Freestanding TCSB installation, if both ends are anchored, fewer than 11 sections of Freestanding TCSB may be used.
The 5 sections of Freestanding TCSB beyond the length of need may be reduced to 3 sections if the barrier is located on the exit end and traffic is traveling in a single direction.

Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:24
File : KA576101rd622d.dgn

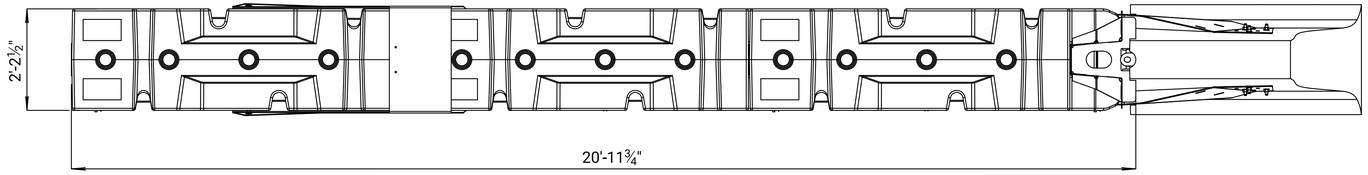
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	102	118



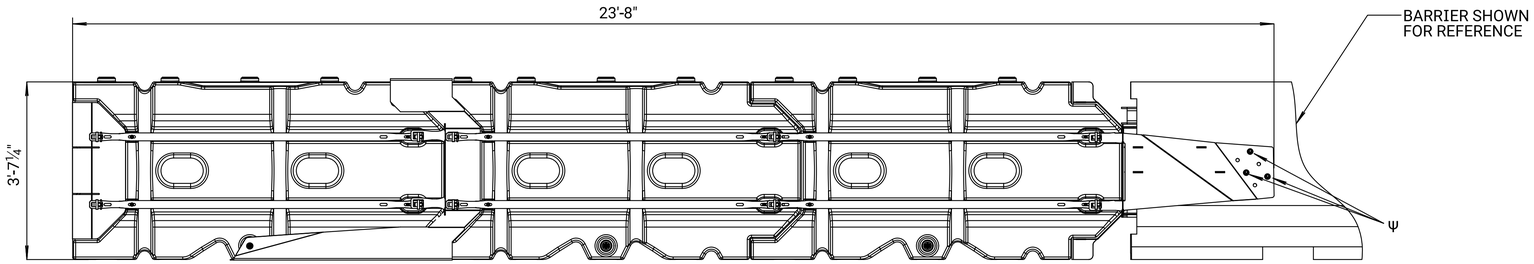
PLAN (TL2 ≤ 45 mph)



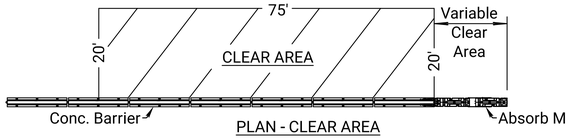
ELEVATION (TL2 ≤ 45 mph)



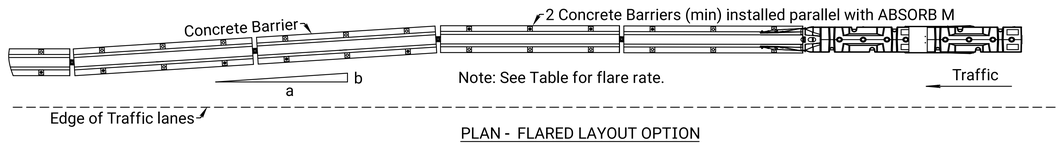
PLAN (TL3 > 45 mph)



ELEVATION (TL3 > 45 mph)



PLAN - CLEAR AREA



PLAN - FLARED LAYOUT OPTION

Design Parameters	
Design Speed (mph)	Flare Rate (a:b)
70	15:1
60	14:1
55	12:1
50	11:1
45	10:1
40	8:1

GENERAL NOTES

Details shown on this sheet for ABSORB-M are for Information Only and may not be an exact detail of ABSORB-M. See the Manufacturer's Installation Manual furnished to the Engineer for details of components and installation for the ABSORB-M.

ABSORB-M is an anchorless system designed to perform on a variety of foundations including concrete, asphalt, and any other surfaces capable of bearing the weight of the system with a maximum cross-slope of 8.0%. Contact the manufacturer for slopes greater than 8.0%.

The installation area should be flattened and free from large debris. The ABSORB-M system should be approximately parallel with the barrier or ℄ of merging barriers. Maintain a clear area 20' parallel from the back of barrier for a distance of 75' behind ABSORB-M Terminal Assembly free of stockpiled material, equipment, temporary signs or obstructions regardless of crash worthiness. Do not install Absorb-M Impact Attenuator in Narrow Medians, on Elevated Structures or where Clear Area can't be achieved.

The front element of the ABSORB-M system should be left empty, while the remaining system is to be filled with water. Installation in Kansas requires an anti-freeze solution to prevent the water from freezing. See the Manufacturer's Installation Manual for acceptable anti-freeze solutions.

The unit shown on this sheet abuts a barrier up to 24" wide. The ABSORB-M TL2 & TL3 can be connected to permanent or temporary saftey shape, constant slope, and other shapes of barriers up to 42" height. Refer to the Manufacturer's Installation Manual for these connections.

Ψ Anchorage holes must be drilled to depth as per the Manufacturer's Installation Manual and cleared of debris to achieve proper anchorage.

For system relocation information, see Manufacturer's Installation Manual.

All work and material required for installation of this attenuator shall be paid under the bid item "Impact Attenuator (Temporary)(TL-2 or TL-3)".

NO.	DATE	REVISIONS	BY	APP'D
01	04-15-22	Initial Release	A.L.R.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY IMPACT ATTENUATOR ABSORB-M

RD621A

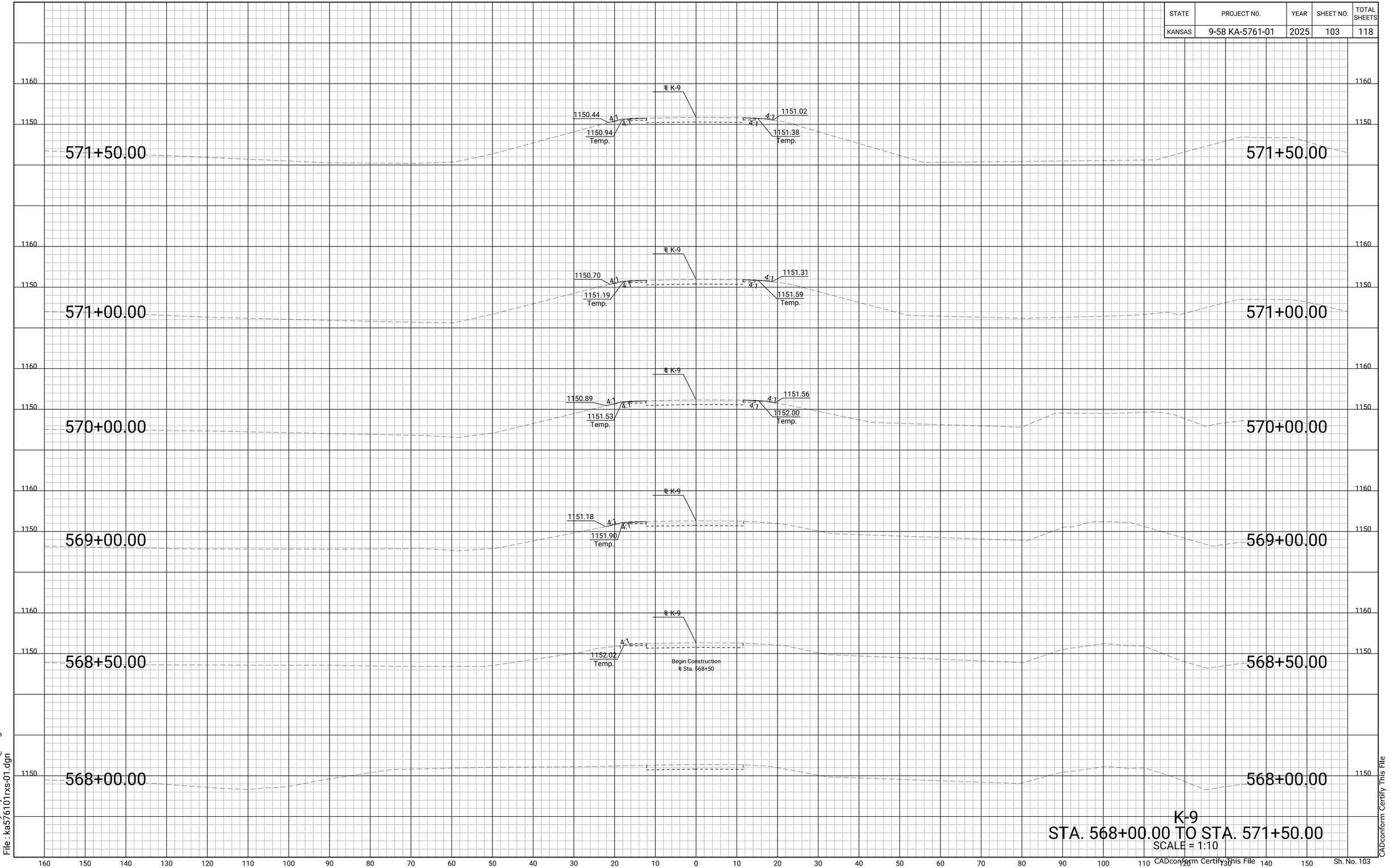
FHWA APPROVAL	04-21-22	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

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Plotted by : Joseph.Abboud@ks.gov 14-OCT-2025 13:24
File : KA576101RD621A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	103	118



K-9

STA. 568+00.00 TO STA. 571+50.00

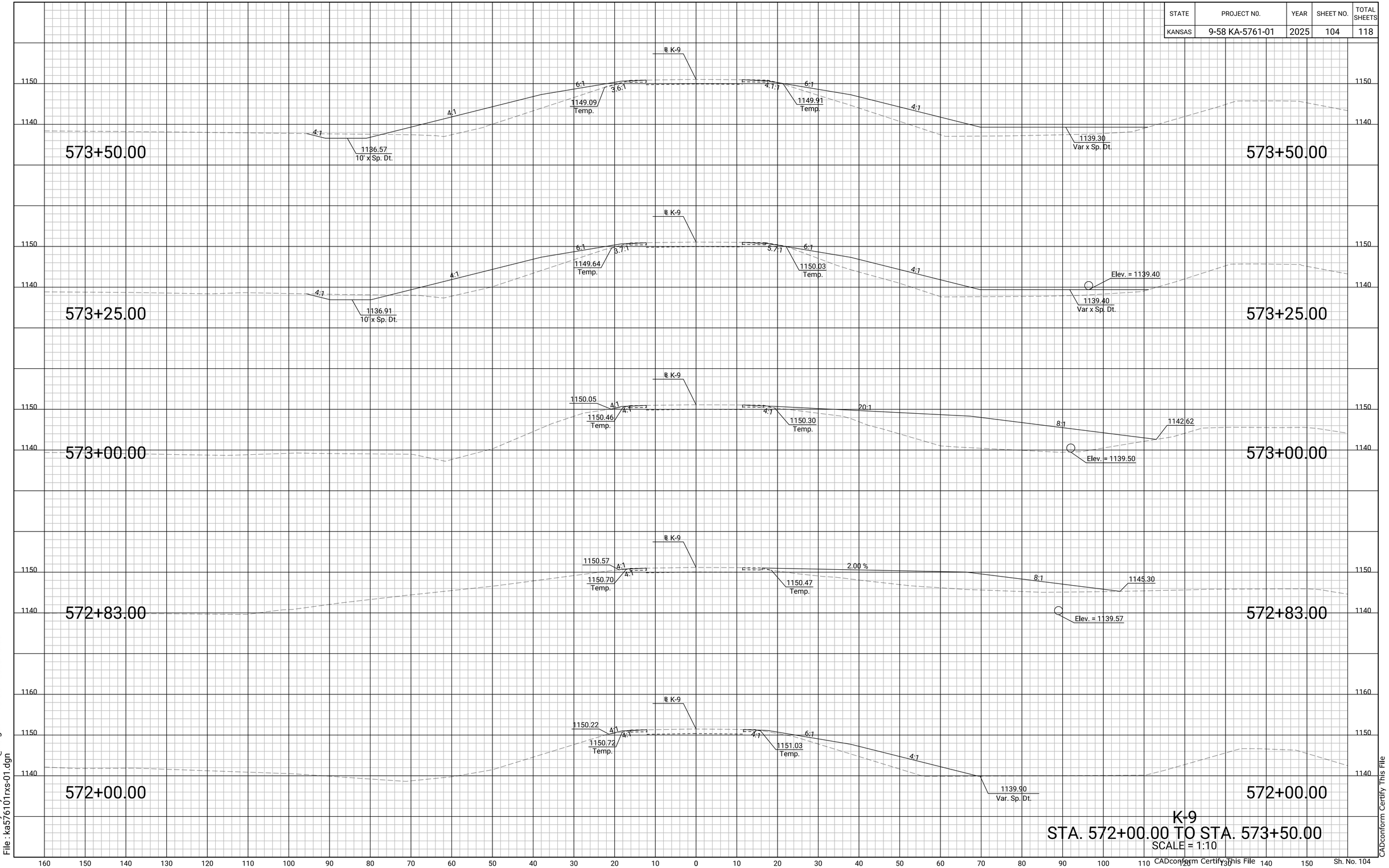
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Sh. No. 103

Plotted by : Dylan.Newell@ks.gov 16-OCT-2025 13:30
File : ka576101rxs-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	104	118



K-9

STA. 572+00.00 TO STA. 573+50.00

SCALE = 1:10

CADconform Certify This File

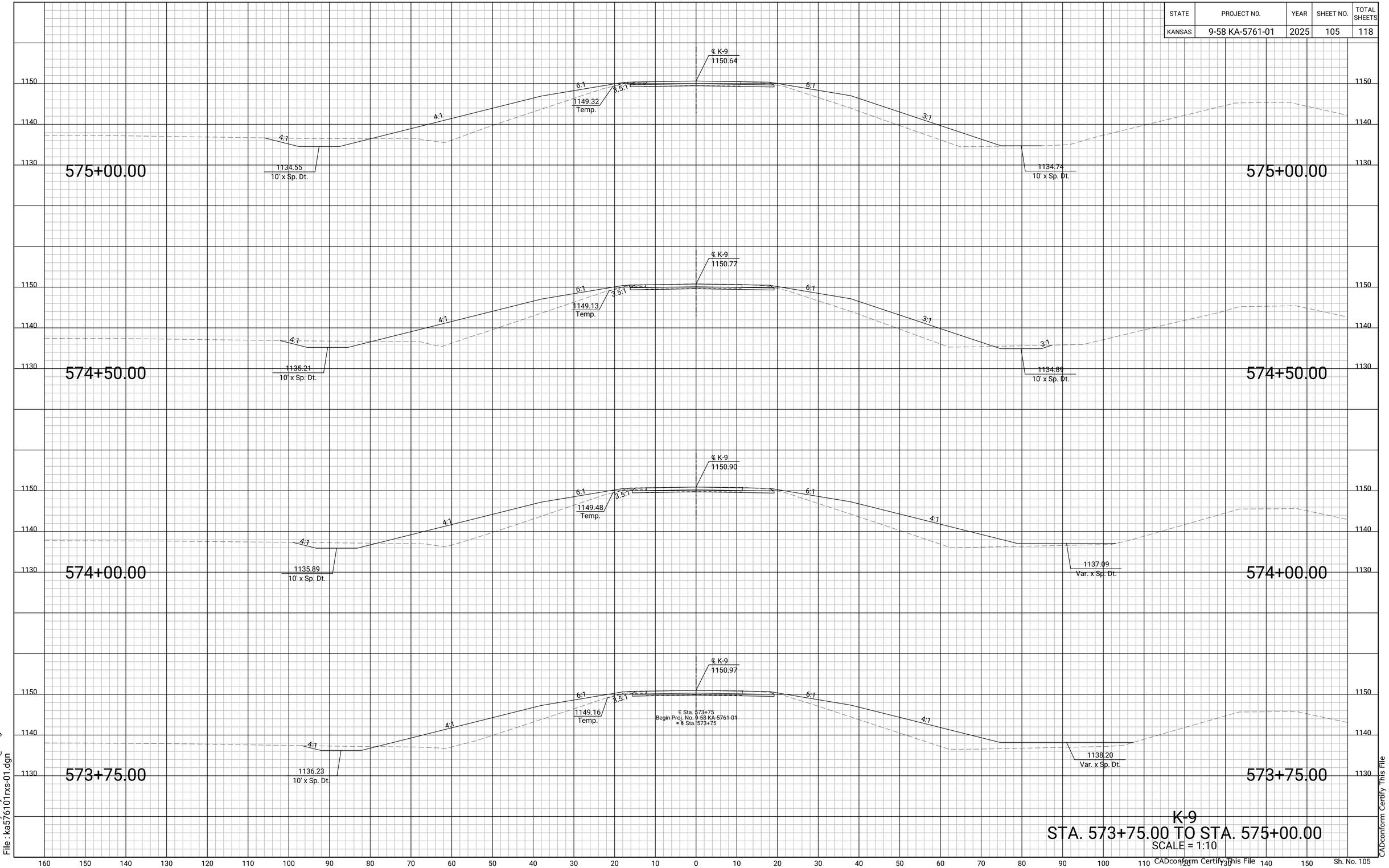
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	105	118



K-9

STA. 573+75.00 TO STA. 575+00.00

SCALE = 1:10

CADconform Certify This File

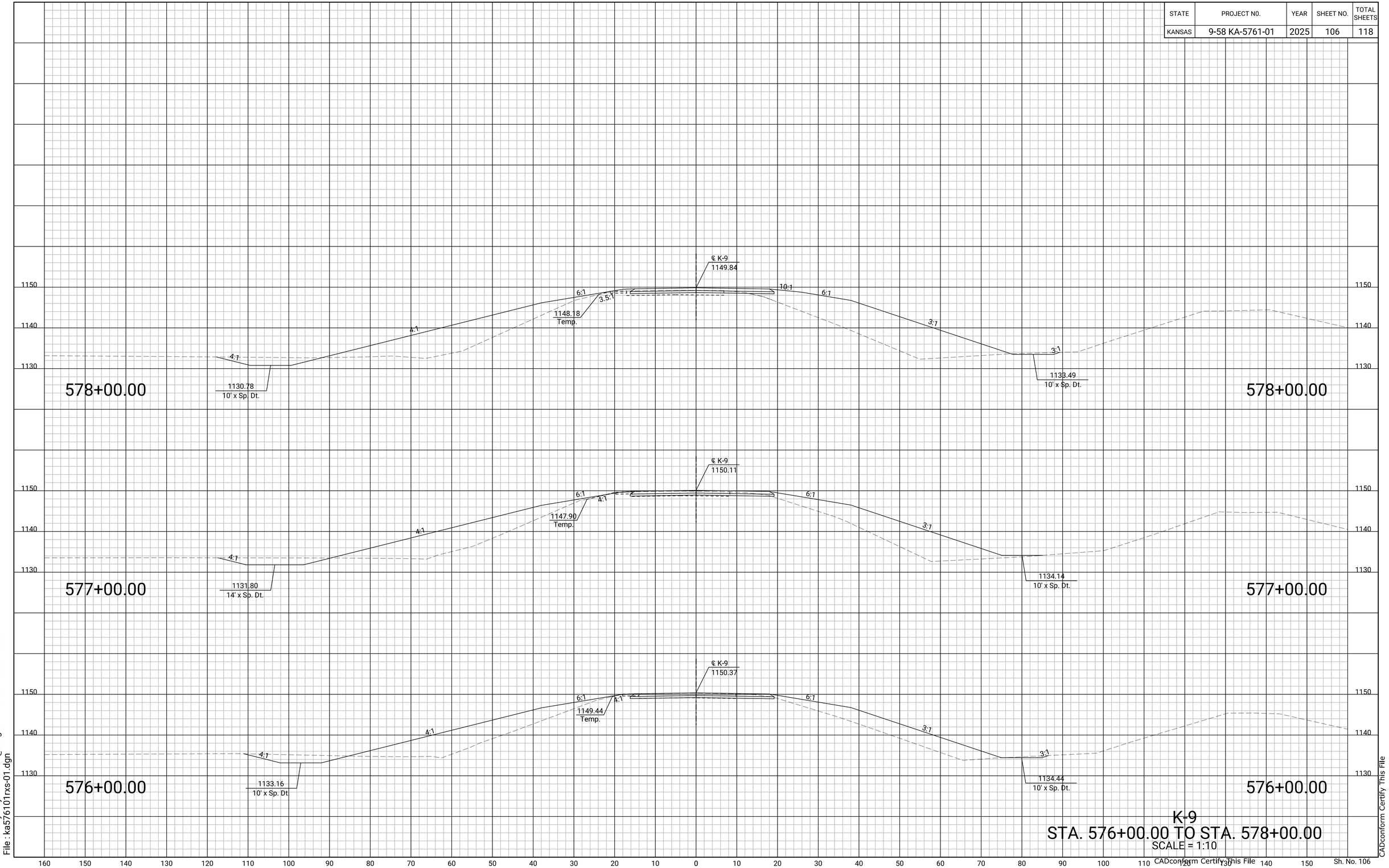
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	106	118

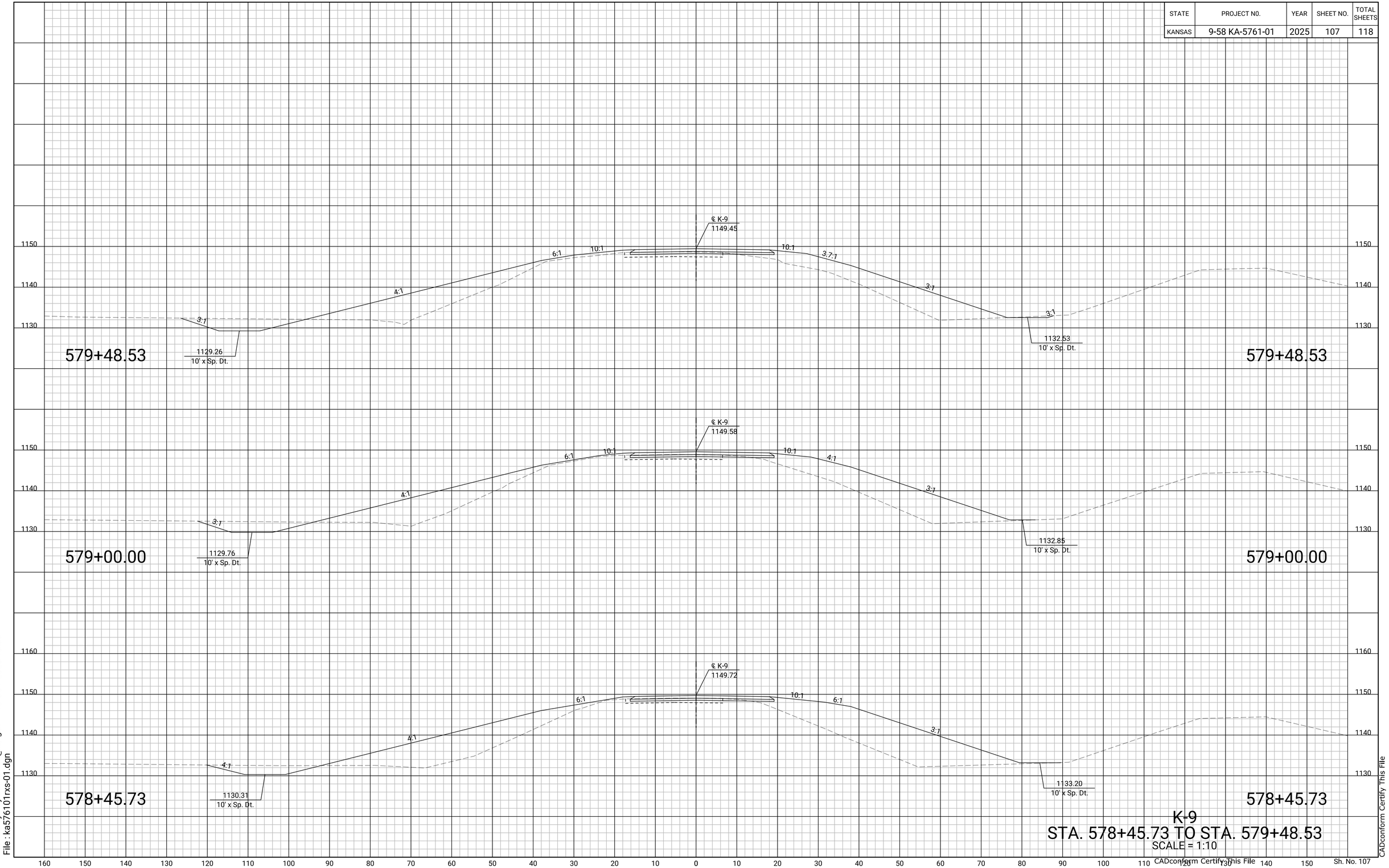


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K-9
STA. 576+00.00 TO STA. 578+00.00
SCALE = 1:10

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	107	118



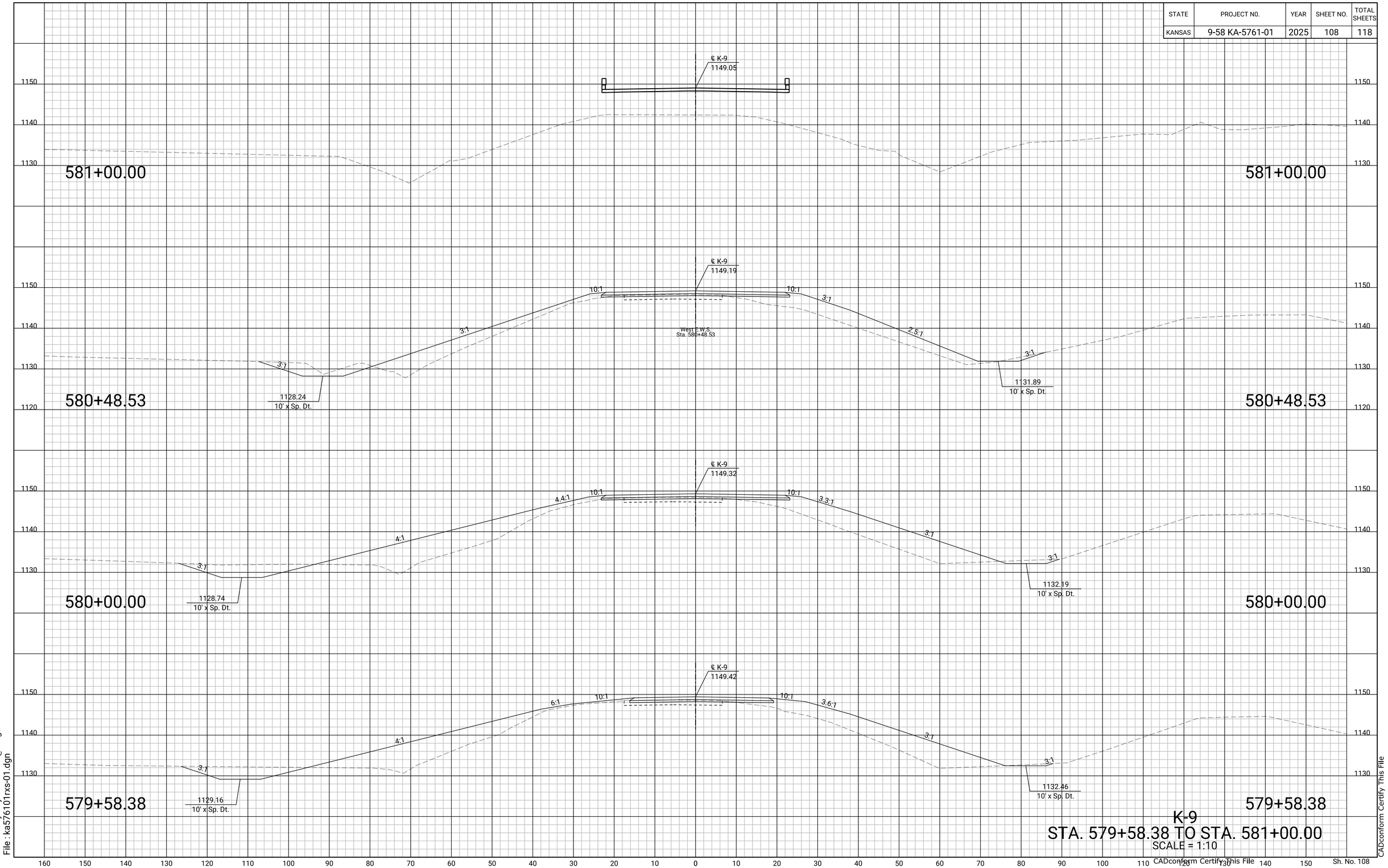
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K-9
STA. 578+45.73 TO STA. 579+48.53
SCALE = 1:10

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Sh. No. 107

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	108	118



K-9

STA. 579+58.38 TO STA. 581+00.00

SCALE = 1:10

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Sh. No. 108

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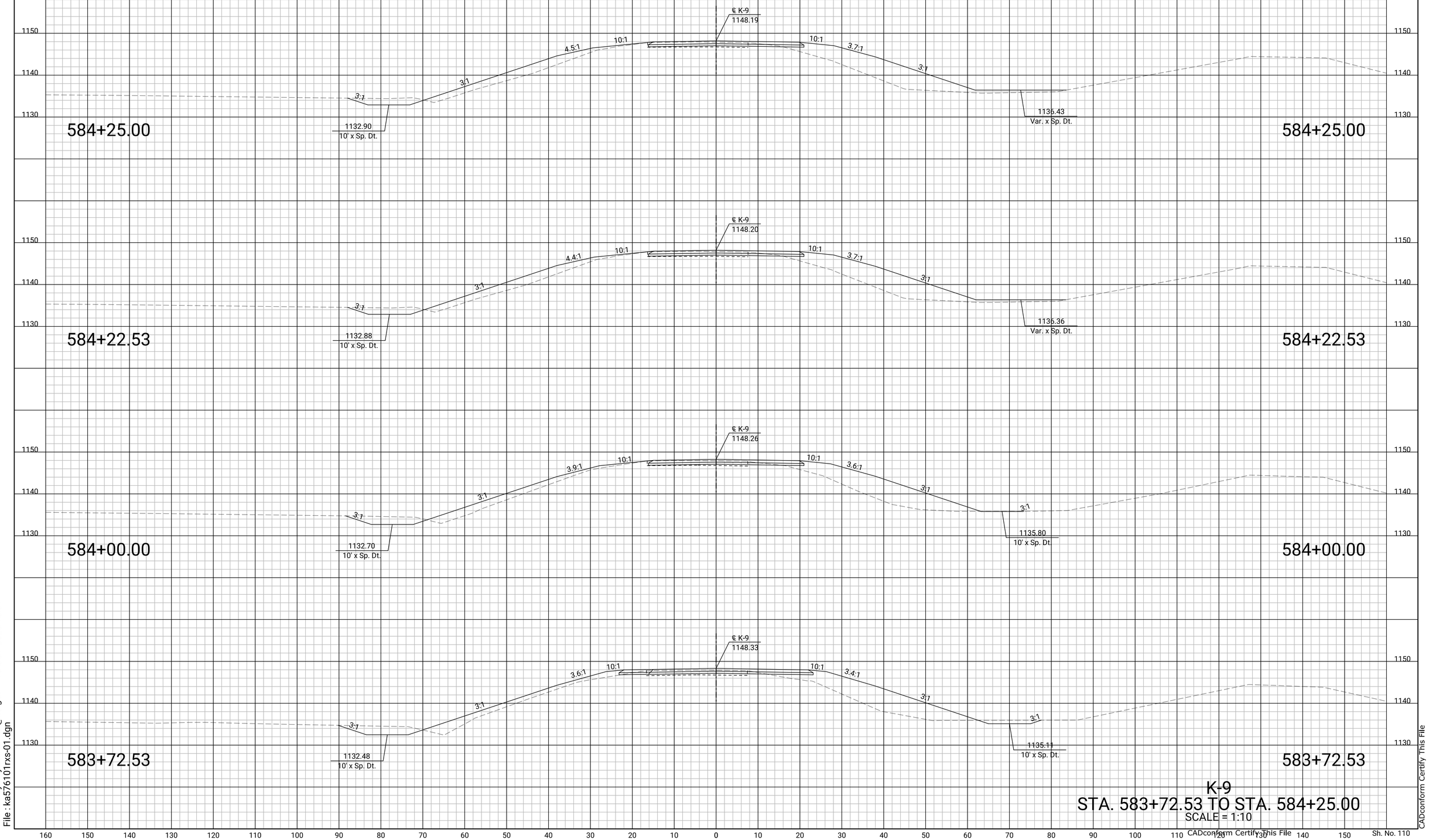
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KANSAS	9-58 KA-5761-01	2025	109	118

K-9
STA. 582+00.00 TO STA. 583+22.53
SCALE = 1:10

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	110	118



K-9

STA. 583+72.53 TO STA. 584+25.00

SCALE = 1:10

CADconform Certify This File

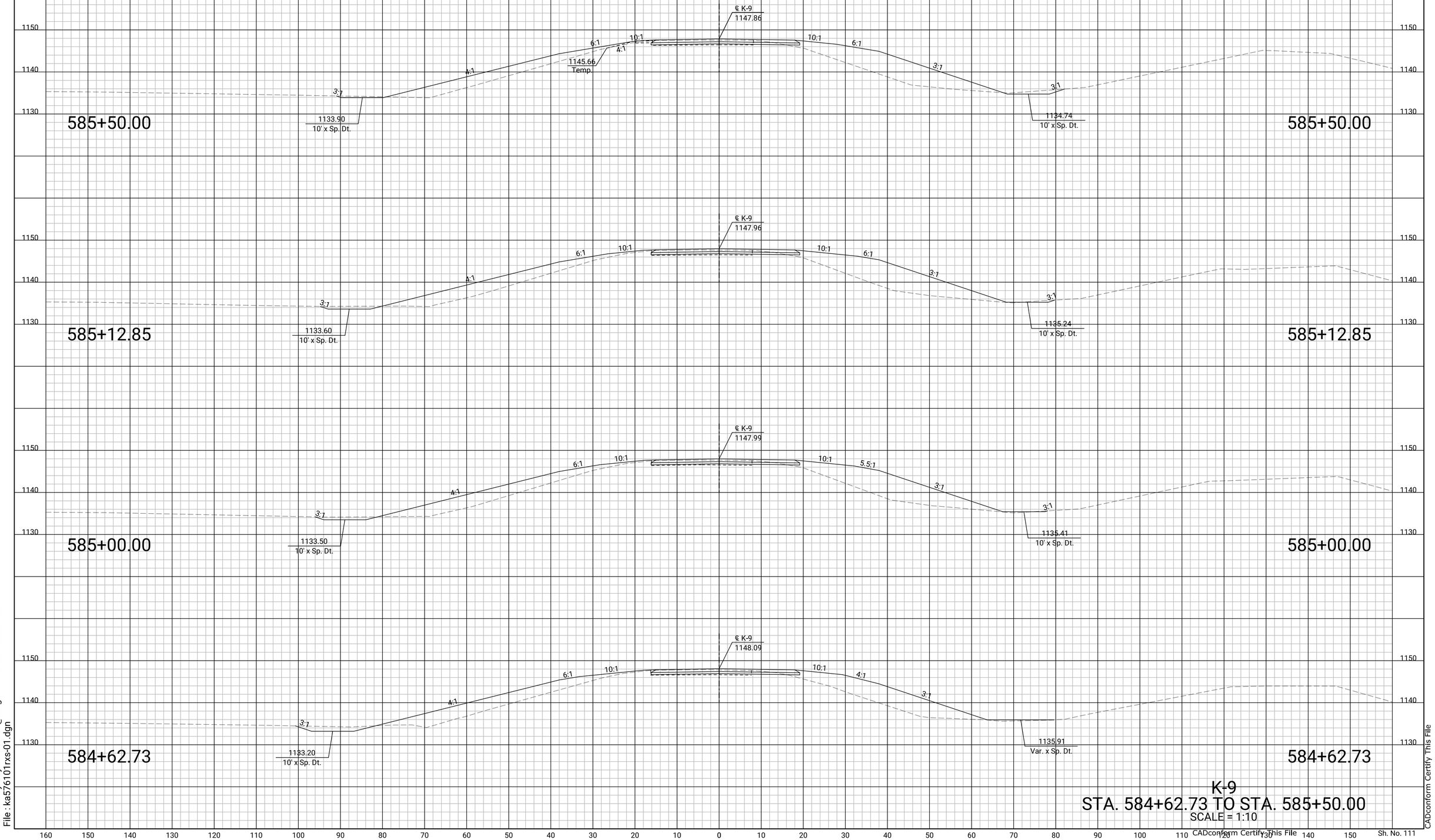
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	111	118



K-9

STA. 584+62.73 TO STA. 585+50.00

SCALE = 1:10

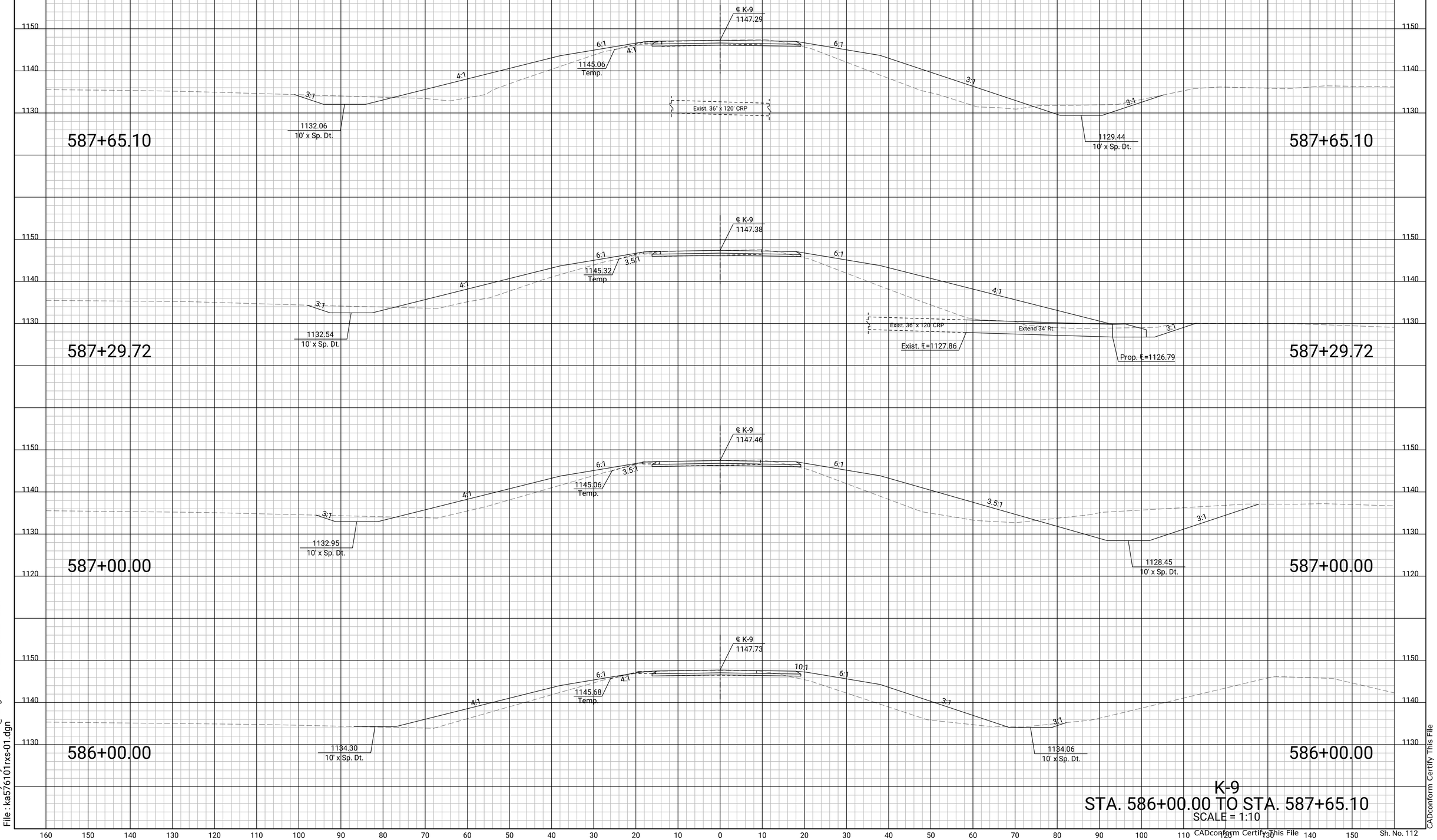
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	112	118



K-9

STA. 586+00.00 TO STA. 587+65.10

SCALE = 1:10

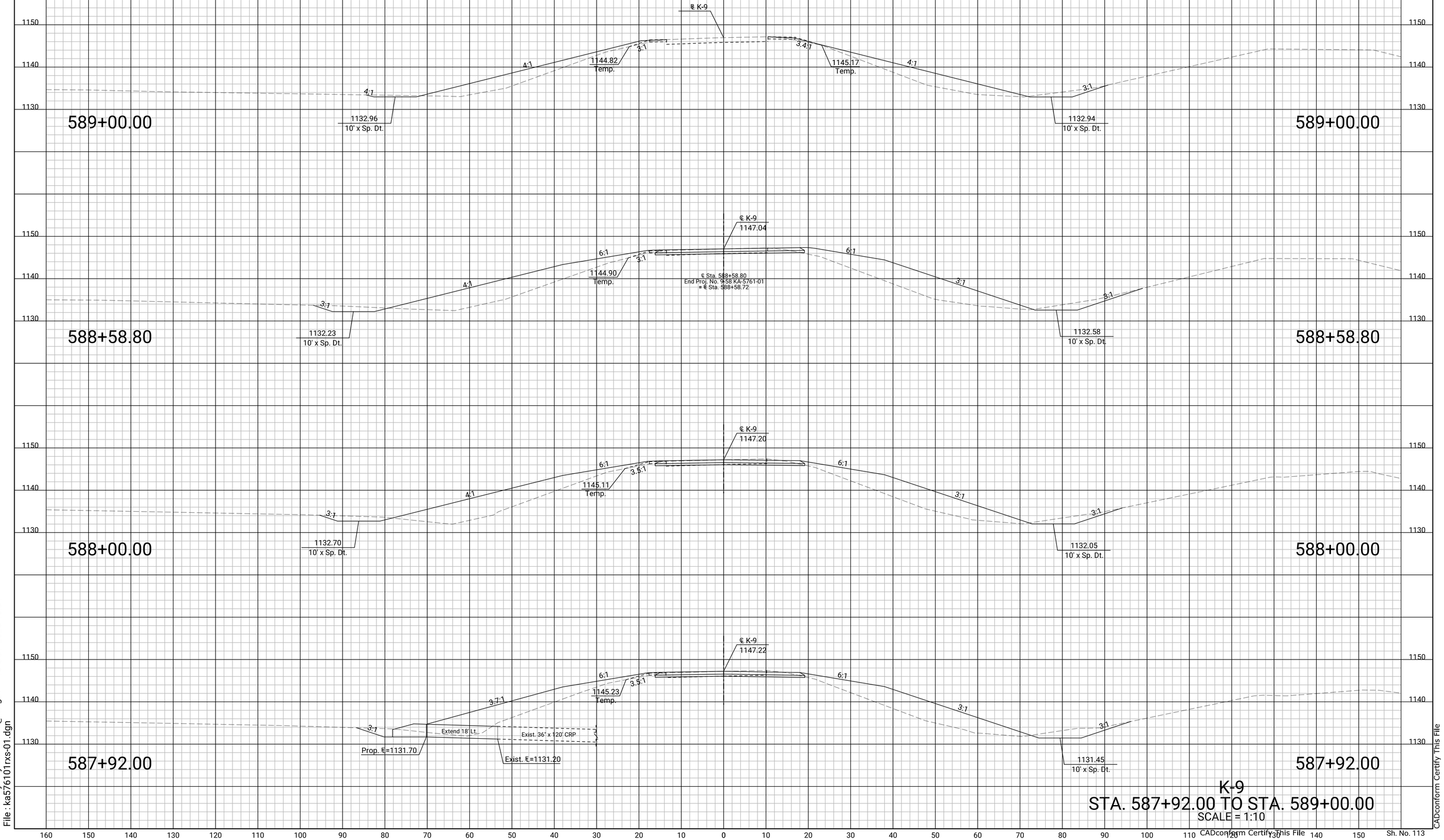
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	113	118



K-9

STA. 587+92.00 TO STA. 589+00.00

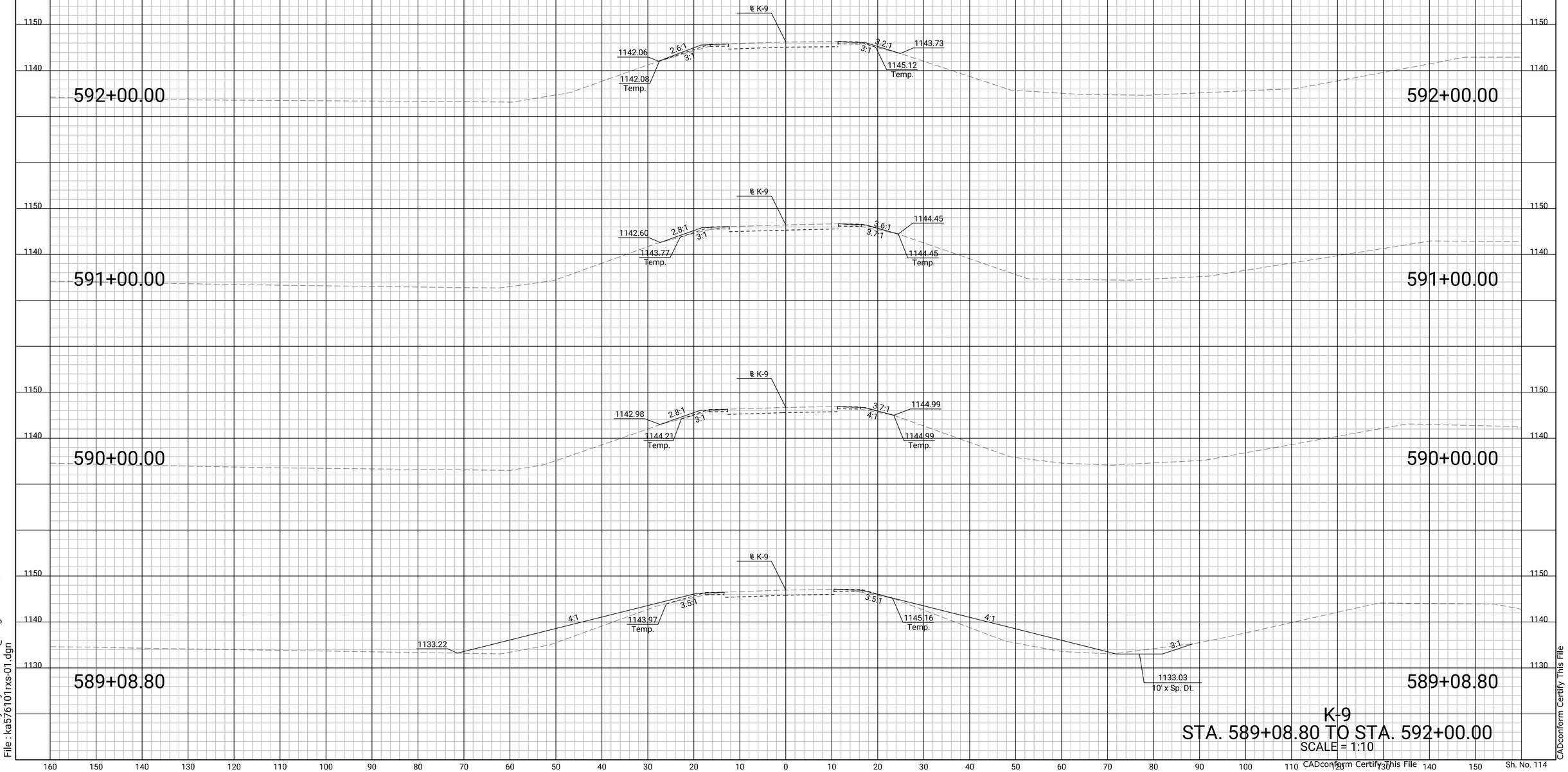
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	114	118



K-9

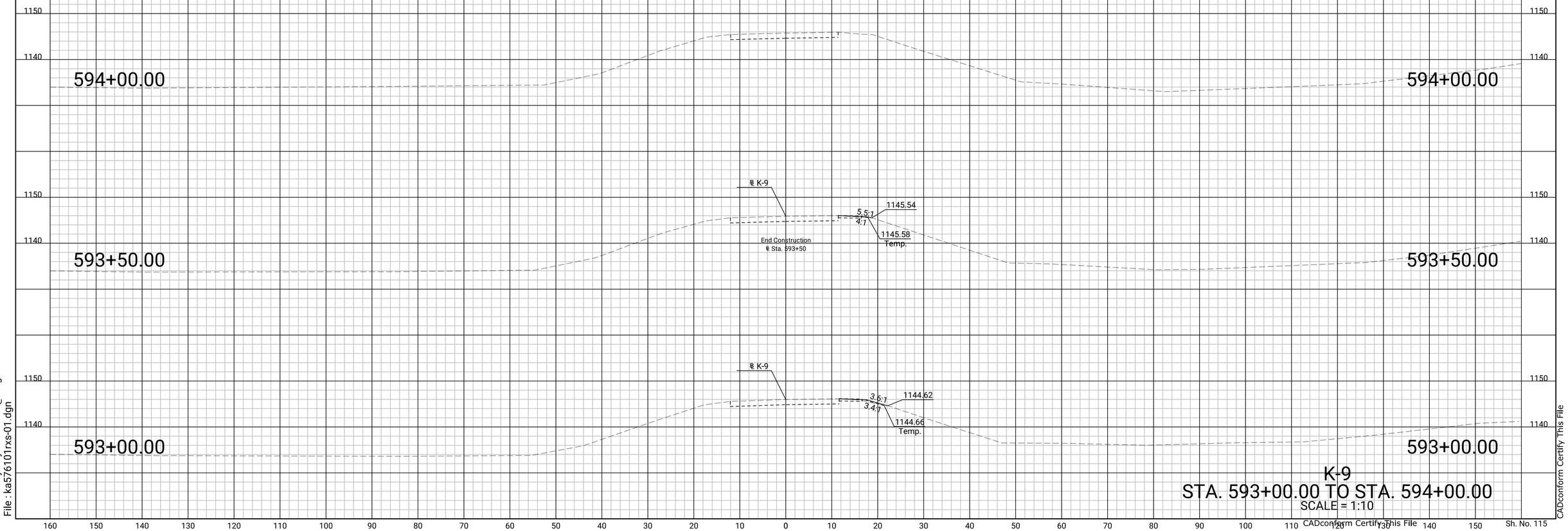
STA. 589+08.80 TO STA. 592+00.00

SCALE = 1:10

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File : ka576101rxs-01.dgn

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	115	118



K-9

STA. 593+00.00 TO STA. 594+00.00

SCALE = 1:10

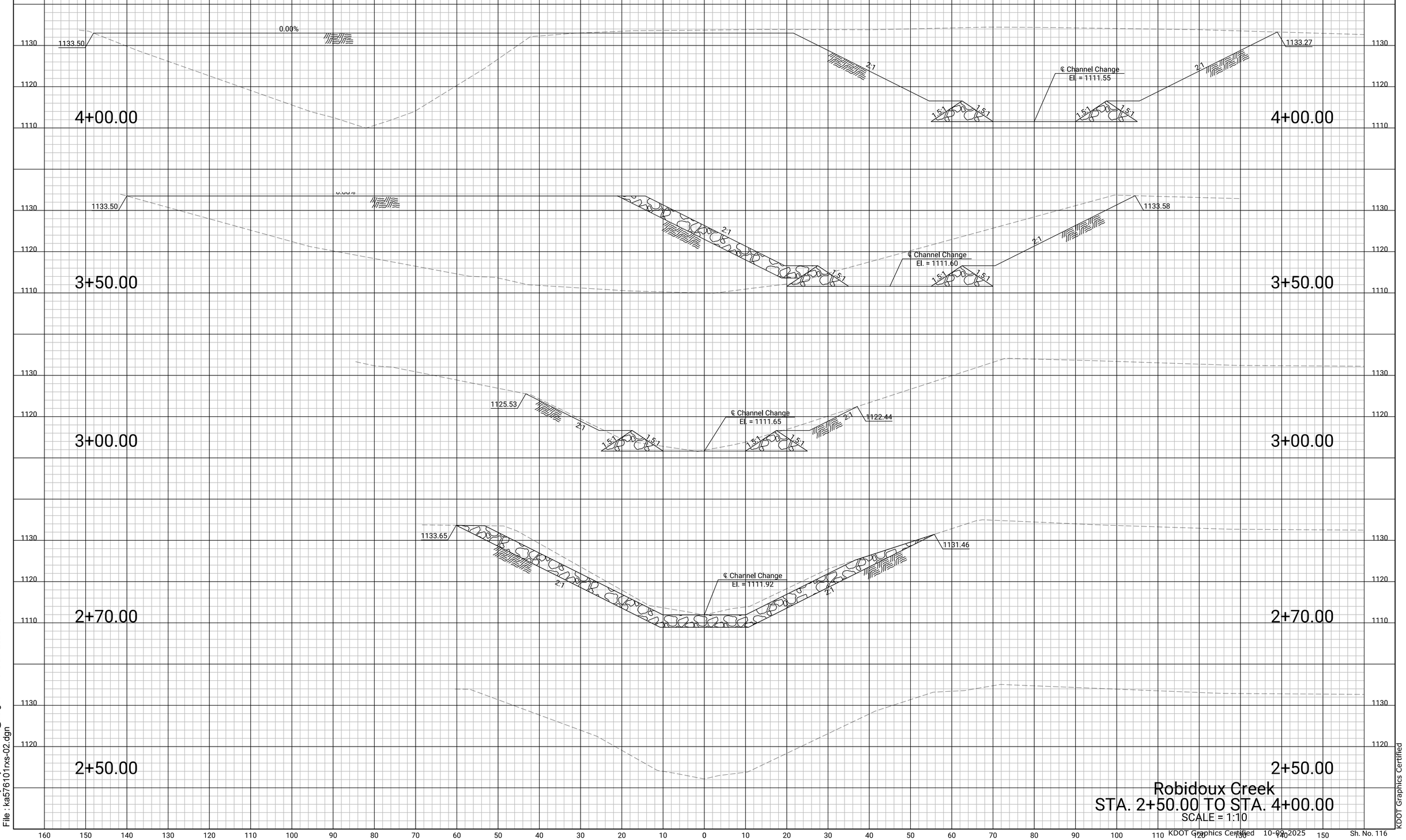
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	116	118



Robidoux Creek
STA. 2+50.00 TO STA. 4+00.00
SCALE = 1:10

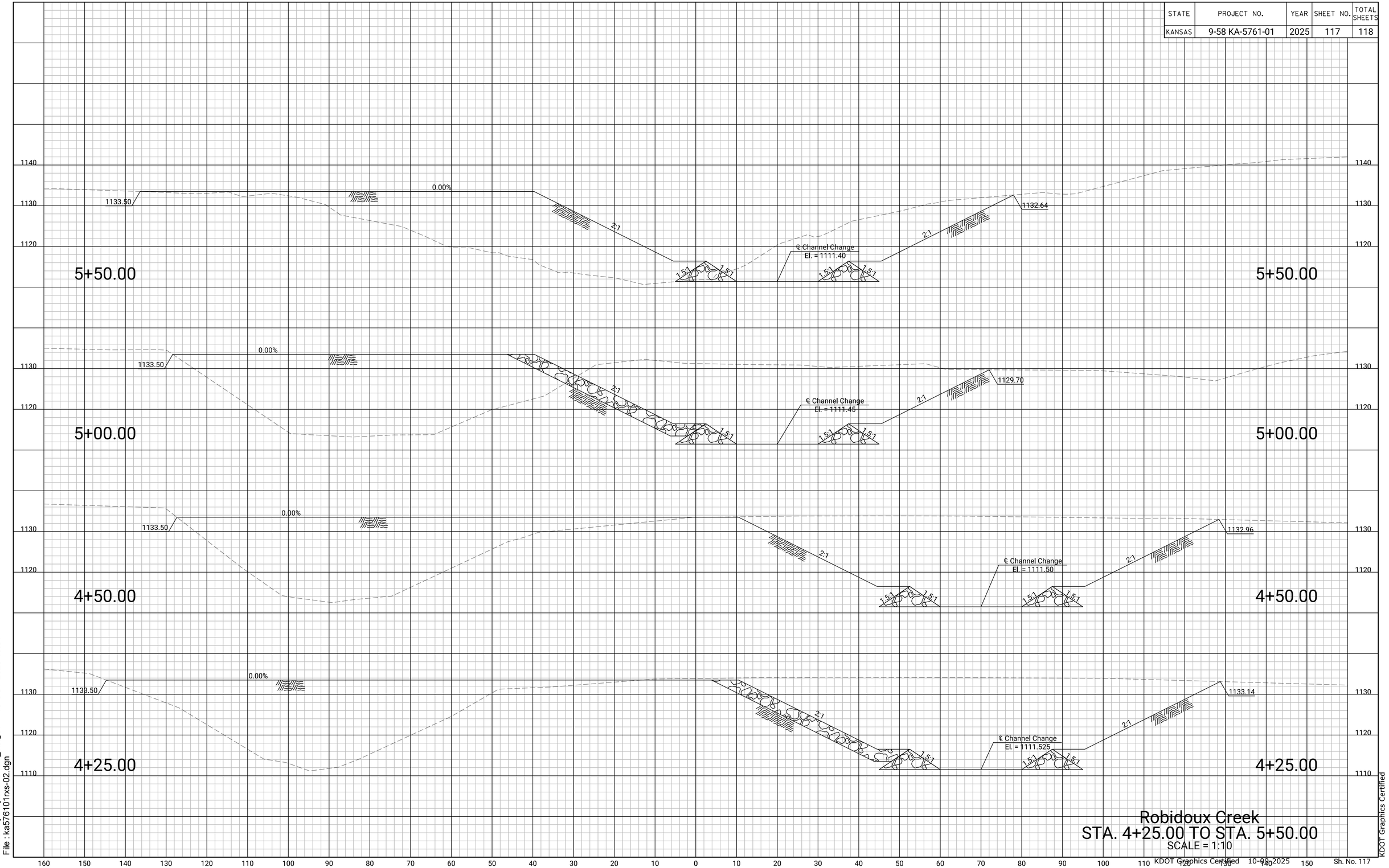
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Sh. No. 116

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	117	118



Robidoux Creek
STA. 4+25.00 TO STA. 5+50.00
SCALE = 1:10

Plotted by : Dylan.Newell@ks.gov 16-OCT-2025 13:31
File : ka576101rxs-02.dgn

KDOT Graphics Certified 10-09-2025 Sh. No. 117

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	9-58 KA-5761-01	2025	118	118

7+00.00

1130
1120

1124.46
2:1
℄ Channel Change
El. = 1111.30
2:1
1132.75

6+50.00

1140
1130
1120

0.00%
1133.50
2:1
1.5:1
1.5:1
℄ Channel Change
El. = 1111.35
1.5:1
1.5:1
2:1
1137.04

6+00.00

Robidoux Creek
STA. 6+00.00 TO STA. 7+00.00
SCALE = 1:10

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Sh. No. 118

Plotted by : Dylan.Newell@ks.gov 16-OCT-2025 13:31
File : ka576101rxs-02.dgn

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