STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	1	45

KDOT Proj. No. 69-105 KA-4939-01
Bridge No. 69-105-0.93(130)
Bridge Repair

Federal Project No. ACNHP-A493 (901)

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED

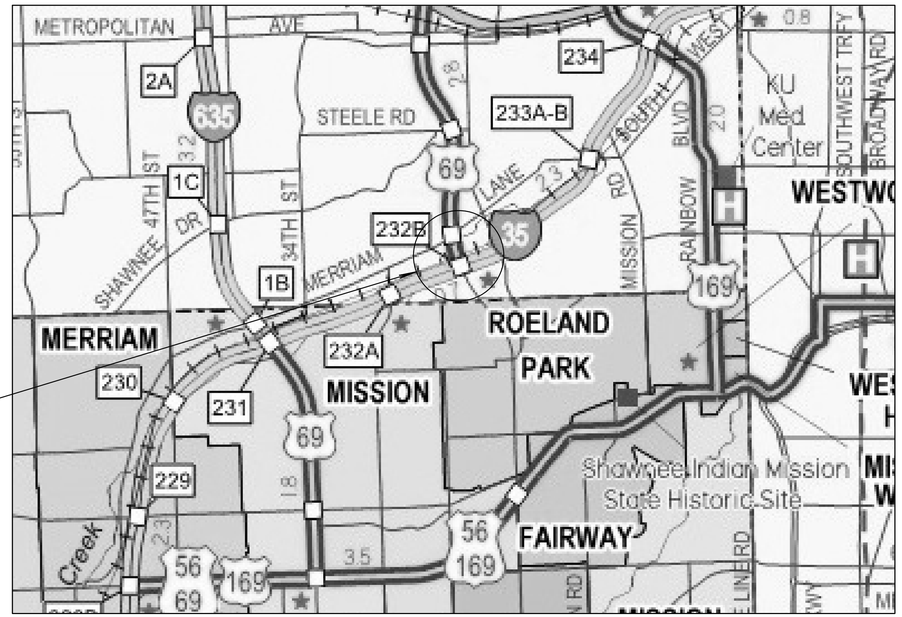
STATE HIGHWAY

FEDERAL AID PROJECT

WYANDOTTE COUNTY

US–69

INDEX OF SHEETS



Proj. No. 69-105 KA-4939-01
Br. No. 69-105-0.93 (130)
US-69 over Merrian Lane and Turkey Creek

Not to Scale

DESIGN DESIGNATION

AADT (2017) = 25,900
T = 5%
V = 50 MPH

CONVENTIONAL SIGNS

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

GROSS LENGTH OF PROJECT	552.00	FT. (Includes Equations)		
EXCEPTIONS				
NET LENGTH OF PROJECT	552.00	FT.	0.105	MILES
NET LENGTH OF BRIDGES	472.00	FT.	0.089	MILES
NET LENGTH OF ROAD	80.00	FT.	0.015	MILES

DARIN L. SPLITTGERBER
LICENSED
23814
KANSAS
PROFESSIONAL ENGINEER
2-5-2019

PLANS PREPARED AND SUBMITTED BY
HDR ENGINEERING, INC.
KANSAS CITY, MISSOURI

Note: Bridge will be reduced to one lane in each direction throughout the duration of the Project.

Approved _____
Date

State Transportation Engineer

By:

Chief, Bureau of Road Design

KANSAS DEPARTMENT OF TRANSPORTATION

	BY	DATE
SURVEY		
CADD TECHNICIAN	HDR - J. Haverson	2019
DESIGNERS	HDR - E. Schrader (Bridge)	2019
SQUAD		

Plotted : 02-05-19
Drawn By : user
File : c:\pwworking\central01\d0926726\ka493901rti-01.dgn

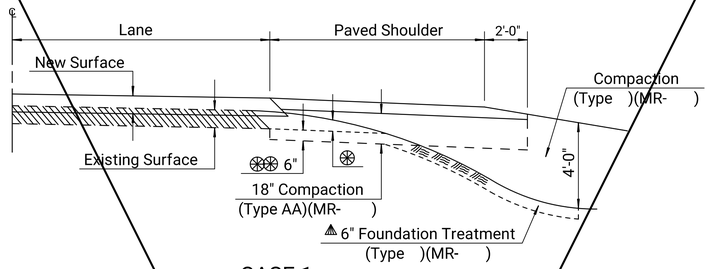
KDOT Graphics Certified 02-05-2019

KDOT Graphics Certified

Sh. No. 1

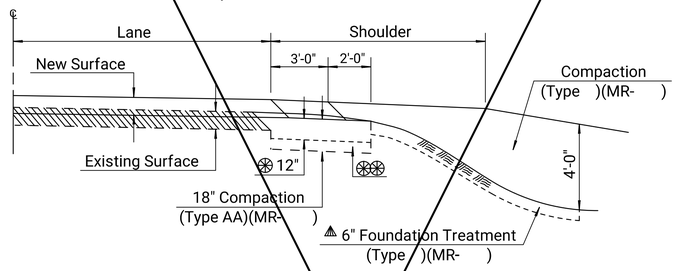
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	2	45

REHABILITATION



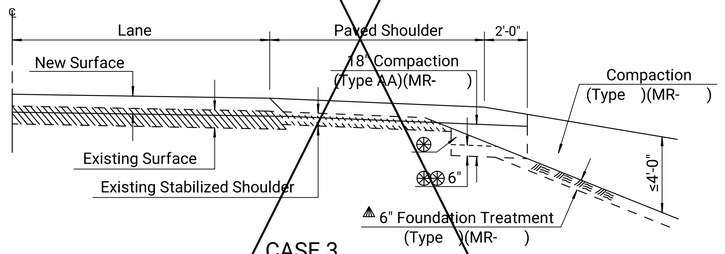
CASE 1

Overlay with Paved Shoulder



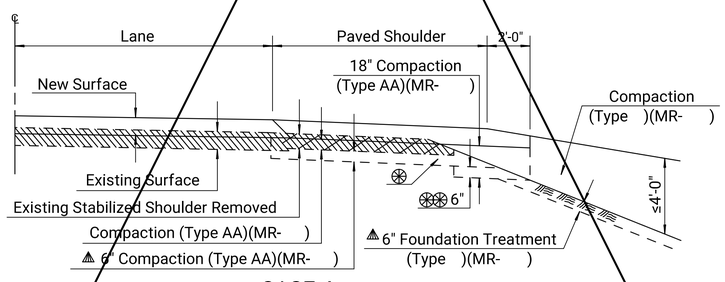
CASE 2

Overlay with Composite Shoulder



CASE 3

Overlay with Existing Paved Shoulder



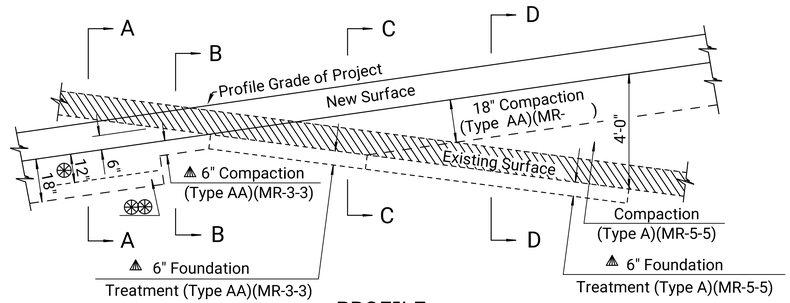
CASE 4

Overlay with Shoulder Replacement

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

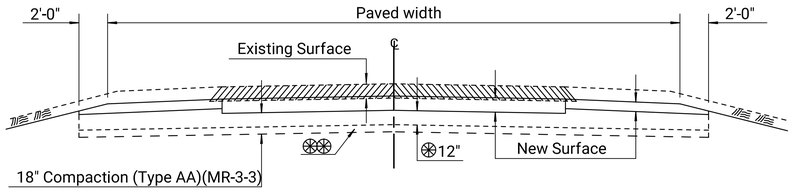
Note: These are 4 general cases. Specific compaction requirements are determined on a project-by-project basis.

RECONSTRUCTION

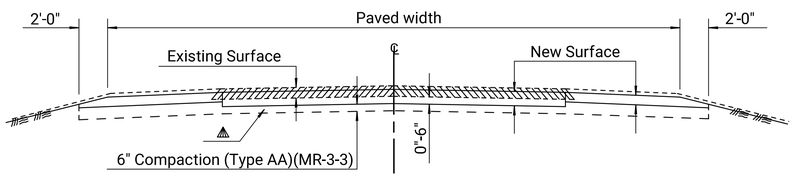


PROFILE

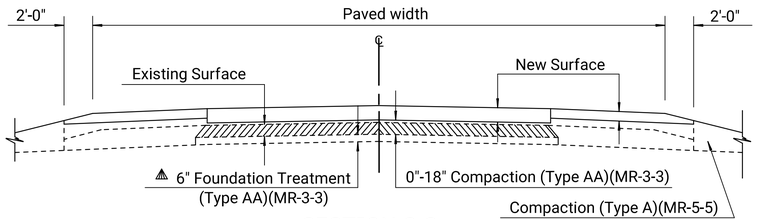
Excavation thru Cuts not Subgraded
The lower 6" of Compaction is subsidiary.
Compaction of this material shall be subsidiary.



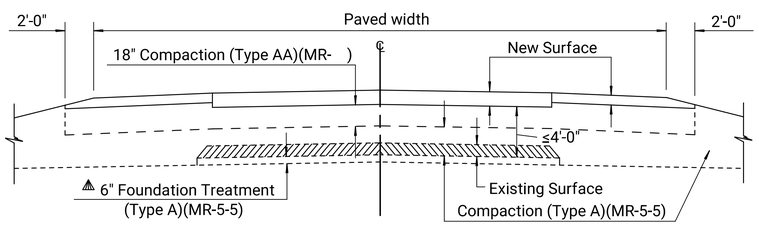
SECTION A-A



SECTION B-B

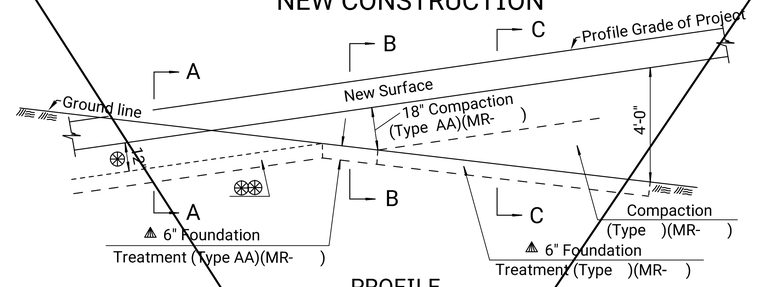


SECTION C-C



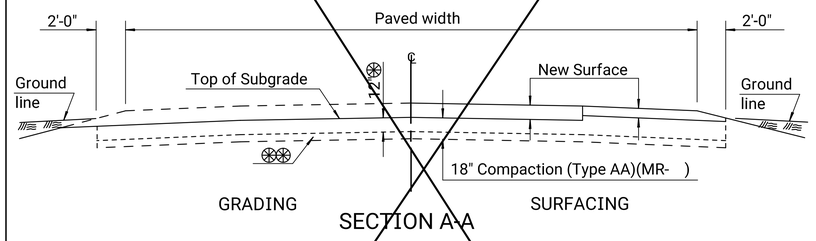
SECTION D-D

NEW CONSTRUCTION

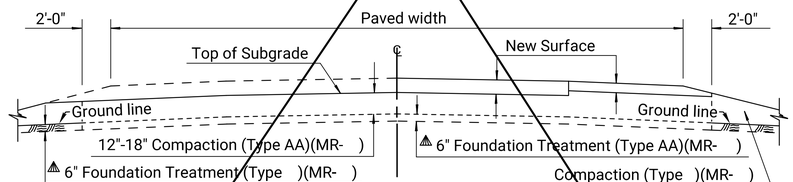


PROFILE

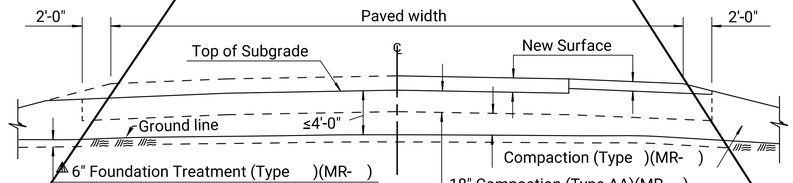
Excavation thru Cuts not Subgraded
The lower 6" of Compaction is subsidiary.
Compaction of this material shall be subsidiary.



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

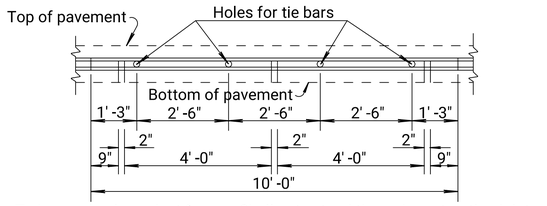
KDOT Graphics Certified 12-10-2018

Sh. No. 2

KDOT Graphics Certified

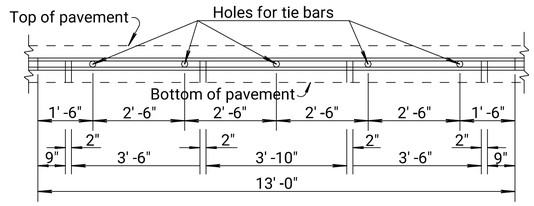
Plotted :01-31-19
Drawn By : user
File : c:\pwworking\central01\d0998048\ka493901rss605-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	3	45



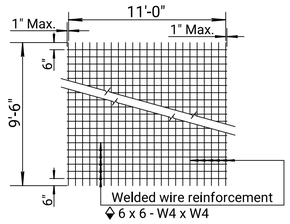
To be used only against forms. Shall not extend through contraction joints.

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



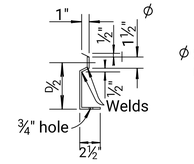
To be used only against forms. Shall not extend through contraction joints.

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.



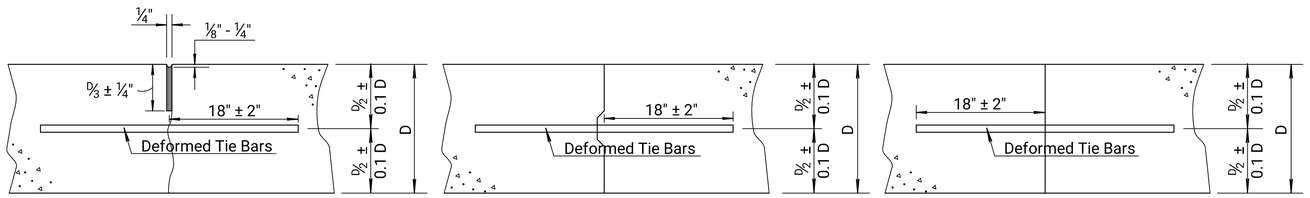
SECTION OF RECESSED
FORM LEG

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

DETAIL OF LAP FOR WELDED WIRE REINFORCEMENT

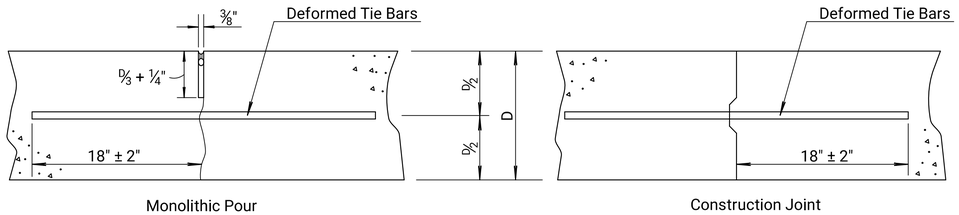
The lap shall extend beyond the first transverse or bag wire of each sheet.

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.

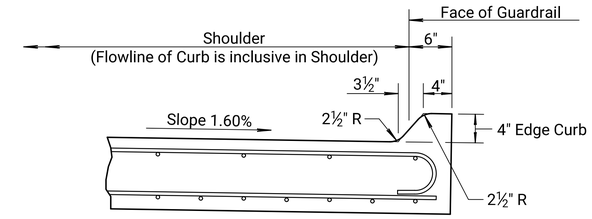
At each planned transverse joint location, a 4 to 6 inch wide strip of the pavement surface shall be protected from the texturing operation to provide a transverse textureless surface centered over the joint sawcut.

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

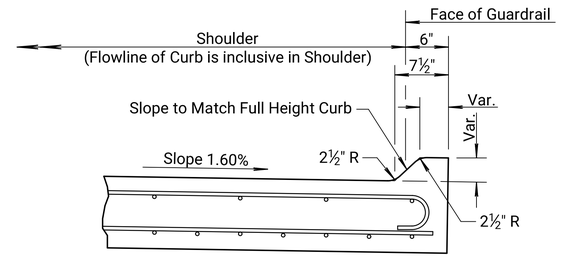
The 4 inch edge curb shall be constructed integral with the approach slab shoulder.

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.

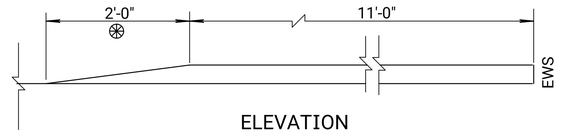


SECTION A-A

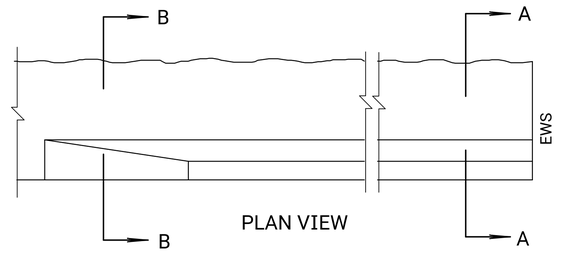


SECTION B-B

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



ELEVATION



PLAN VIEW

4" EDGE CURB DETAIL

NO.	DATE	REVISIONS	BY	APP'D
13	5-17-13	Revised Note, Longitudinal Joints	S.W.K.	J.O.B.
12	5-1 4-09	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.
10	10-3-07	Add. manufacturer jt. size recom'd.	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 Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

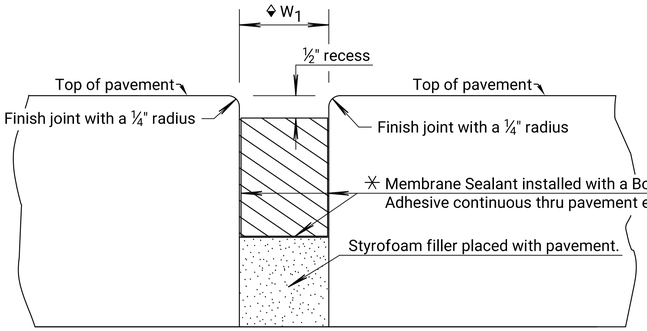
KDOT Graphics Certified 12-10-2018

Sh. No. 3

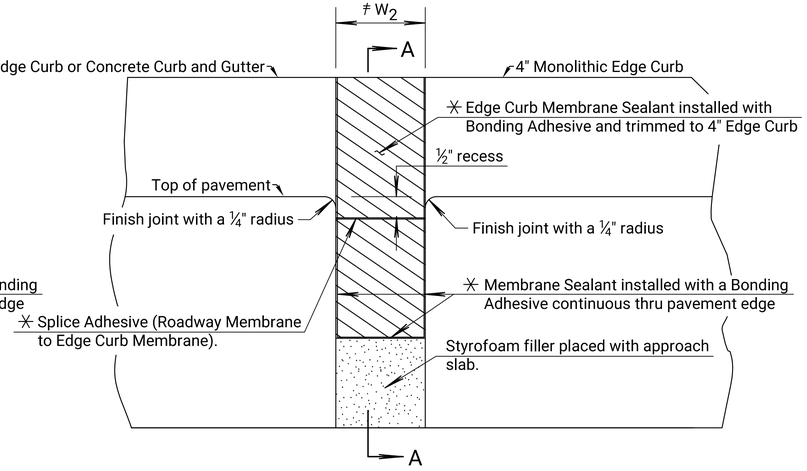
KDOT Graphics Certified

Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0998048\ka493901rss711-01.dgn

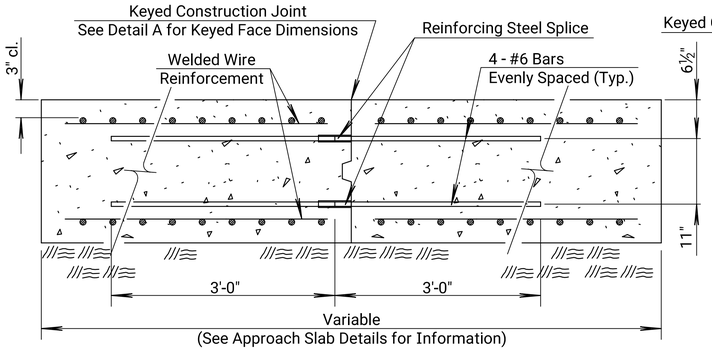
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	4	45

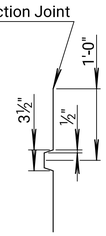


ELEVATION PRESSURE RELIEF JT.

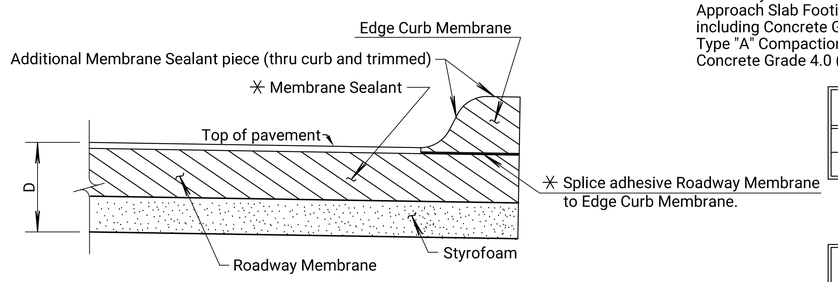


ELEVATION EXPANSION JT.





DETAIL A



SECTION A-A

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

GENERAL NOTES

EXPANSION/PRESSURE RELIEF JOINTS

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

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

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

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

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

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

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

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

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

Use splice materials and methods recommended by the Manufacturer.

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

BRIDGE APPROACH SLAB FOOTING

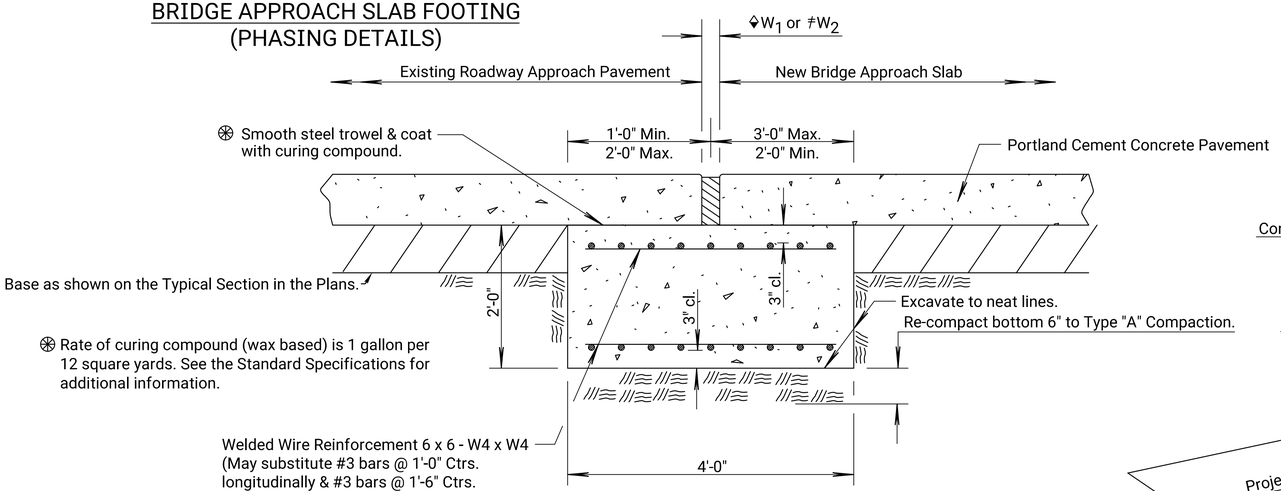
Pay for the Bridge Approach Slab Footing at the unit price bid per cubic yard for "Bridge Approach Slab Footing". This price will be full compensation for furnishing all materials and labor including Concrete Grade 4.0 (AE) Pavement, Reinforcing Steel (Gr. 60) (Epoxy Coated), excavation, Type "A" Compaction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

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

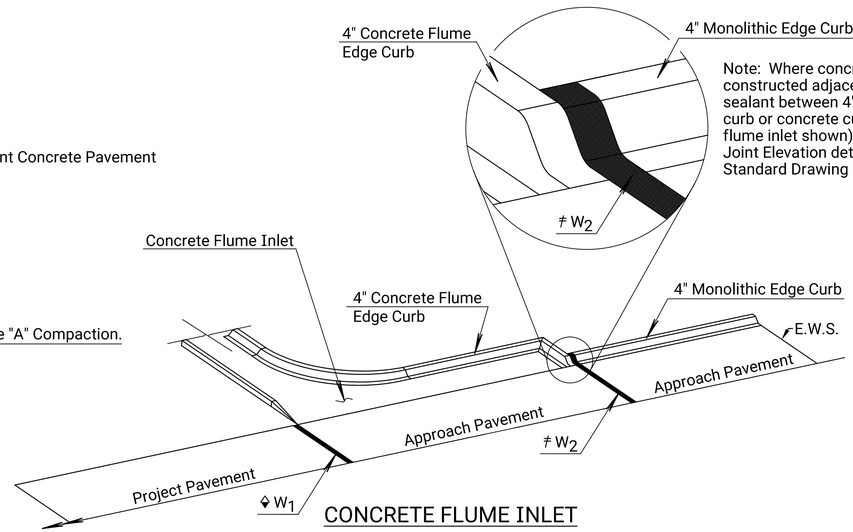
℉ Average Ambient Temperature over previous 24 hours.

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

BRIDGE APPROACH SLAB FOOTING
(PHASING DETAILS)



BRIDGE APPROACH SLAB FOOTING



CONCRETE FLUME INLET

(Membrane Sealant Placed Through Edge Curb Detail)

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

LEGEND

■ Membrane Sealant

NO.	DATE	REVISIONS	BY	APP'D
10	1-22-16	Add. Det., Keyed Joint & Flume Inlet	T.T.R.	S.W.K.
9	10-16-13	Revised General Note	S.W.K.	J.O.B.
8	4-4-13	Rev. Joint Width Det. Table	S.W.K.	J.O.B.
7	7-10-09	Adjusted Expansion joint table	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

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

~~RD712~~

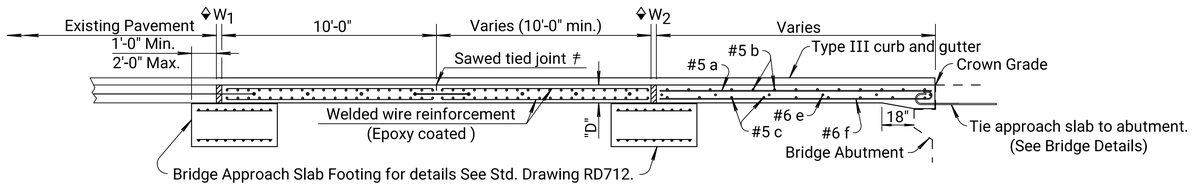
FHWA APPROVAL	2-1-16	APP'D.	Scott W. King	
DESIGNED	DETAILED	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 01-03-2019 Sh. No. 4

KDOT Graphics Certified

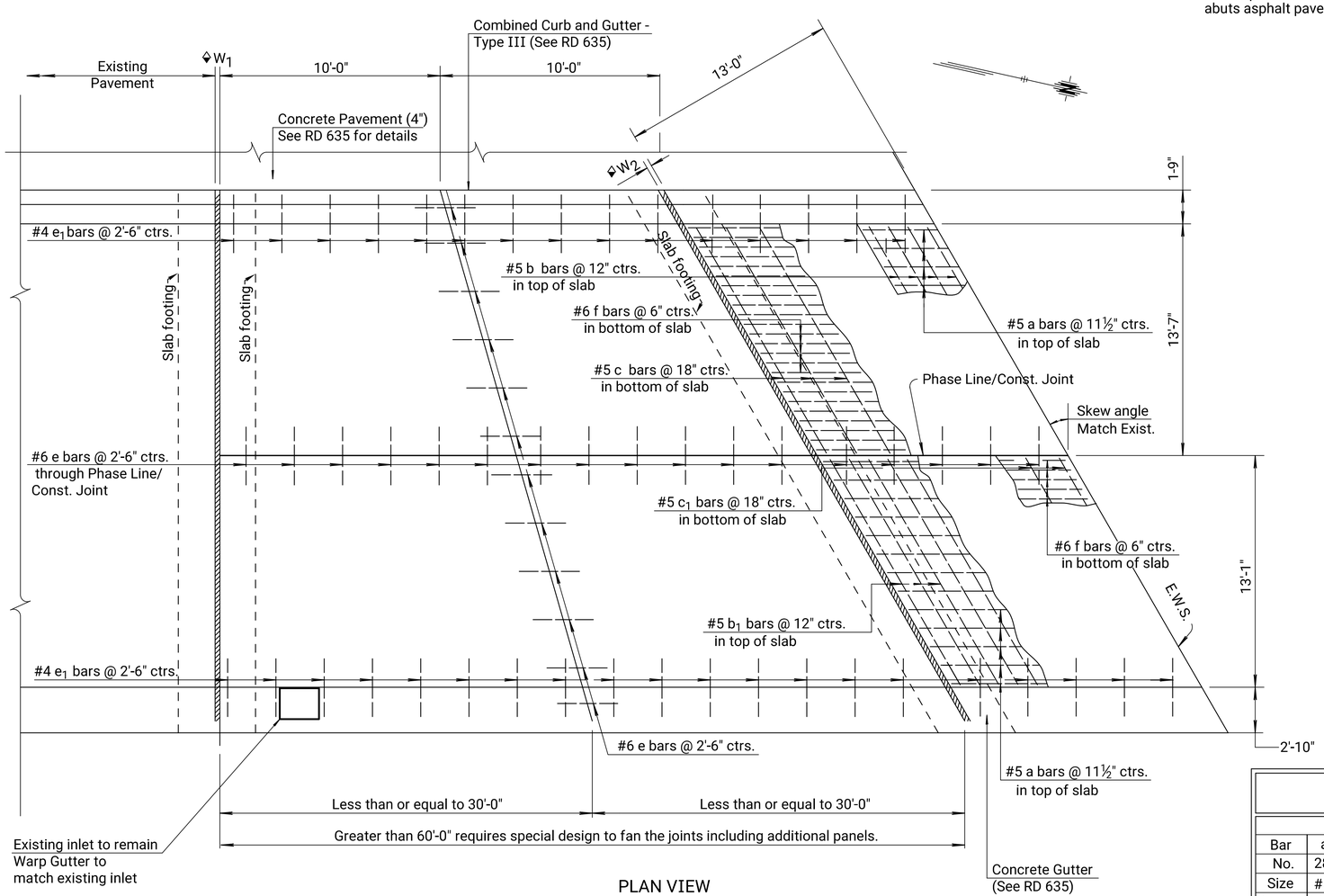
Plotted : 01-31-19
Drawn By : user
File : c:\pwworking\central01\d0998048\ka493901rss712-01.dgn

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



LONGITUDINAL SECTION

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



PLAN VIEW

(No Scale)

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

⊗ Measured along the Expansion/Pressure Relief Joint.

♦ 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.

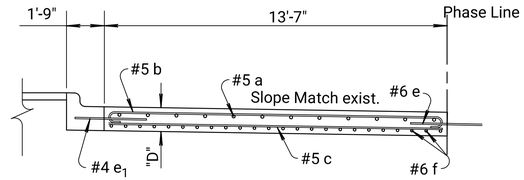
All reinforcing steel shall be epoxy coated.

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.

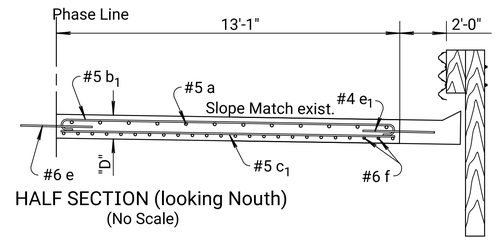
Standard reinforcing bar hooks in accordance with the latest ACI specifications shall be used throughout.

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



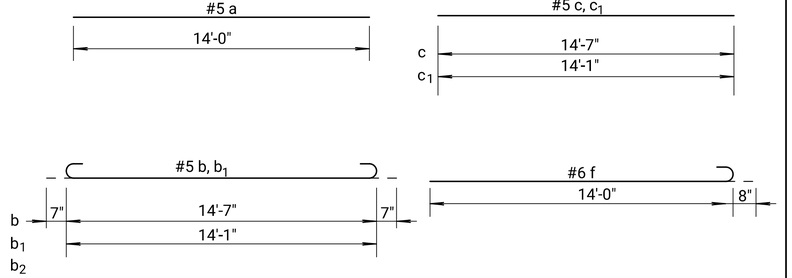
HALF SECTION (looking Nouth)

(No Scale)



HALF SECTION (looking Nouth)

(No Scale)



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

BENDING DIAGRAMS

24.5 ⁰ Skew
BILL OF MATERIALS

Bar Schedule

Bar	a	b	b_1		c	c_1		e	e_1	f	
No.	28	13	13		9	9		30	33	53	
Size	#5	#5	#5		#5	#5		#6	#4	#6	
Length	14'-0"	15'-9"	15'-3"		14'-7"	14'-1"		3'-0"	3'-0"	14'-8"	

Reinforcing Steel (Grade 60) (Epoxy Coated)	2470 lbs.
Concrete Pavement (10" Unif.)(AE)	121.8 Sq. Yds.
Expansion Jt. Membrane Sealant ⊗	35 Lin. Ft.
Pressure Relief Jt. Membrane Sealant	32 Lin. Ft.

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

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	5	45

NO.	DATE	REVISIONS	BY	APP'D
11	4-04-13	Rev. Exp./Pr. Relief Joint Dim.	S.W.K.	J.O.B.
10	9-09-09	Revised Reinforcing Steel listing	S.W.K.	J.O.B.
9	5-14-09	Revised pressure relief jt. material	S.W.K.	J.O.B.
8	10-30-08	Added guardrail post detail at curb	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE APPROACH PAVEMENT
SKEWED APPROACH (NB)

~~RD714~~ 24.5±⁰ Skew

FHWA APPROVAL	5-21-2013	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

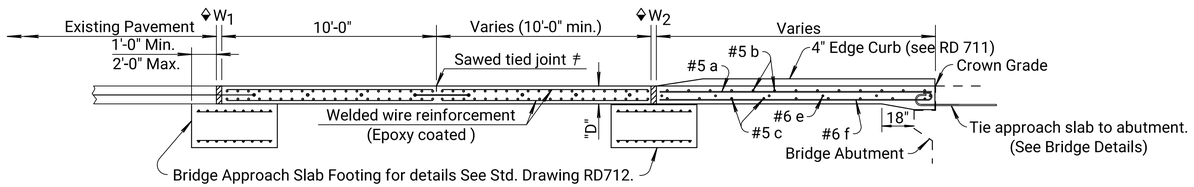
KDOT Graphics Certified 01-04-2019

Sh. No. 5

KDOT Graphics Certified

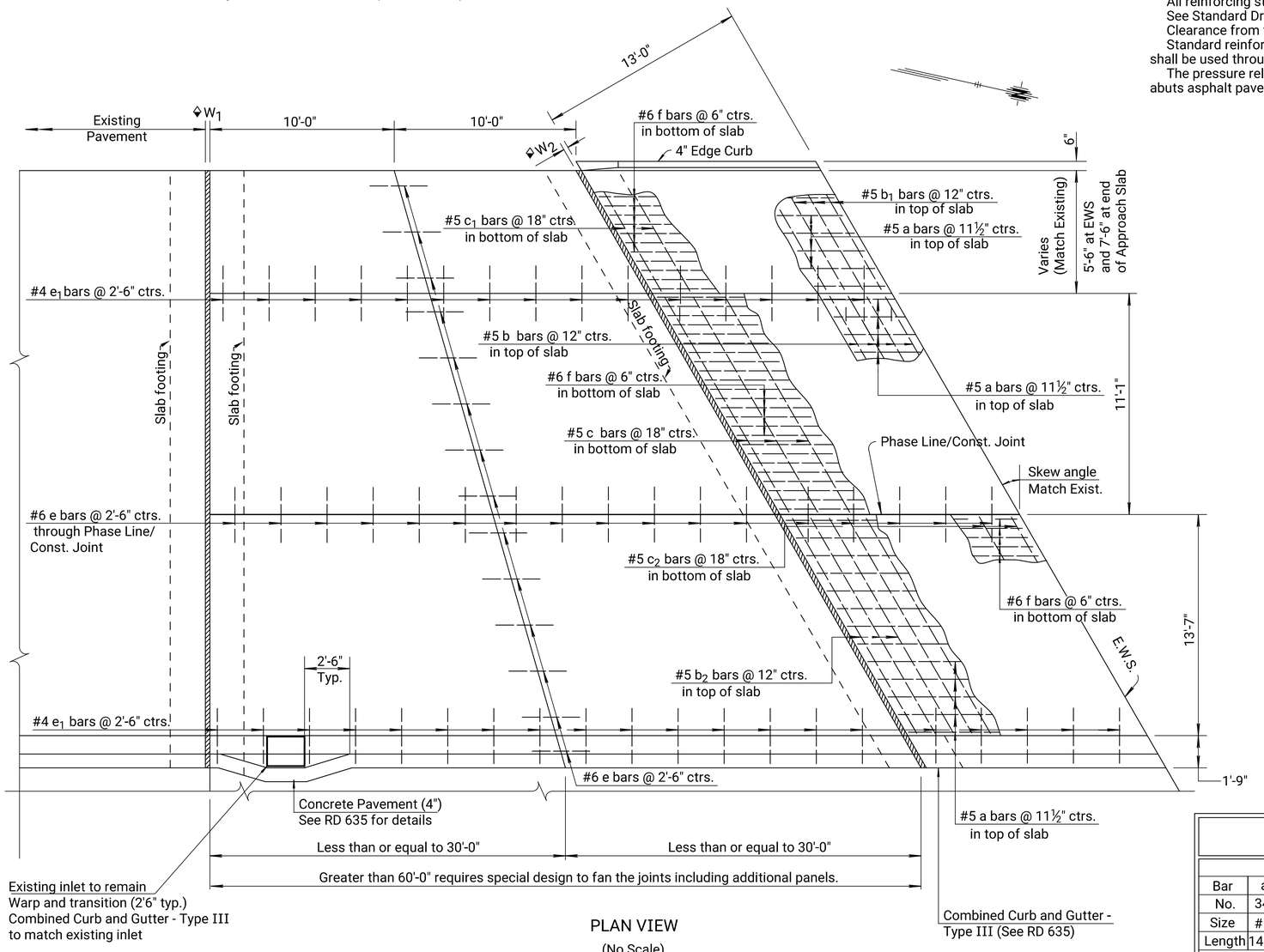
Plotted 01-31-19
Drawn By : user
File : c:\pwworking\central01\d0998048\ka493901rss714-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	6	45



LONGITUDINAL SECTION

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



PLAN VIEW

(No Scale)

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

⊗ Measured along the Expansion/Pressure Relief Joint.

◆ 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.

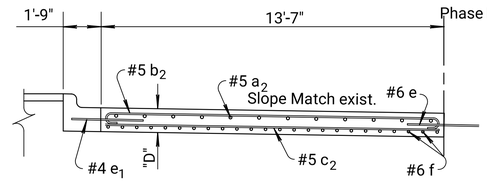
All reinforcing steel shall be epoxy coated.

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.

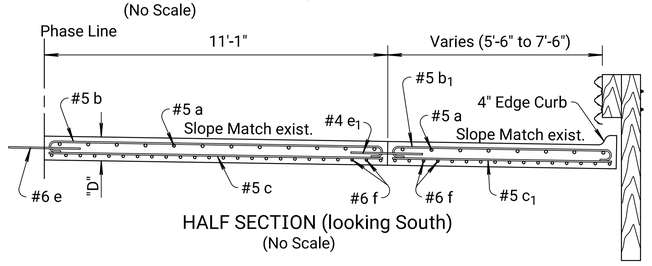
Standard reinforcing bar hooks in accordance with the latest ACI specifications shall be used throughout.

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



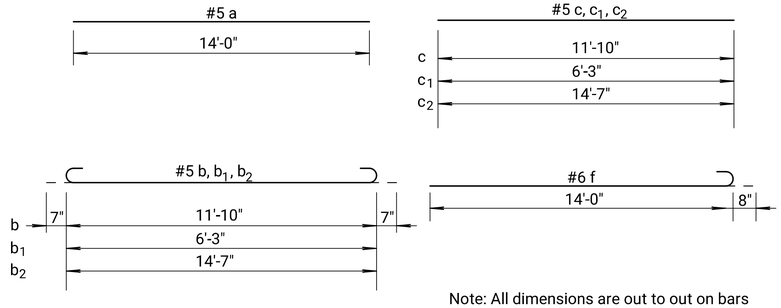
HALF SECTION (looking South)

(No Scale)



HALF SECTION (looking South)

(No Scale)



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

BENDING DIAGRAMS

24.5 ⁰ Skew
BILL OF MATERIALS

Bar Schedule

Bar	a	b	b_1	b_2	c	c_1	c_2	e	e_1	f
No.	34	13	13	13	9	9	9	30	34	61
Size	#5	#5	#5	#5	#5	#5	#5	#6	#4	#6
Length	14'-8"	13'-0"	7'-5"	15'-9"	11'-10"	6'-3"	14'-7"	3'-0"	3'-0"	14'-8"

Reinforcing Steel (Grade 60) (Epoxy Coated)	2840 lbs.
Concrete Pavement (10" Unif.)(AE)	142.5 Sq. Yds.
Expansion Jt. Membrane Sealant ⊗	36 Lin. Ft.
Pressure Relief Jt. Membrane Sealant	34 Lin. Ft.

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

NO.	DATE	REVISIONS	BY	APP'D
11	4-04-13	Rev. Exp./Pr. Relief Joint Dim.	S.W.K.	J.O.B.
10	9-09-09	Revised Reinforcing Steel listing	S.W.K.	J.O.B.
9	5-14-09	Revised pressure relief jt. material	S.W.K.	J.O.B.
8	10-30-08	Added guardrail post detail at curb	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE APPROACH PAVEMENT
SKEWED APPROACH (SB)

~~RD714~~ 24.5±⁰ Skew

FHWA APPROVAL	5-21-2013	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

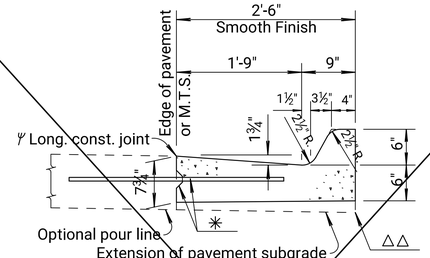
KDOT Graphics Certified 01-04-2019

Sh. No. 6

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.

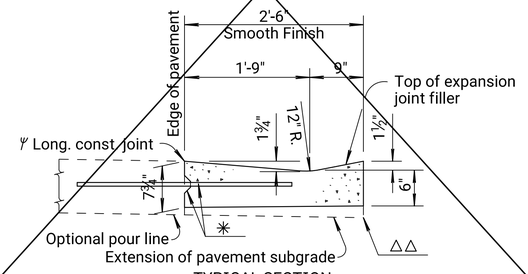
Plotted :01-31-19
Drawn By : user
File : c:\pwworking\central01\d0998048\ka493901rss714-02.dgn



TYPICAL SECTION

Note: Conc. C.&G. I contains 0.060 cu. yds. Conc. Grade 3.0 (AE) per lin.ft.

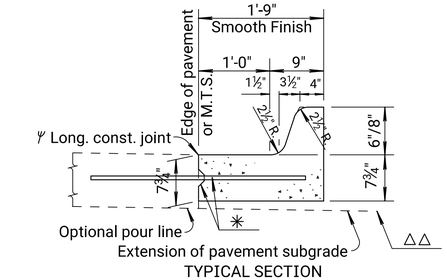
COMBINED CURB & GUTTER - TYPE I (2'-6" WIDTH)



TYPICAL SECTION

Note: Conc. C.&G. II contains 0.053 cu. yds. Conc. Grade 3.0 (AE) per lin.ft.

COMBINED CURB & GUTTER - TYPE II (2'-6" WIDTH)



TYPICAL SECTION

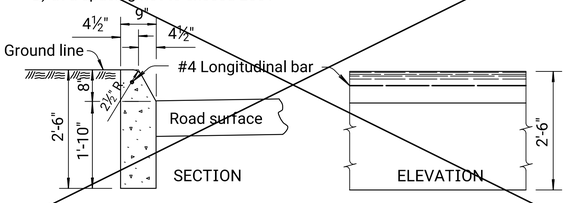
Note: Conc. C.&G. III contains 0.054 (8") & 0.051 (6") cu. yds. Conc. Grade 3.0 (AE) per lin. ft.

COMBINED CURB & GUTTER - TYPE III (1'-9" WIDTH)

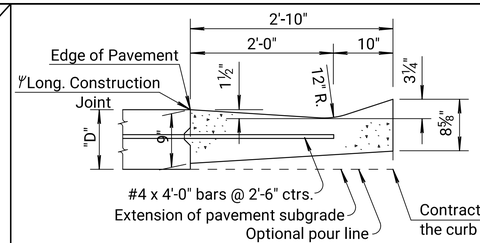
✳ Longitudinal construction joint and #4 x 3'-0" bars @ 2'-6" ctrs., where concrete pavement is constructed.

△△ Contractor has the option of thickening the curb and gutter as shown.

Note: Use Concrete Grade 3.0 (AE) throughout.
All exposed edges shall be finished with an edging tool.
Place a 1" Preformed Expansion Joint Filler (Nonextruding, Type B) at a spacing not to exceed 250'.

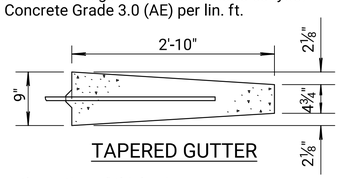


PROTECTION CURB 8"

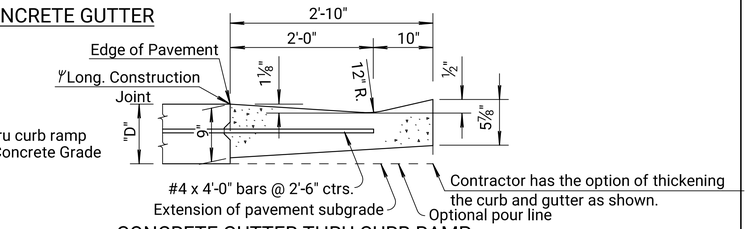


CONCRETE GUTTER

Note: Concrete gutter contains 0.065 cu. yds. Concrete Grade 3.0 (AE) per lin. ft.

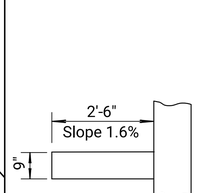


TAPERED GUTTER

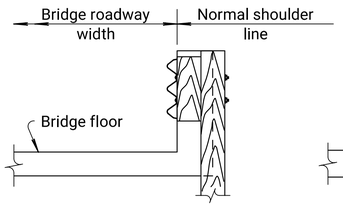


Note: Concrete gutter thru curb ramp contains 0.065 cu. yds. Concrete Grade 3.0 (AE) per lin. ft..

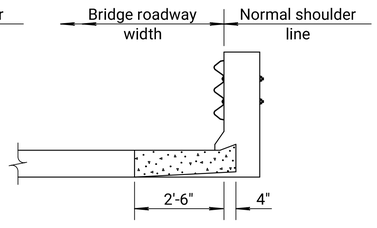
CONCRETE GUTTER THRU CURB RAMP



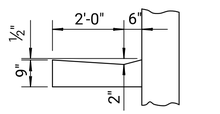
SECTION B-B



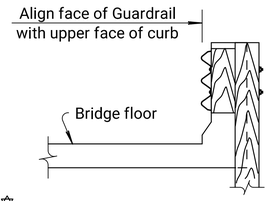
CONTROL POINT FOR FULL WIDTH ROADWAY BRIDGE



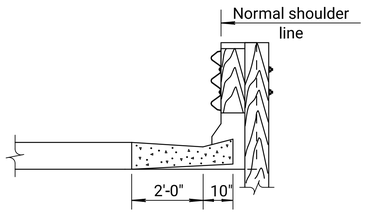
GUTTER NEAR E.W.S.



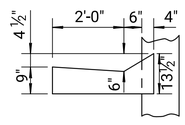
SECTION C-C



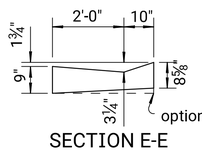
✡ CONTROL POINT FOR BRIDGE WITH SAFETY TYPE CURB



FULL GUTTER SECTION

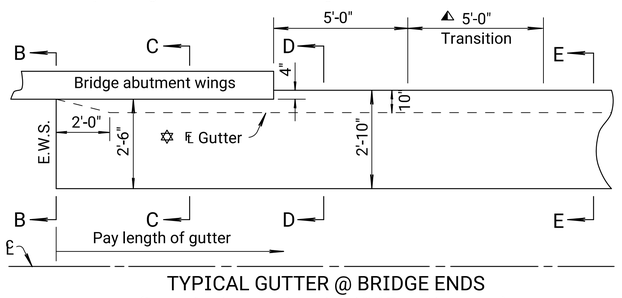


SECTION D-D



SECTION E-E

At locations where the centerline grade is relatively flat and the pavement grade is such that the gutter will direct drainage onto the bridge, the flowline depth may be reduced as directed by the Engineer to facilitate drainage.



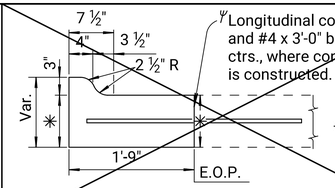
TYPICAL GUTTER @ BRIDGE ENDS

(Drawn for down grade end and "U" Type Abutments)

Note: Shaping of gutter is to be Subsidiary to "Gutter (AE)".

◭ Transition gutter to standard 2'-10" gutter section.

FOR RETROFIT OF BRIDGE APPROACHES WITH GUTTER



✳ Note: Thickness to match adjacent pavement.

COMBINED CURB AND GUTTER (SPECIAL) (1'-9" WIDTH)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	7	45

GENERAL NOTE

Combined curb and gutter or gutter adjoining concrete pavement may, at the contractor's option, be constructed either monolithically or separately, using either the mix used in the concrete pavement or Concrete Grade 3.0 (AE). The combined curb and gutter or gutter shall have the same section as shown on the plans. If constructed monolithically, the longitudinal joint and tie bars shall be omitted from the combined curb and gutter or gutter. Pavement Joints shall be continued through curb or gutter and no other planes of weakness will be required. Joints in the combined curb and gutter or gutter are to be filled with the same material as used for the pavement joints.

Expansion joints in the combined curb and gutter are to be placed opposite expansion joints in the pavement.

Where combined curb and gutter or gutter does not abut concrete pavement or concrete base course, omit tie bars and place a 1" Preformed Expansion Joint Filler (Type B) cut to the dimensions of the combined curb and gutter or gutter, at a spacing not to exceed 250' and at the ends of curb returns. Planes of weakness shall be constructed at 10'-0" intervals.

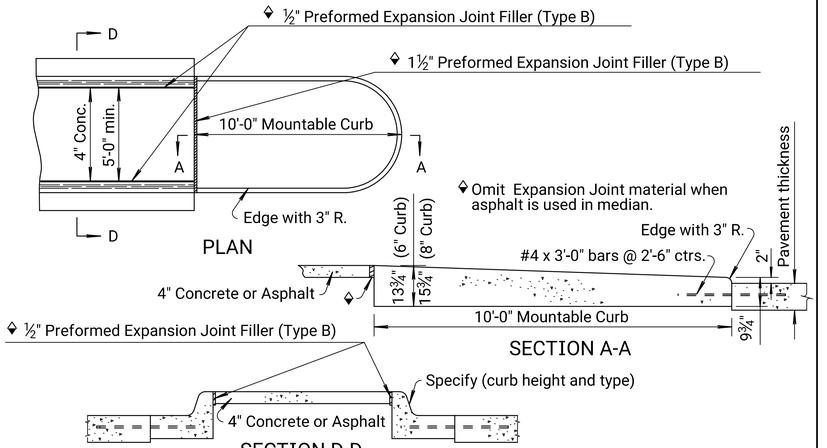
A 4' length of transition from normal gutter section to the tapered gutter section shall be used at the ends of each run of gutter except where the gutter abuts a curb, such as at the end of a bridge. Inlets shall be located so as not to fall within this transition section.

Where pressure relief joint is placed across the pavement, and gutter or curb and gutter is continued on for more than 10', use 4"x4" membrane sealant installed with bonding adhesive through gutter section, shaped to fit gutter or curb and gutter. See Std. Drawing RD712.

For expansion joint treatment where combined curb and gutter or gutter abuts a bridge wing on a U-type abutment see bridge drawings.

Longitudinal joints shall be sawed and sealed with joint sealant, see Standard Specifications.

℄ If constructed monolithically, the longitudinal joint is not required.



Note: Expansion joints shall be placed in concrete median as follows. In long runs expansion joints Expansion joints in the median shall match expansion joints in the curb and gutter with a maximum spacing of 125'. Plane of weakness in the median shall match plane of weakness in curb and gutter.

TYPICAL NOSE DETAILS FOR RAISED MEDIANS

Note: Additional Concrete Grade 3.0 (AE) needed to complete median nose shall be subsidiary to the bid item "Combined Curb & Gutter".

NO.	DATE	REVISIONS	BY	APP'D
20	2-23-17	Det., Conc. Gutter Thru Curb Ramp	T.T.R.	S.W.K.
19	1-29-13	Added Detail, Comb. C&G (Sp.)	S.W.K.	J.O.B.
18	8-13-12	Revised General Note	S.W.K.	J.O.B.
17	7-2-09	Rev. nose details, jt. sealant & retro.	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CURB, GUTTER AND COMBINED CURB & GUTTER

RD635

FHWA APPROVAL	3-7-17	APP'D.	SCOTT W. KING
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 12-10-2018

Sh. No. 7

KDOT Graphics Certified

Plotted :01-31-19
Drawn By : user
File : c:\pwworking\central01\d0998048\ka4939901rss635.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	8	45

BRIDGE SUMMARY OF QUANTITIES

Item / Location	Class III Excavation Cu. Yds.	Concrete (Grade 4.0) (AE)(SA) Cu. Yds.	Reinf. Steel (Grade 60) (Epoxy Coated) Lbs.	Reinforcing Steel (Repair) (Grade 60) (Set Price) Lbs.	Reinforcing Steel (Repair) (Grade 60) (Epoxy) (Set Price) Lbs.	Expansion Joint (Strip Seal Assembly) Ln. Ft.	Bridge Painting (Organic Zinc w/Acrylic System) Lump Sum	Environmental Protection Lump Sum	Slope Protection (Aggregate) Cu. Yds.	Removal of Existing Structure Lump Sum	Expansion Joint (Membrane Sealant) Ln. Ft.	Drilling & Grouting Each	Concrete Surface Repair Sq. Ft.	Substructure Waterproofing Membrane Sq. Yds.	Abutment Strip Drain Sq. Yds.	Bridge Backwall Protection System Sq. Yds.	Bearing (Steel) Each	Reset Existing Bearing Each	Temporary Shoring Lump Sum
Abutment No. 1	178	7.4	505			75			5			66	76	21	74	102	8		
Abutment No. 2		7.4	245			75					63			21				8	
Pier No. 2		8.4									75		200	37					
Substr. Total	178		750	1					5			66	276	79	74	102	8	8	
Superstr. Total		23.2	2280		1	150	Lump Sum	Lump Sum		Lump Sum	138								Lump Sum
Total	178	23.2	3030	1	1	150	Lump Sum	Lump Sum	5	Lump Sum	138	66	276	79	74	102	8	8	Lump Sum

CONCRETE PAVEMENT

BRIDGE NO.	LOCATION	WIDTH FT.	AREA SQ. YD.	BRIDGE APPROACH SLAB FOOTING CU. YD.	CONCRETE PAVEMENT (10" UNIFORM) (AE) (BR APP) SQ. YD.	AGGREGATE BASE (AB-3)(8") SQ. YD.
130	SB Abutment No. 1	31.2	152.0	20.6	142.5	152.0
	NB Abutment No. 1	26.7	143.8	19.4	121.8	143.8
TOTAL				40.0	264.3	295.8

SUMMARY OF BARRIER (TEMPORARY)

ITEM	LIN. FT.	EACH
Concrete Safety Barrier (Type F3) (Temporary)	1374	
Concrete Safety Barrier (Type F3) (Temporary - Relocate)	1374	
Inertial Barrier System (TL-2)		2

INDEX OF BRIDGE DRAWINGS

RECAPITULATION OF ROAD QUANTITIES

ITEM	QUANTITY	UNIT
Mobilization	LS	Lump Sum
Mobilization (DBE)	LS	Lump Sum
**Common Excavation	66	Cu. Yd.
*Rock Excavation	83	Cu. Yd.
Curb & Gutter Combine (AE)	83.1	Lin. Ft.
Gutter (AE)	48.5	Lin. Ft.
Concrete Pavement (4" Uniform) (AE) (Plain)	11.8	Sq. Yd.
Concrete Pavement (10" Uniform) (AE) (BR APP)	265	Sq. Yd.
Bridge Approach Slab Footing	40.0	Cu. Yd.
Aggregate Base (AB-3)(8")	296	Sq. Yd.
Water (Aggregate Base) (Set Price)	1	MGAL
Granular Backfill (12")	11.8	Sq. Yd.
Water (Granular Base) (Set Price)	1	MGAL
Concrete Safety Barrier (Type F3) (Temporary)	1374	Lin. Ft.
Concrete Safety Barrier (Type F3) (Temporary - Relocate)	1374	Lin. Ft.
Inertial Barrier System (TL-2)	2	Each
Replacement Modules (IBS)	15	Each

See Sheet 41 for Traffic Control Quantities.
See Sheet 25 for Pavement Marking Quantities.

*Removal of Existing Approach Slab & Gutters
**Removal of Existing Base

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No.69-105-0.93 (130)
SUMMARY OF QUANTITIES
US-69 OVER MERRIAM LANE
AND TURKEY CREEK
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

KDOT Graphics Certified 01-16-2019

Sheet No. 8

KDOT Graphics Certified

Plotted By: user
File: c:\pwworking\central01\d0926726\ka4939001\brp0130-01.dgn
Plot Date: 01-31-19
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	9	45

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.

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

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

BROKEN CONCRETE: The broken concrete from the existing bridge shall be wasted on sites provided by the Contractor and approved by the Engineer. Protruding reinforcing in the broken concrete shall be cut off and removed. This work shall be paid for directly but shall be subsidiary to other bid items of the contract.

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

REINFORCING STEEL: All reinforcing steel dimensions are to centerline of bars unless otherwise noted. All reinforcing steel shall conform to the requirements of ASTM A615, Grade 60. Where non-coated bars come in contact with epoxy coated bars, they need not be coated.

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

SLOPE PROTECTION (Aggregate): Place Slope Protection (Aggregate) to the limits and thicknesses shown on the plans or as directed by the Engineer. Use (Stone for Aggregate Ditch Lining with D50 of 4" or 6") as described in Division 1100 placed to the limits shown on the plans.

EXISTING BRIDGE PAINTING: Paint structural steel and bridge bearings as noted on plans in the existing structure in conformance with the KDOT Specifications.
The structural steel has a paint history of:
1) Original paint system unknown Date:
2) Repaint system Inorganic Zinc Date:
3) TCLP value is TBD Report Date: 1990 (Partial Reprint)
4) The weight of existing bridge steel to be painted is 7,230 pounds.
The paint system shall conform to an organic zinc primer with a waterborne acrylic finish coat (the finish coat will be Kansas (Green), this color will match Federal Standard #(20497).

ABUTMENT STRIP DRAIN: See the General Notes on the "Abutment No. 1 Strip Drain" sheet.

BRIDGE BACKWALL PROTECTION SYSTEM: See the General Notes on the "Abutment No. 1 Strip Drain" sheet.

MECHANICAL COUPLERS: All mechanical couplers and their adjoining bars shall be epoxy coated. The mechanical coupler threads shall be protected at all times. The mechanical couplers shall be approved screw type coupler and can be Dayton Superior DB-SAE Splicers or approved equals. All costs associated with the mechanical couplers shall not be paid for directly, but shall be subsidiary to "Reinforcing Steel (Grade 60) (Epoxy Coated)".

GENERAL NOTES

STRIP SEAL: The strip seal extrusions in the bridge deck shall be a "Wabo Type R" steel shape or an approved equivalent. Material for the extrusions shall be solid extruded or hot rolled steel. No weathering steel or aluminum will be allowed. Grips shall only be prime-coated with an inorganic zinc vinyl. The gland cavity shall not be prime-coated. The Strip Seal gland shall accommodate a total movement of at least 4". The gland shall be factory molded for horizontal bends of 15° or more.

REPAIR OF EPOXY COATED REINFORCING STEEL: Replace any epoxy coating that is removed from the reinforcing steel during the concrete removal process. Thoroughly clean damaged areas with a stiff wire brush to remove dirt and damaged coating. Apply an approved patching material in accordance with manufacturer's recommendations. Avoid dripping any patching material onto existing concrete that will have new concrete placed against it. See KDOT Specifications.

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

SUBSTRUCTURE WATERPROOFING MEMBRANE: Apply a Substructure Waterproofing Membrane, in accordance with KDOT Specifications, to the abutment bridge seats and pier bridge seats at expansion joints. Apply the membrane within the limits shown on the plans to drain the bridge seat and the areas around the bearings. Repair any damage done to the membrane while the bridge is under construction. All work shall be as directed and approved by the Engineer.

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

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

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.

ANCHOR BOLTS: Anchor bolts will adhere to KDOT Standard Specification Division 1600 (Grade 36) with the following exception. The threads may be rolled or cut.

PAINTING BEARINGS: Blast clean the bearings, in the shop, except for the ANSI 125 finished surfaces. Paint the bridge bearings with an Inorganic Zinc Primer except for the ANSI 125 finished surfaces. Paint the ANSI 125 finished surfaces with an approved dry film lubricant. After erection, apply the water-borne acrylic finish coat to all exposed surfaces.

REMOVAL OF EXISTING STRUCTURE: Removal of existing structure is included in the bid item, "Removal of Existing Structures", Lump Sum. This includes the removal of designated portions of the slab, abutment backwall, bridge rail, and any other portions designated for removal in the details. This item also includes removal of debris from the abutment bearing seats.

Clearly mark the location of the existing girder top flange son top of the existing deck concrete within the removal limits before sawing or removing any concrete. Concrete sawing shall be limited to a maximum depth of 3 inches directly above any girder and within 3 inches of either edge of a girder top flange. Do not use drop-type pavement breakers. Do not use a hoe ram directly above any girder or within 1'-0" of either edge of a girder top flange. Use a jackhammer no heavier than 15 lbs. to remove concrete above and within 1'-0" of either side of a girder top flange.

Damage to the existing structural steel caused by procedures not conforming to the above recommendations shall be repaired as directed by the Engineer at the Contractor's expense (no cost to the State). Any costs incurred in the Contractor's expense for repair.

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

ENVIRONMENTAL PROTECTION: Use protection as shown in the KDOT Specifications. The Enviromental Protection Structure Classification is Class A.

REINFORCING IN BRIDGE DECK: Care should be exercised to prevent cutting, stretching or damaging exposed reinforcing steel. Extreme care should be exercised to avoid breaking the bond between the reinforcing steel and concrete where bars are partially exposed yet remain anchored in sound concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer. Do not wedge chipping hammer bit against reinforcement. See table for replacement bar size and minimum splice length required. Replacement of bars damaged by the Contractor shall be subsidiary to "Concrete (Grade 40) (AE) (SA)".

LEAD CONTENT TEST: This structure requires a lead content test (TCLP).

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

BEARING (STEEL): The bid item "Bearing (Steel)" shall include all labor and materials necessary to temporarily support the girder, remove the existing bearing device, level the bearing surface, set the new bearing device, drill and grout swedge anchor bolts, and weld on new bearing plate tabs. Only air carbon arc cutting will be allowed to remove existing welds. Care shall be taken to not damage existing structure during weld removal. Bearing devices are to be painted after resetting.

RESET BEARING DEVICES: The bid item "Reset Existing Bearing" shall include all labor and materials necessary to temporarily support the girder, remove the existing bearing pin, reset the bearing pin and reweld it to the existing girder and touch up damaged areas of paint.
Only air carbon arc cutting will be allowed to remove existing welds. Care shall be taken not to damage the existing bearing pins and girders during removal. Bearing devices are to be repainted after resetting.

This item also includes all labor and materials necessary to remove the existing bearing base plate, level the bearing surface, set the new bearing base plate, drill and grout swedge anchor bolts, and weld on new bearing plate tabs.

DESIGN DATA

DESIGN SPECIFICATIONS:
AASHTO Specifications, 2002 Edition.
and latest Interim Specifications. Load Factor Design.

UNIT STRESSES:

Concrete (Grade 4.0) (AE)(SA)	f'c = 4 ksi
Reinforcing Steel (Grade 60) (Epoxy Coated)	fy = 60 ksi
Structural Steel (ASTM A709 Gr. 36)	Fy = 36 ksi

◪ MINIMUM REBAR SPLICE LENGTHS

Existing Bar Size	Minimum Splice Lengths (inches)	
	Existing Gr. 40 ksi Bars	Existing Gr. 60 ksi Bars
#4	12"	16"
#5	13"	20"
#6	16"	24"
#7	20"	30"
#8	26"	39"
#9	33"	49"
#10	42"	62"
#11	51"	77"

Note: If splicing epoxy coated reinforcing steel, increase the above splice lengths by 20%.

◪ Lap lengths are based on a Class B splice. Use the minimum splice length corresponding to the grade of the existing reinforcing in the deck.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 69-105-0.93 (130)
BRIDGE GENERAL NOTES
US-69 OVER MERRIAM LANE
AND TURKEY CREEK
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

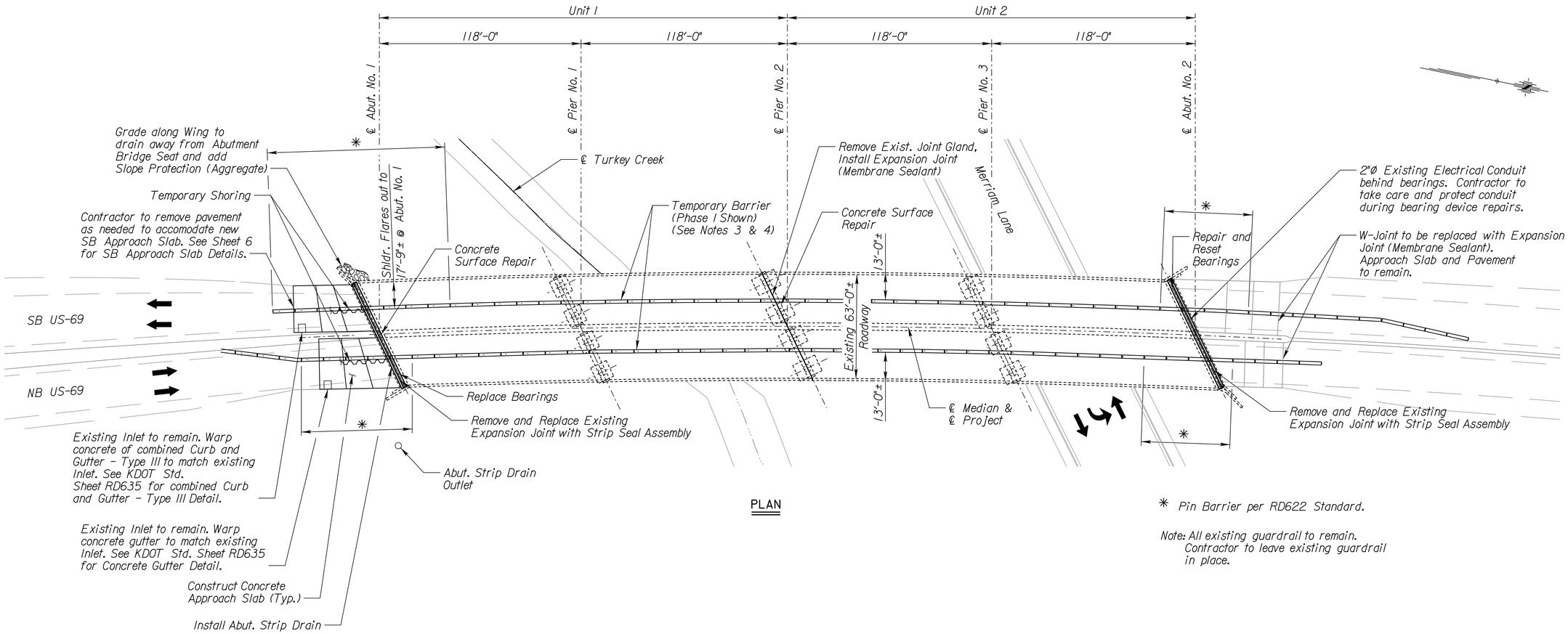
SHEET NO.	OF	SCALE		APP'D			
DESIGNED	ECS	DETAILED	JAH	QUANTITIES	ECS	CADD	JAH
DESIGN CK.	CDH	DETAIL CK.	ECS	QUAN. CK.	CDH	CADD CK.	ECS

KDOT Graphics Certified 01-10-2019

KDOT Graphics Certified

Plot Location: c:\pwworking\central01\d0926726\kx49390\brp01_30-02.dgn
Plotted By: user
Plot Date: 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	10	45



PLAN

SCALE
PLAN: Lat. & Long. 30' 0 30' 60'

APPROACH SLAB THERMAL MOVEMENT: Type W2 Expansion Joint only: (See "Expansion Joint Details", Std. No. RD712).

See table for adjusted "W" values. "W" is the formed gap. The temperatures in the table are the average ambient temperature over the last 24 hours. (See "Concrete Bridge Approach Pavement," Std. No.RD712).

THERMAL MOVEMENT OF APPROACH SLAB							
Temp., (F°)	30°	40°	50°	60°	70°	80°	90°
"W", (in.) Δ	3 1/2	3 3/8	3 1/4	3 1/8	3	2 7/8	2 3/4

CURVE DATA
Δ = 43°36'30"
D = 1°00'00"
R = 5729.58'
T = 2292.15'
L = 4360.83'

Notes:
1. Dimensions of the existing structure are based on existing plans. The Contractor shall verify, by field measurement, the as-built dimensions of the existing structure.
2. 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 the soil is less, flatter slopes shall be required.
3. See Traffic Control Plans for Phase I & 2 information.
4. See Traffic Control Plans for limits of temporary barrier and IBS systems.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No.69-105-0.93 (130)
CONSTRUCTION LAYOUT
US-69 OVER MERRIAM LANE AND TURKEY CREEK
Proj. No.69-105 KA-4939-01 Wyandotte Co.

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

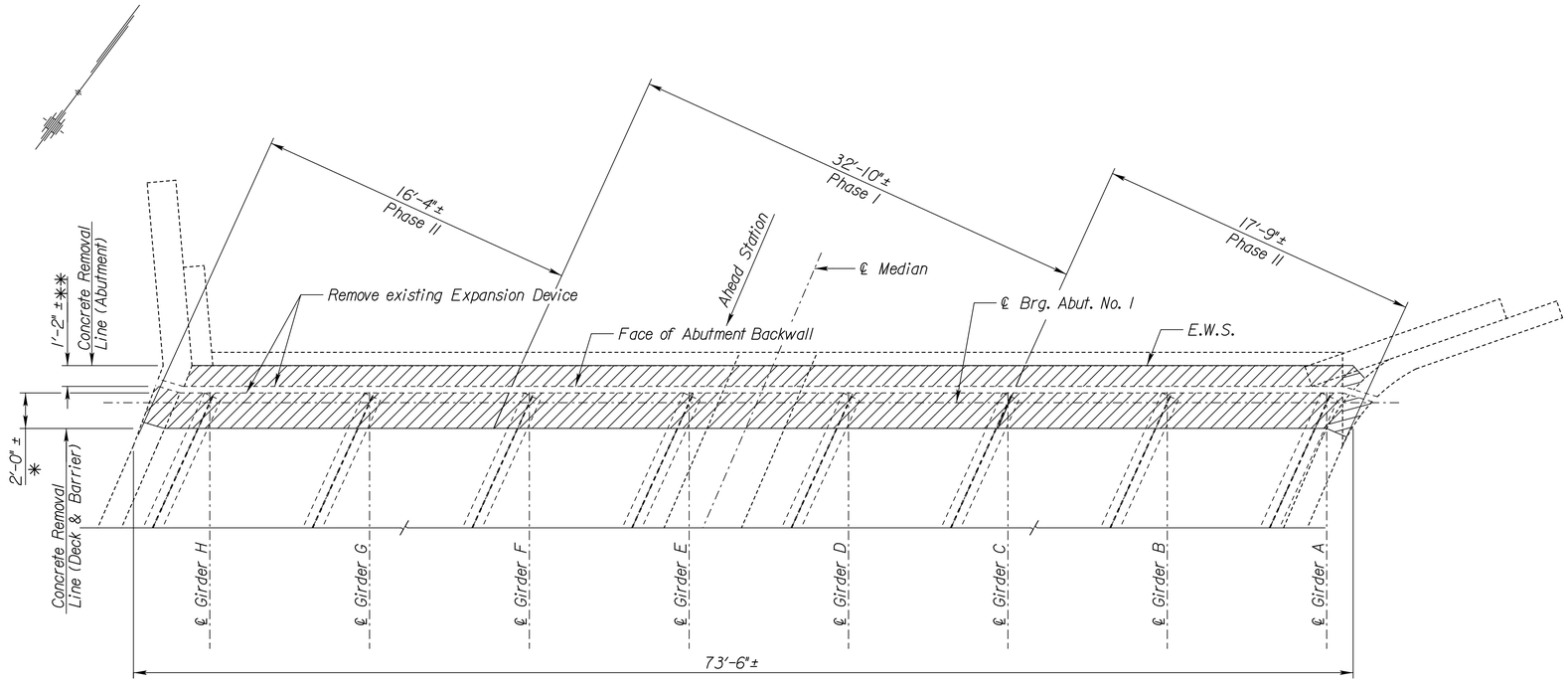
KDOT Graphics Certified 02-01-2019

Sheet No. 10

KDOT Graphics Certified

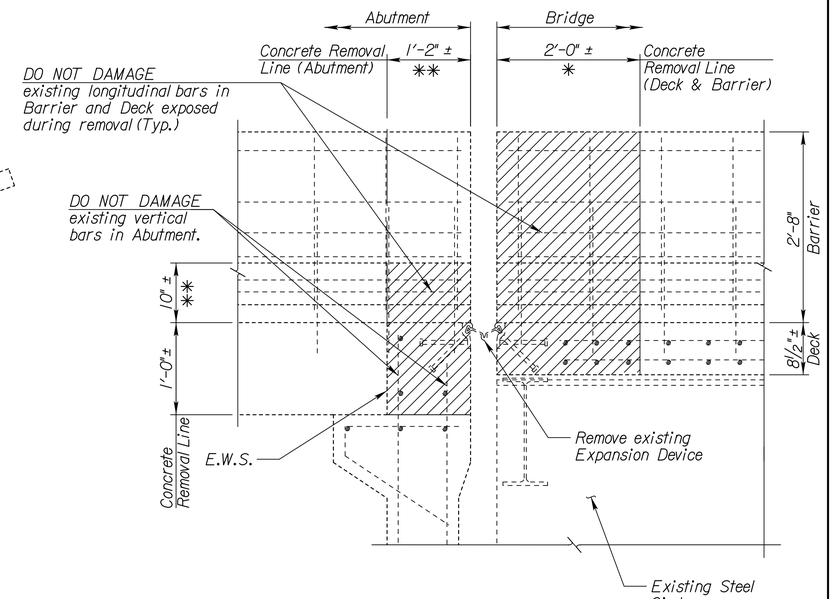
Plotted By: user
Plot Location:
File: c:\pwworking\central01\d0926726\kd4939001\brp01_30-03.dgn
Plot Date: 02-01-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	11	45



EXISTING ABUTMENT PLAN

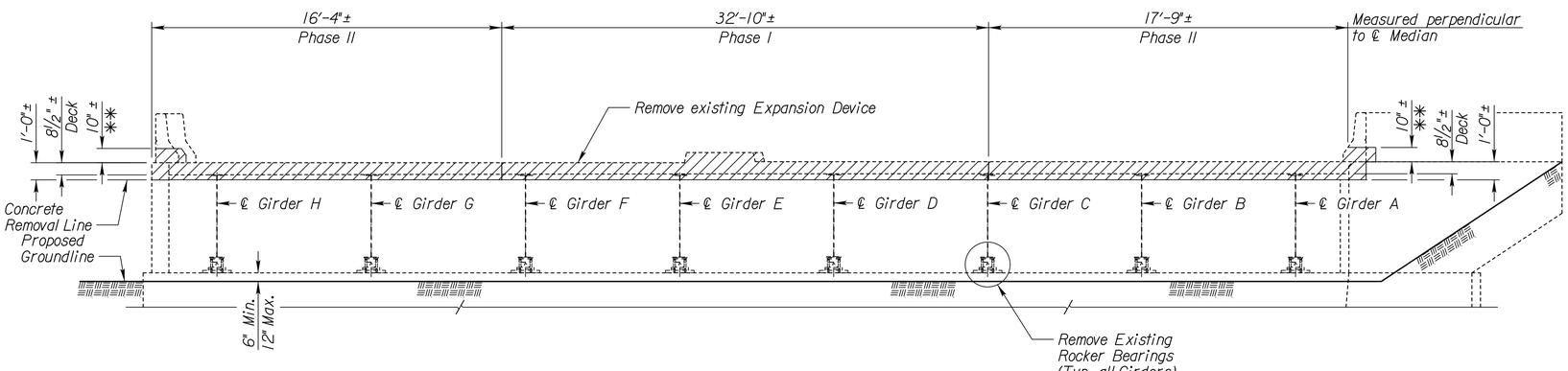
(Abut. No. 1)



EXISTING SECTION

* Match Concrete Removal Line w/existing cold joint in Deck.

** Remove concrete thru Rail as required to remove existing Expansion Joint and allow clearance for installation of new Strip Seal Assembly.



EXISTING ABUTMENT ELEVATION

(Abut. No. 1)

Indicates material to be removed

Note: Clean all exposed reinforcing being salvaged prior to placing new concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No.69-105-0.93 (130)

ABUTMENT NO. 1 CONCRETE REMOVAL DETAILS

US-69 OVER MERRIAM LANE AND TURKEY CREEK

Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

KDOT Graphics Certified 01-04-2019

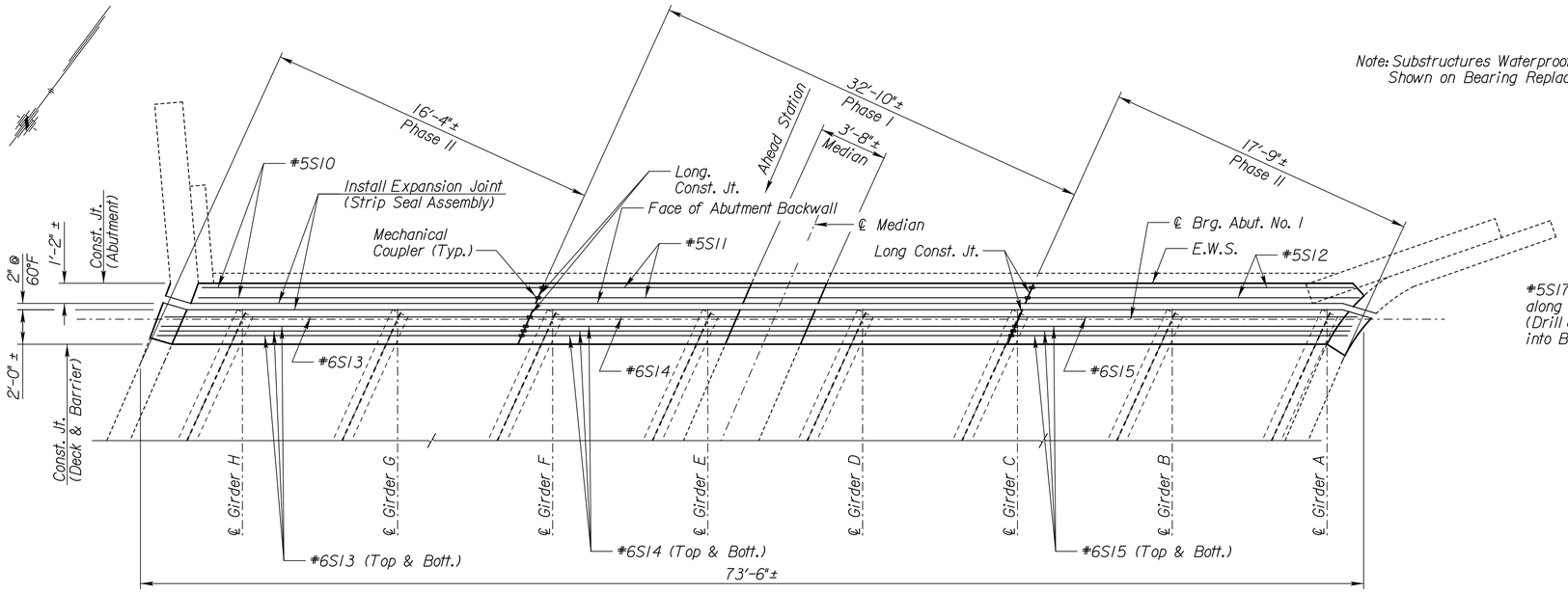
Sheet No. 11

KDOT Graphics Certified

Plotted By: user
Plot Location:
File: c:\pwworking\central01\d0926726\ka49390\brp0130-04.dgn
Plot Date: 01-31-19

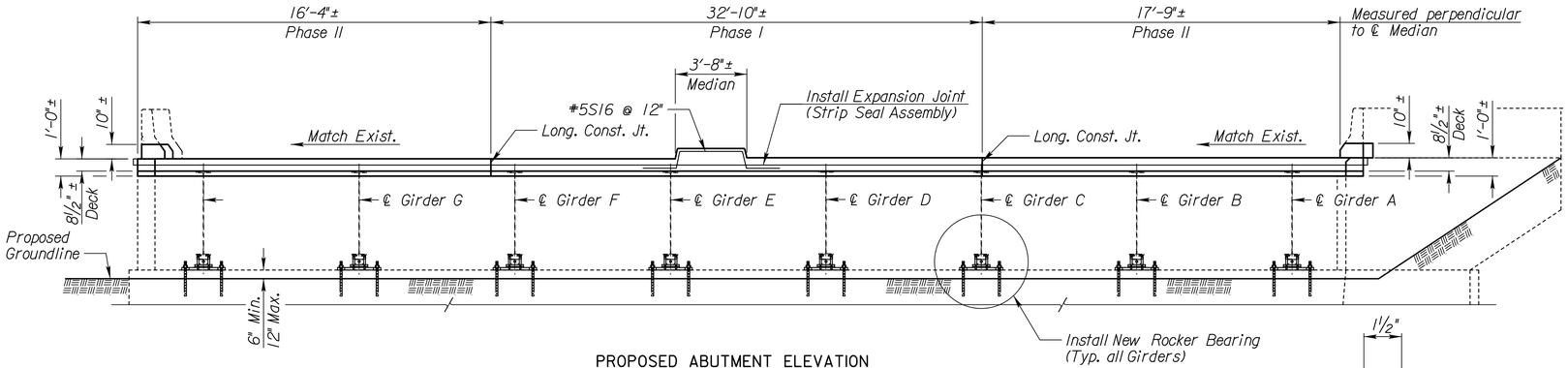
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	12	45

Note: Substructures Waterproofing Membrane Limits Shown on Bearing Replacement Details Sheet.



PROPOSED ABUTMENT PLAN

(Abut. No. 1)
(S1 & S17 not shown for clarity)

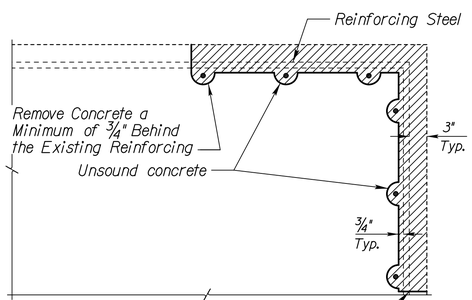


PROPOSED ABUTMENT ELEVATION

(Abut. No. 1)
(Only Reinforcing in Median shown.)

ABUTMENT REPAIR:
This item shall consist of removing all loose, cracked and delaminated concrete from the top and exposed sides of the Abutment Beam as directed by the Engineer. These areas shall be repaired with Master Builders shot patch 21F shotcrete or an approved equivalent. Prior to placement of shotcrete, areas to be repaired shall be sandblasted, and any deteriorated reinforcing steel shall be repaired or replaced. Shotcrete shall be placed to match existing surfaces or to provide a minimum of 3" clear to reinforcing bar. The item "Concrete Surface Repair" shall be paid for by the square foot and shall include all the labor, materials and tools necessary to complete the work.

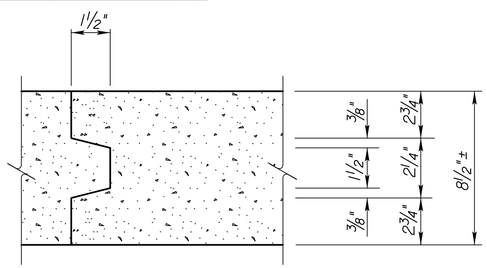
REINFORCING IN THE ABUTMENT BEAM:
Care should be exercised to prevent cutting, stretching or damaging exposed reinforcing steel. Extreme care should be exercised to avoid breaking the bond between the reinforcing steel and concrete where bars are partially exposed yet remain anchored in sound concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer. Replacement of bars damaged by the Contractor shall be at the Contractor's expense.



TYPICAL CONCRETE SURFACE REPAIR DETAIL

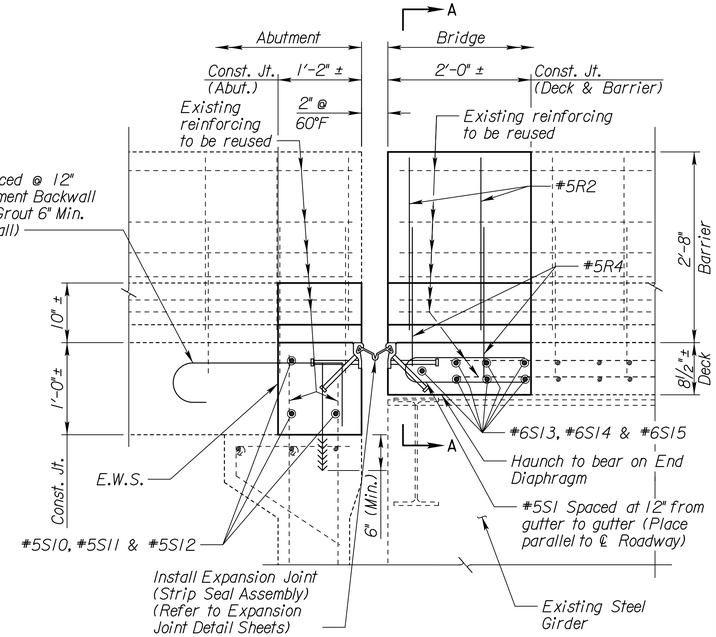
Note: Bevel same as existing bevel.

AREA FOR REPAIR	
Location	Abut. Beam (ft²)
Abut. No. 1	76
Totals	76

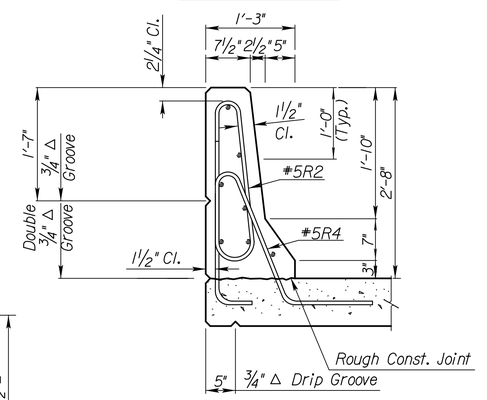


LONGITUDINAL CONSTRUCTION JOINT

CONSTRUCTION JOINTS: Place the construction joints only at locations shown or at locations approved by the Engineer.



PROPOSED SECTION



SECTION A-A THRU BARRIER

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 69-105-0.93 (130)
ABUTMENT NO. 1 PROPOSED CONSTRUCTION
US-69 OVER MERRIAM LANE AND TURKEY CREEK
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

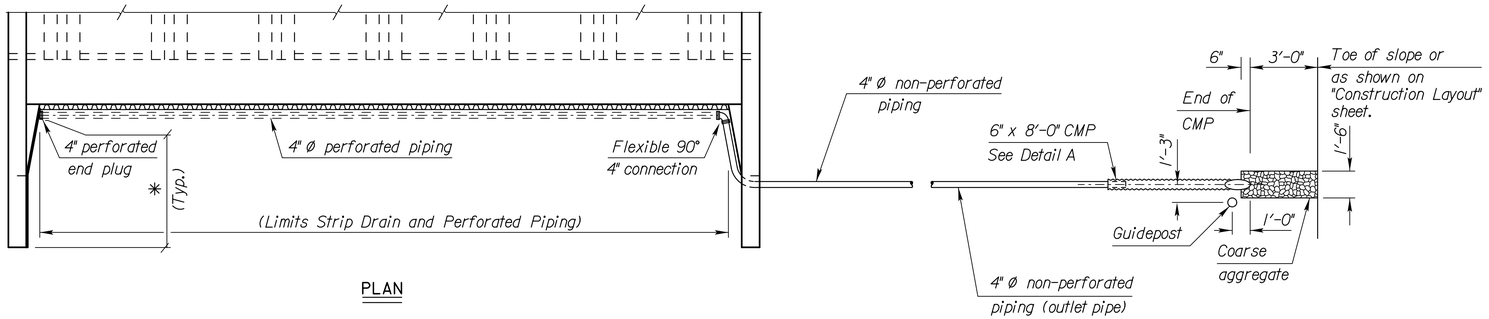
KDOT Graphics Certified 01-04-2019

Sheet No. 12

KDOT Graphics Certified

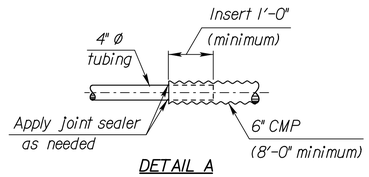
Plotted By: user
Plot Location:
File: c:\pwworkingcentral01\d0926726\kra49390\brp0130-05.dgn
Plot Date: 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	13	45

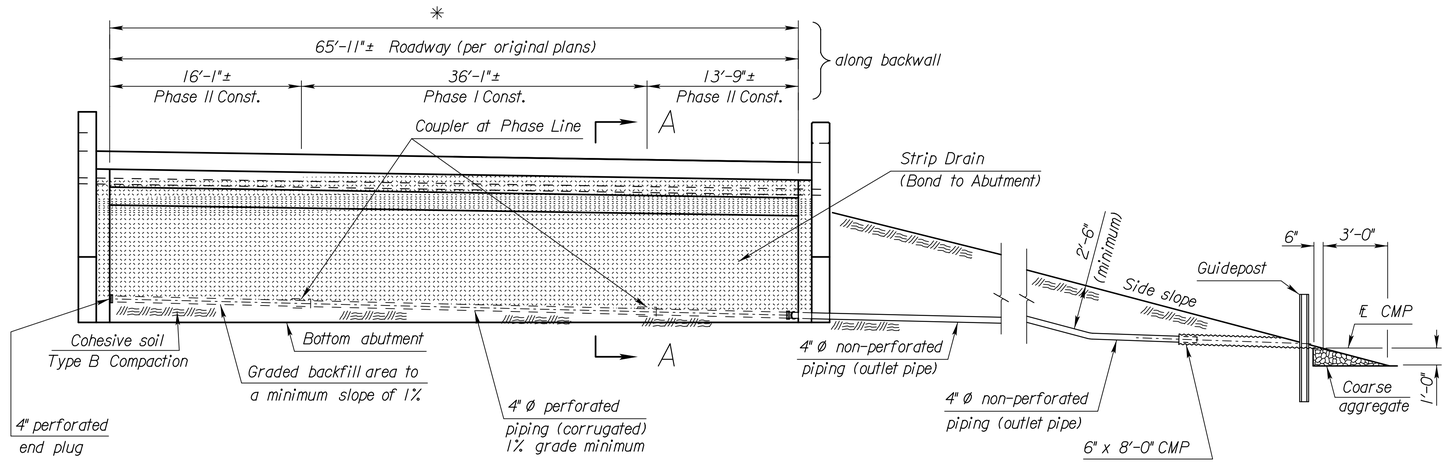


PLAN

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



DETAIL A



ELEVATION

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

GENERAL NOTES

ABUTMENT STRIP DRAIN: The Bridge Contractor shall excavate to the limits shown on the Bridge Excavation sheet, grade the bottom of the backfill area, place the strip drain, and place the perforated pipe, the outlet pipe, the CMP, and the backfill. Guide post and coarse aggregate are subsidiary to this bid item. Guide post and coarse aggregate are not required if the CMP empties onto riprap.

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

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

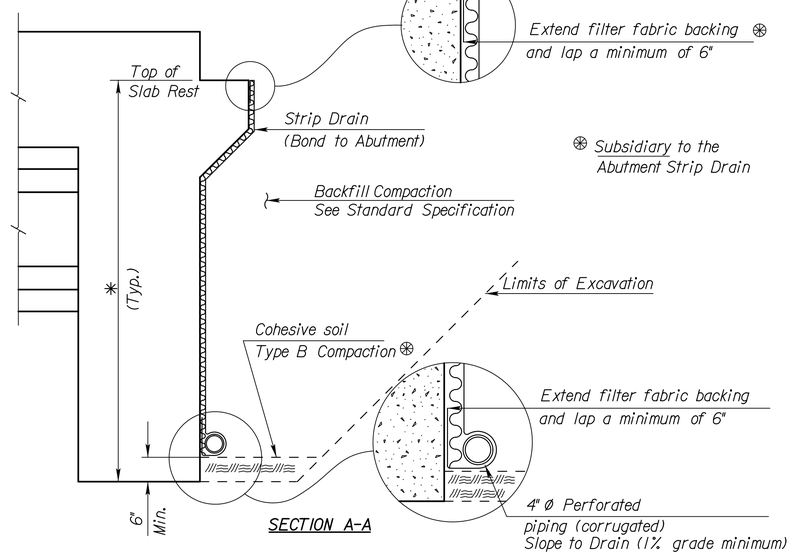
Compact the abutment backfill. See the KDOT Specifications.

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

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

Grade the bottom surface of the excavated area to drain. Backfill this area with a cohesive type soil. The soil should be a silty clay or clay under the Kansas Classification System with a minimum plasticity index of 13. Compact the material to Type B standards.

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



SECTION A-A

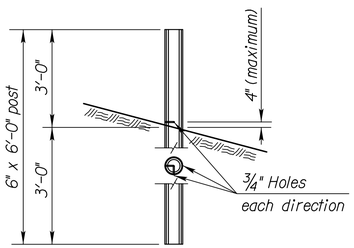
✳ Limits of Bridge Backwall Protection System (by Bridge Contractor)

GUIDE POST

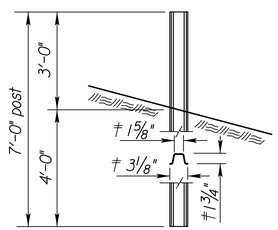
Notes:

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

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



Wood Guide Post Option (6" Ø x 6'-0")



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

† Nominal dimension.

SUMMARY OF QUANTITIES	
Abutment Strip Drain	74 Sq. Yds.
Bridge Backwall Protection System	102 Sq. Yds.
Items subsidiary to Strip Drain	
4" Ø Perforated Pipe	66 Lin. Ft.
4" Ø Outlet Pipe	30 Lin. Ft.
6" Ø CMP	8 Lin. Ft.
Guide Post	1 Each

NO.	DATE	REVISIONS	BY	APP'D
4	4/7/14	Current Release	JPJ	CER
3	2/12/14	Added Benchmark	JPJ	CER
2	7/14/08	Change Type 'C' Compaction to 'B'	JPJ	KFH
1	4-01-04	Current release		

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No.69-105-0.93 (130)
ABUTMENT NO. 1 STRIP DRAIN
US-69 OVER MERRIAM LANE
AND TURKEY CREEK

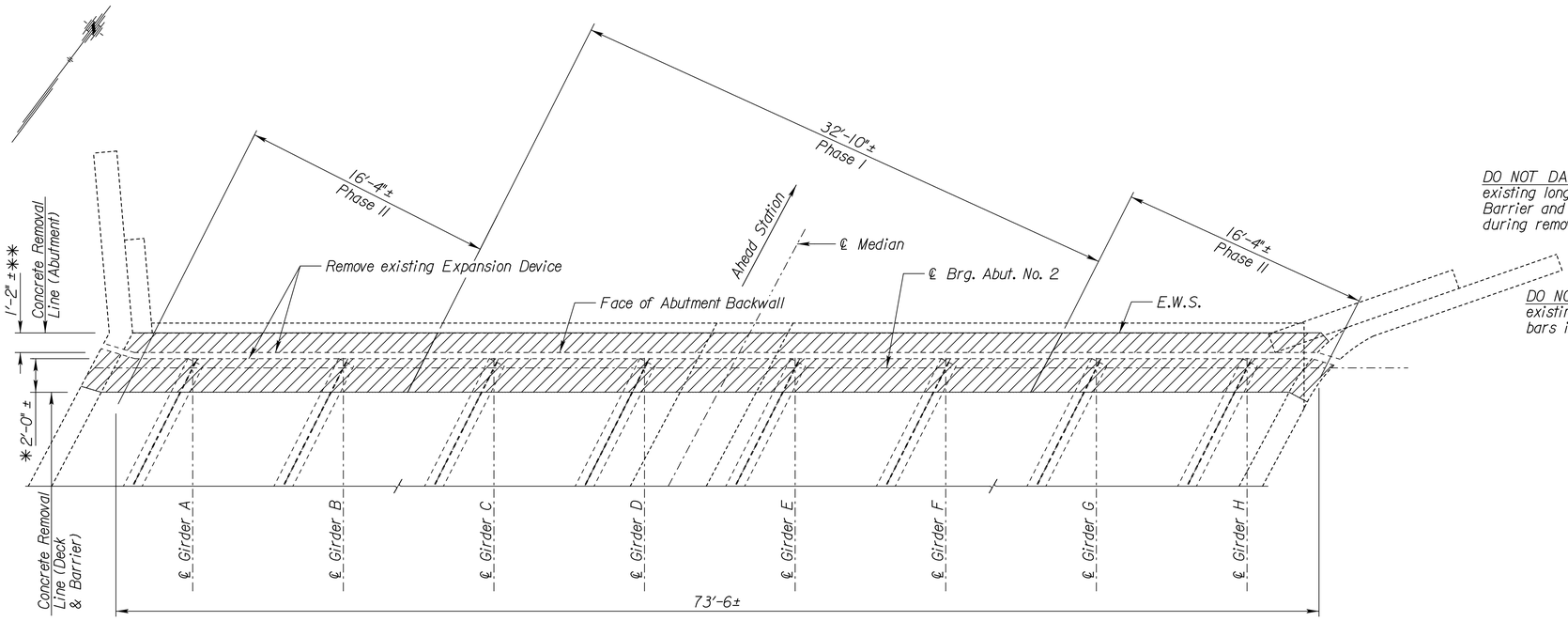
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

KDOT Graphics Certified

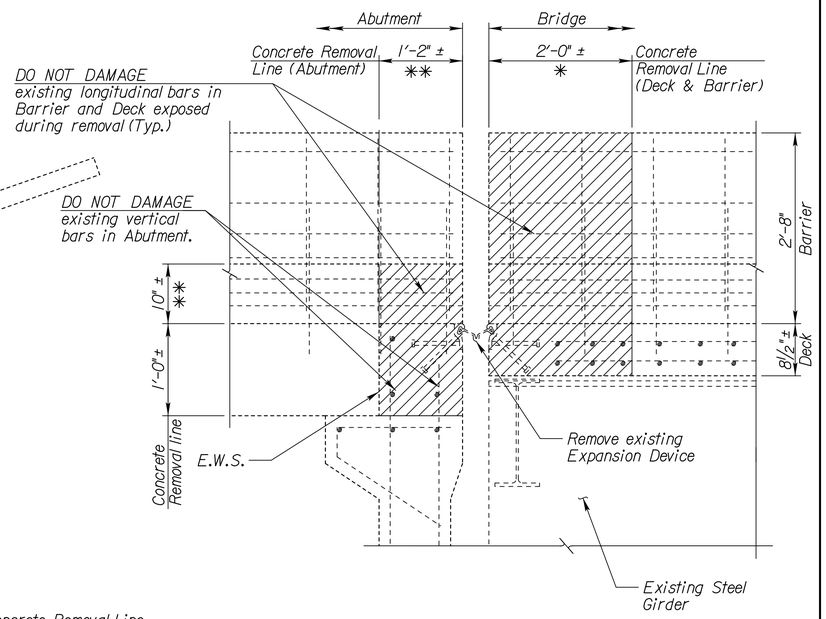
Plotted By: user | Plot Location:
File: c:\pwwarking\central01\d0926726\ka4939001\brp0130-06.dgn
Plot Date: 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	14	45



EXISTING ABUTMENT PLAN

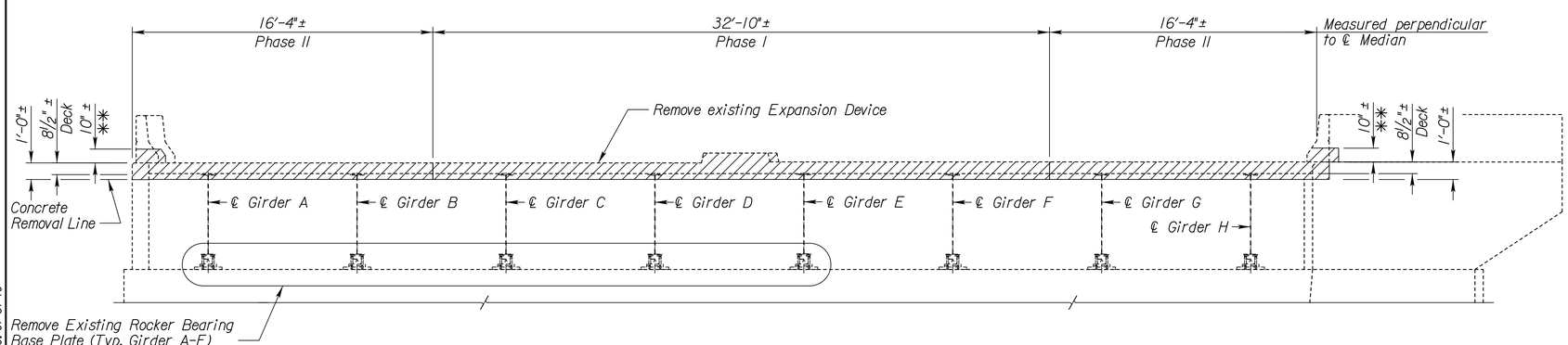
(Abut. No. 2)



EXISTING SECTION

* Match Concrete Removal Line w/existing cold joint in Deck.

** Remove concrete thru Rail as required to remove existing Expansion Joint and allow clearance for installation of new Strip Seal Assembly.



EXISTING ABUTMENT ELEVATION

(Abut. No. 2)

Indicates material to be removed

Note: Clean all exposed reinforcing being salvaged prior to placing new concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No.69-105-0.93 (130)

ABUTMENT NO. 2 CONCRETE REMOVAL DETAILS
US-69 OVER MERRIAM LANE
AND TURKEY CREEK

Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

KDOT Graphics Certified 12-03-2018

Sheet No. 14

KDOT Graphics Certified

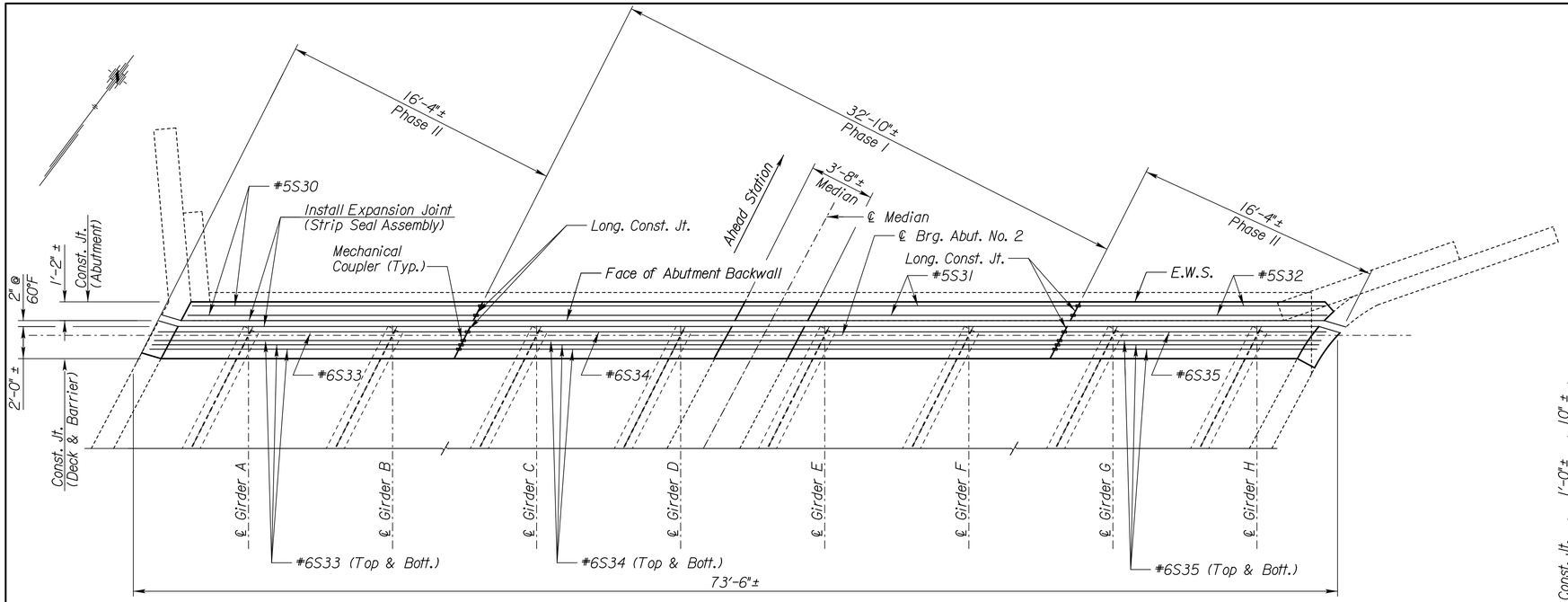
Plot Location: c:\pwworking\central01\d0926726\ka49390\brp0130-07.dgn

Plotted By: user

File: c:\pwworking\central01\d0926726\ka49390\brp0130-07.dgn

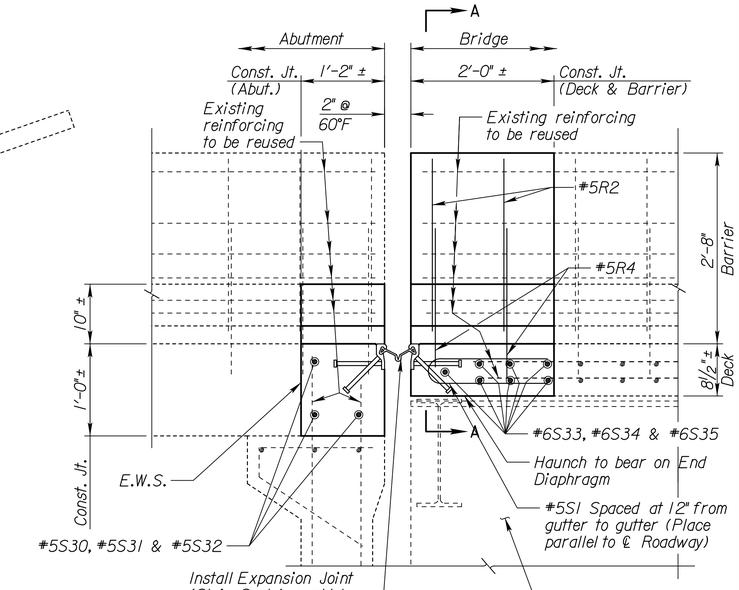
Plot Date: 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	15	45

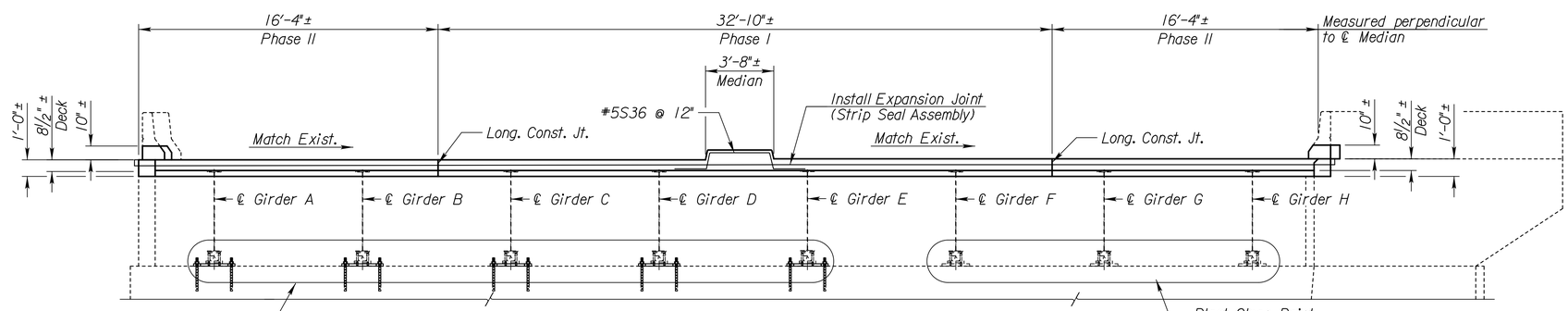


PROPOSED ABUTMENT PLAN

(Abut. No. 2) (SI not shown for clarity)



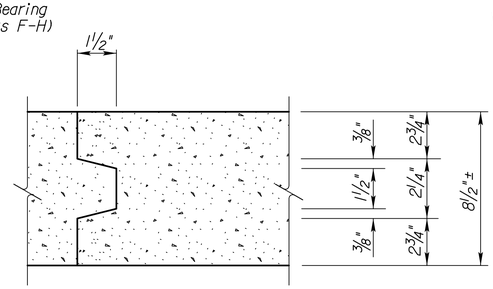
PROPOSED SECTION



PROPOSED ABUTMENT ELEVATION

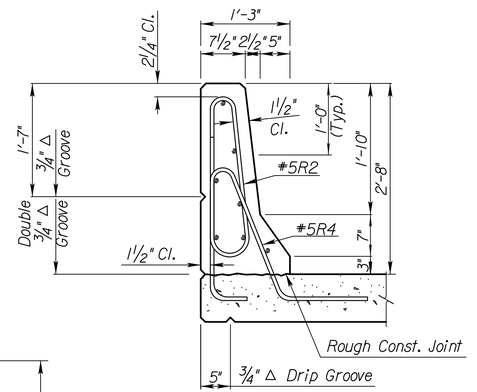
(Abut. No. 2)
(Only Reinforcing in Median shown.)

Note: Substructure Waterproofing Membrane Limits Shown on Bearing Repair Details Sheet.



LONGITUDINAL CONSTRUCTION JOINT

CONSTRUCTION JOINTS: Place the construction joints only at locations shown or at locations approved by the Engineer.



SECTION A-A THRU BARRIER

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No.69-105-0.93 (130)

ABUTMENT NO. 2 PROPOSED CONSTRUCTION
US-69 OVER MERRIAM LANE
AND TURKEY CREEK

Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

KDOT Graphics Certified 11-30-2018

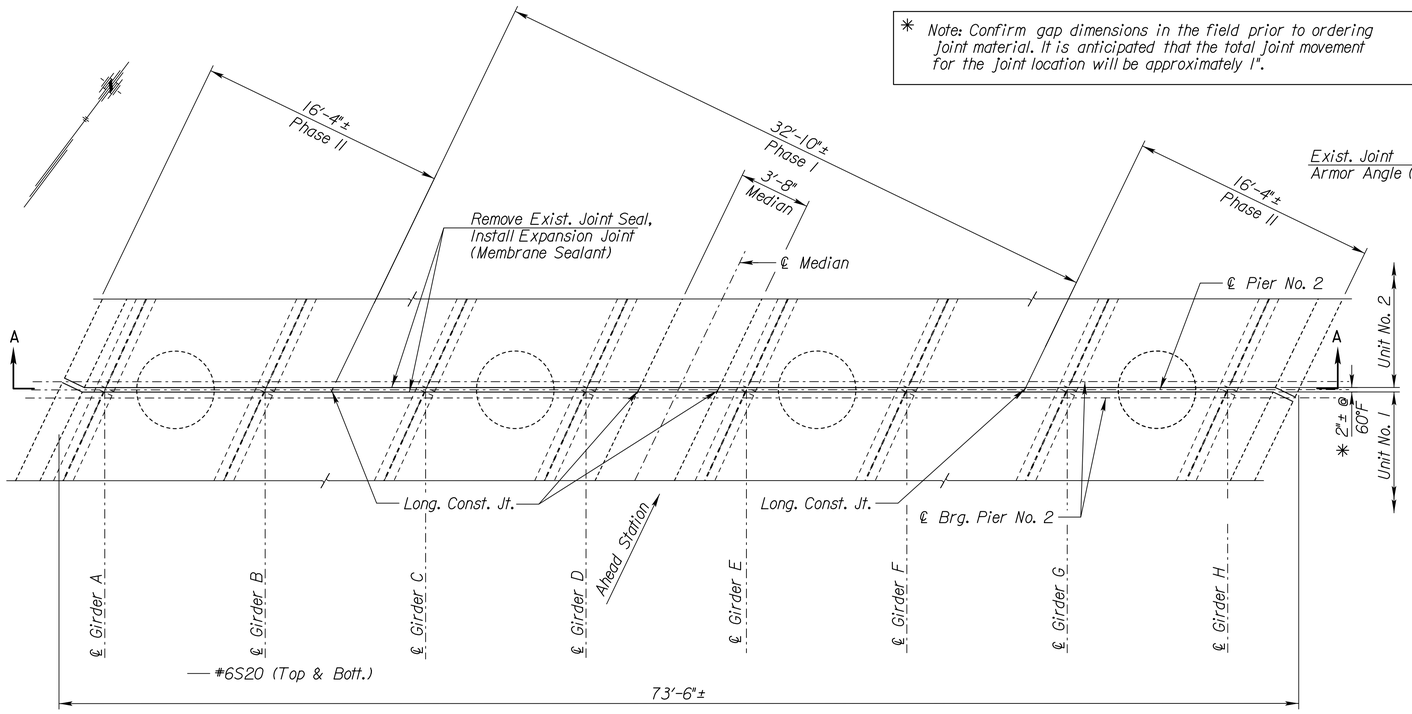
Sheet No. 15

KDOT Graphics Certified

Plot Location: c:\pwworking\central01\d0926726\ka49390\brp0130-08.dgn
Plotted By: user
File:
Plot Date: 01-31-19

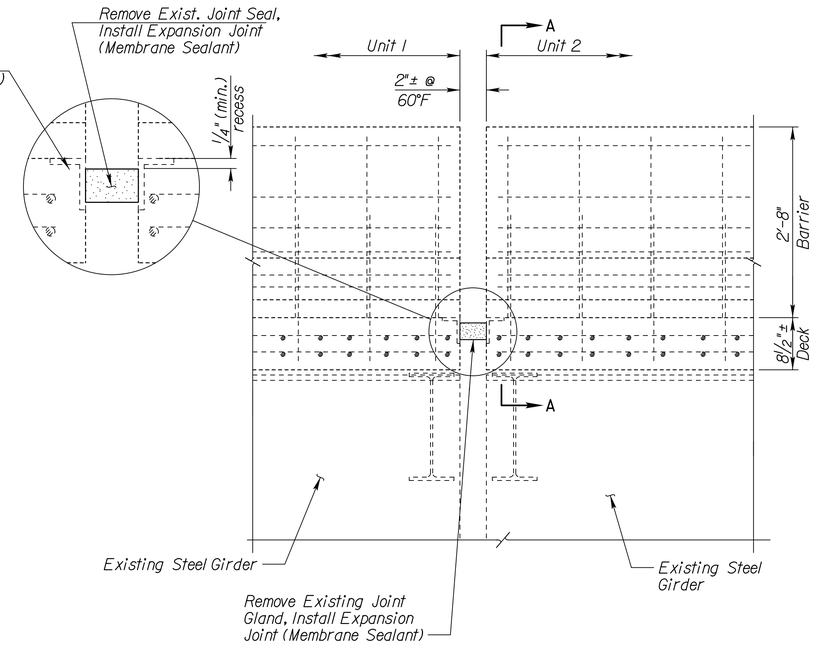
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	16	45

* Note: Confirm gap dimensions in the field prior to ordering joint material. It is anticipated that the total joint movement for the joint location will be approximately 1".

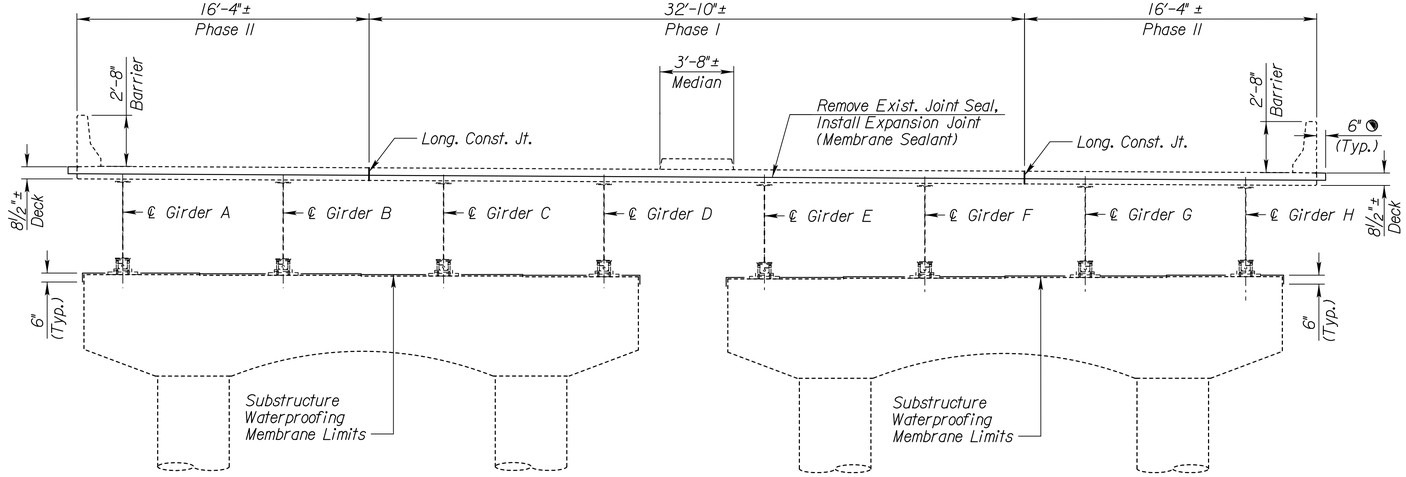


PROPOSED PIER PLAN
(Pier No. 2)

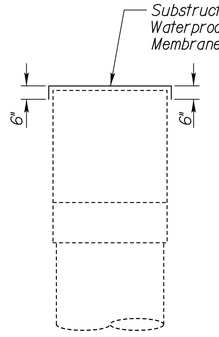
Note: For Typical Concrete Surface Repair Detail, See Abutment No. 1 Proposed Construction Sheet.



SECTION AT TRAFFIC FACE OF RAIL



SECTION A-A
(Only Reinforcing in Median shown.)



END ELEVATION PIER CAP

EXPANSION JOINT (MEMBRANE SEALANT) INSTALLATION:

The Joint shall be thoroughly cleaned by sandblasting and by high pressure air blast to remove all laitance and contaminants from the joint.

Sandblasting shall be accomplished in two passes to clean each face of the joint (one pass for each face). The nozzle shall be held at an angle to the joint face and within 1 to 2 inches of the face.

Any contaminants such as oil, curing compound, etc. shall be removed by sandblasting to the satisfaction of the Engineer. Solvents, wire brushing, or grinding shall not be permitted.

The joint shall be air blasted just prior to installation of the Membrane Sealant. The air compressor used for joint cleaning shall be equipped with trap devices capable of providing moisture-free and oil-free air at a recommended pressure of 90 psi. The joint shall be spot checked to ensure residual dust or dirt has been removed. It is required that the Engineer inspect the joint immediately prior to installation of the Membrane Sealant.

See KDOT Specifications for Membrane Sealant, Bonding Adhesive and Splice Adhesive.

Traffic shall not be allowed on the joint for a minimum of 3 hours unless otherwise directed by the Engineer.

Splices will use materials & methods recommended by the Manufacturer.

All work and materials necessary for the preparation, construction, and installation of the Joint will be subsidiary to "Expansion Joint (Membrane Sealant)".

PIER REPAIR:
This item shall consist of removing all loose, cracked and delaminated concrete from the top and sides of the Pier Beam as directed by the Engineer. These areas shall be repaired with Master Builders shot patch 21F shotcrete or an approved equivalent. Prior to placement of shotcrete, areas to be repaired shall be sandblasted, and any deteriorated reinforcing steel shall be repaired or replaced. Shotcrete shall be placed to match existing surfaces or to provide a minimum of 3" clear to reinforcing bar. The item "Concrete Surface Repair" shall be paid for by the square foot and shall include all the labor, materials and tools necessary to complete the work.

REINFORCING IN THE PIER BEAM:
Care should be exercised to prevent cutting, stretching or damaging exposed reinforcing steel. Extreme care should be exercised to avoid breaking the bond between the reinforcing steel and concrete where bars are partially exposed yet remain anchored in sound concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer. Replacement of bars damaged by the Contractor shall be at the Contractor's expense.

AREA FOR REPAIR	
Location	Pier Beam (ft²)
Pier No. 2	200
Totals	200

◔ Existing gland extends along the same slope as the roadway. Install Expansion Joint (Membrane Sealant) as shown in Section A-A.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No.69-105-0.93 (130)
PIER NO. 2 PROPOSED CONSTRUCTION
US-69 OVER MERRIAM LANE
AND TURKEY CREEK
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

KDOT Graphics Certified 01-10-2019

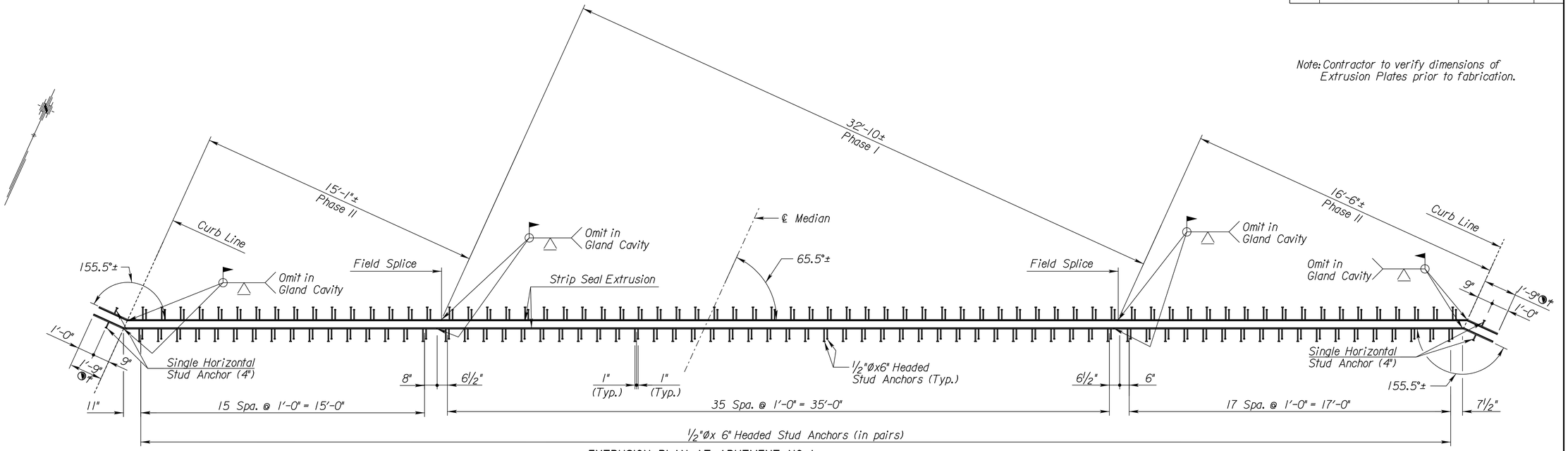
Sheet No. 16

KDOT Graphics Certified

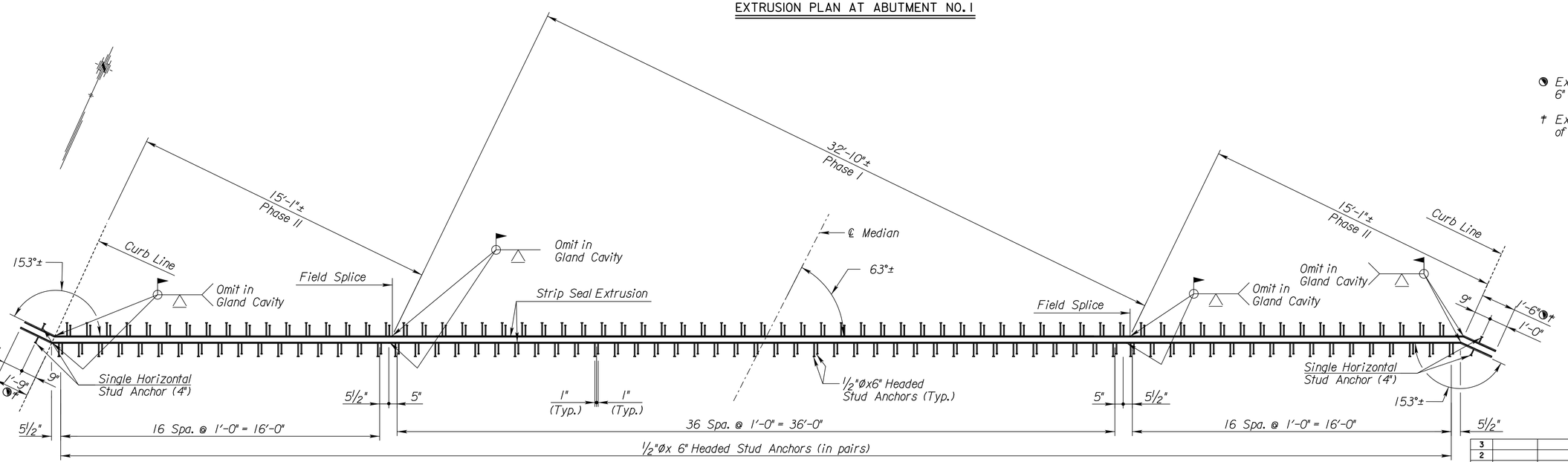
Plotted By: user | Plot Location:
File: c:\pwworking\central01\d0926726\kd493901\brp0130-09.dgn
Plot Date: 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	17	45

Note: Contractor to verify dimensions of Extrusion Plates prior to fabrication.



EXTRUSION PLAN AT ABUTMENT NO. 1



EXTRUSION PLAN AT ABUTMENT NO. 2

℄ Extend strip seal assembly 6" beyond edge of deck.

† Extend gland 6" past edge of strip seal assembly.

Plot Location: c:\pwworkingcentral01\d0926726\kd49390\brp0130-10.dgn
Plotted By: user
Plot Date: 01-31-19

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 69-105-0.93 (130)

EXPANSION JOINT DETAILS (SHEET 1 OF 2)
US-69 OVER MERRIAM LANE
AND TURKEY CREEK

Proj. No. 69-105 KA-4939-01 Wyandotte Co.

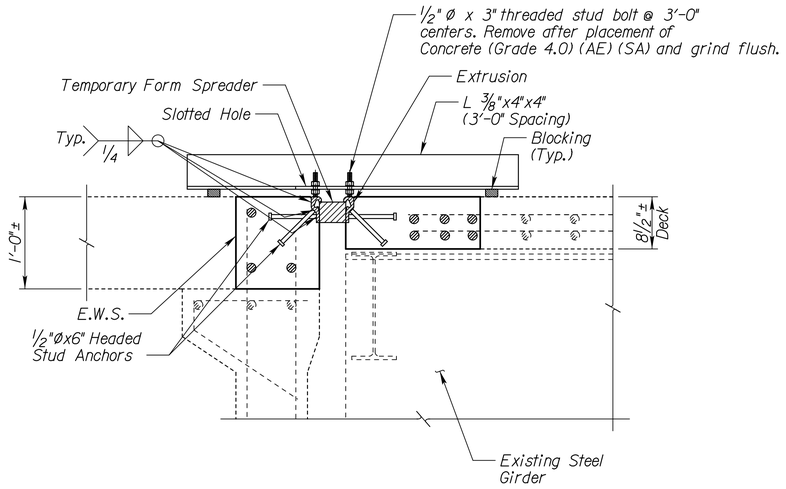
SHEET NO.	OF	SCALE		APP'D			
DESIGNED	ECS	DETAILED	JAH	QUANTITIES	ECS	CADD	JAH
DESIGN CK.	CDH	DETAIL CK.	ECS	QUAN. CK.	CDH	CADD CK.	ECS

KDOT Graphics Certified 01-10-2019

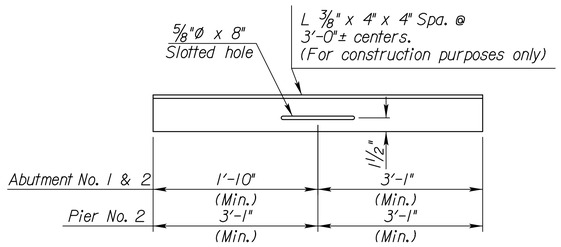
Sheet No. 17

KDOT Graphics Certified

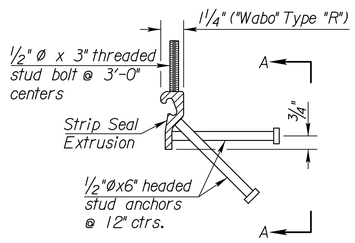
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	18	45



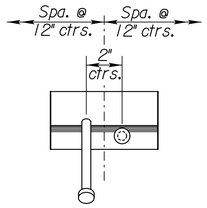
TYPICAL SECTION AT ABUTMENT SHOWING ERECTION ANGLE



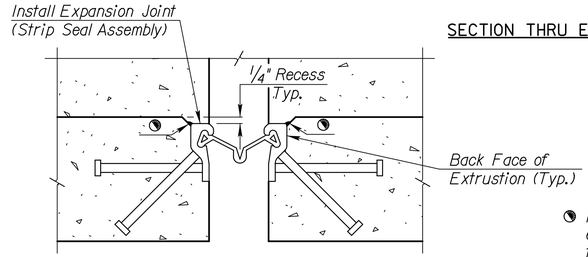
PLAN OF STRIP SEAL ERECTION ANGLE



SECTION THRU EXTRUSION



SECTION A-A



EXTRUSION RECESS

◔ Form 1/4" recess to back fae at bottom of the rounded edge of the strip seal extrusions. After concrete has cured, throughly clean valley area that has been created and fill with a silicone based sealant (or as directed by the Engineer) for the entire roadway width of the strip seal extrustions. Materials and labor shall be subisidiary to Concrete (Grade 4.0) (AE) (SA).

NOTES:
Immediately prior to placing the Concrete (Grade 4.0) (AE) (SA) around the Strip Seal Extrusion, the existing concrete surface at the concrete removal line shall be cleaned and roughened.
The erection angles shall be securely bolted to the extrusion.
The top of extrusion shall be in the same plane and recessed 1/4" below the top of the roadway.
The erection angles shall be removed as soon as the new concrete will support the assembly without allowing any settlement or tilting.

Allow the concrete to cure for 24 hours, remove the stud bolts on the extrusions and grind flush prior to opening to traffic.

The stud bolts, nuts and washers, and erection angles, labor and materials used to install and remove the erection angles shall be subsidiary to the bid item "Expansion Joint (Strip Seal Assembly)".

The strip seal extrusions in the bridge deck shall be a "Wabo" Type "R" steel shape or approved equivalent as shown in the details. All items shown on the Expansion Joint Details sheets are included in the bid item "Expansion Joint (Strip Seal Assembly)". All welds on the extrusion shall be 1/4" continuous fillet welds, unless otherwise noted.

GAP (Perpendicular to device) Temp. Range (Degrees F)											
Temp.	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°	110°
Abut. Gap	2 15/16"	2 3/4"	2 9/16"	2 3/8"	2 3/16"	2"	1 13/16"	1 5/8"	1 7/16"	1 1/4"	1 1/16"

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 69-105-0.93 (130)
EXPANSION JOINT DETAILS (SHEET 2 OF 2)
US-69 OVER MERRIAM LANE AND TURKEY CREEK
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

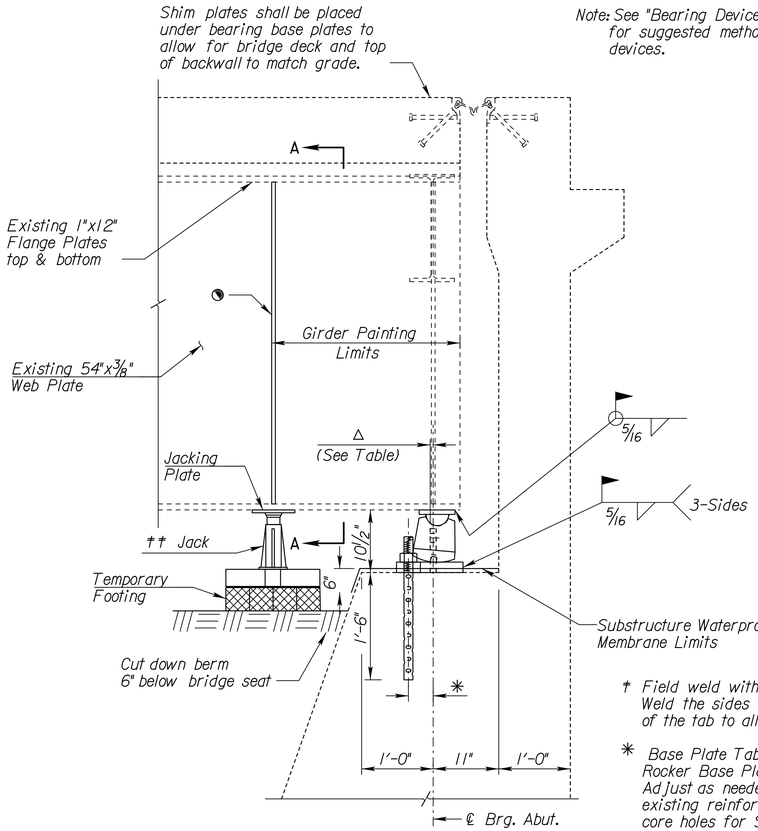
SHEET NO.	OF	SCALE		APP'D			
DESIGNED	ECS	DETAILED	JAH	QUANTITIES	ECS	CADD	JAH
DESIGN CK.	CDH	DETAIL CK.	ECS	QUAN. CK.	CDH	CADD CK.	ECS

KDOT Graphics Certified 01-10-2019

KDOT Graphics Certified

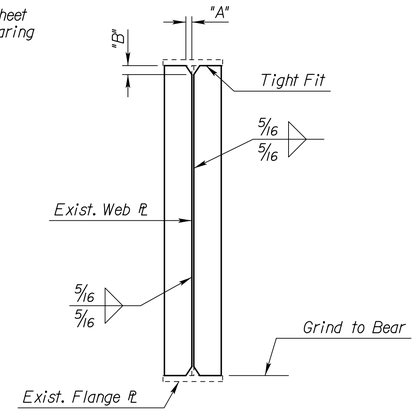
Plotted By: user
Plot Location:
File: c:\pwworking\central01\d0926726\kd49390\brp0130-11.dgn
Plot Date: 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	19	45



TYPICAL SECTION - ABUTMENT NO. 1

Note: See "Bearing Device Repair Details" Sheet for suggested method of replacing bearing devices.



SECTION A-A
(Jacking Stiffener)

DIMENSIONS FROM EXISTING PLANS	
Bottom Flange Thickness (t_f)	1"
Bottow Flange Width	12"
Web Thickness (t_w)	3/8"
Bearing Stiffener Thickness	5/8"
Bearing Stiffener Width	5 1/2"
Clip Dimension "A"	1"
Clip Dimension "B"	1"

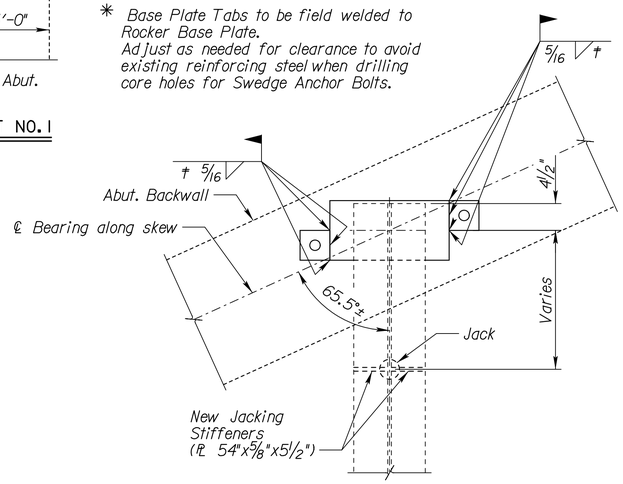
◔ Jacking stiffeners are required. They shall have the same dimensions as the existing bearing stiffeners. Welds shall be the same size as those connection existing bearing stiffeners to web. Jacking Stiffeners to be painted.

†† Placement of jack is typical only. Jack may be placed as shown or as otherwise approved by the Engineer. Submit procedure to the Engineer for approval prior to beginning work.

Note: Any excavation required in placement of temporary footings for jacks shall be backfilled to 6" below bridge seat, and any existing riprap shall be repaired.

† Field weld with 5/16" fillet weld on 3 sides. Weld the sides of the tabs first, then the top of the tab to alleviate warping of the plate.

* Base Plate Tabs to be field welded to Rocker Base Plate. Adjust as needed for clearance to avoid existing reinforcing steel when drilling core holes for Swedge Anchor Bolts.

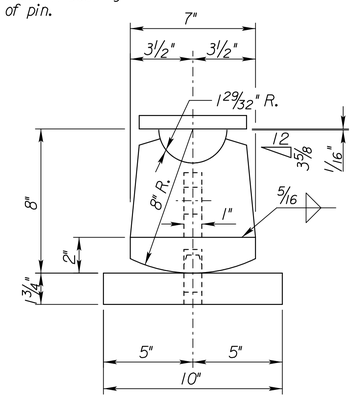


PART PLAN - ABUTMENT NO. 1

PIN OFFSET (△) Temp. Range (Degrees F)												
Temp.	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°	110°
Offset	-9/16"	-1/2"	-3/8"	-5/16"	-3/16"	-1/8"	0"	1/8"	3/16"	5/16"	3/8"	1/2"

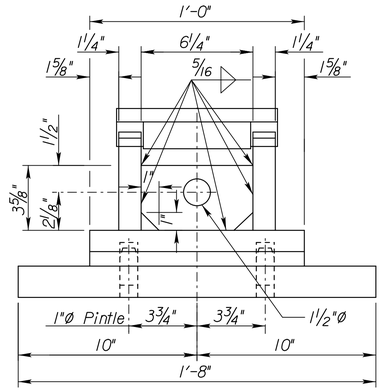
Negative values for △ are away from abutment and positive values are towards abutment.

Note: Omit weld in bearing grooves of pin.

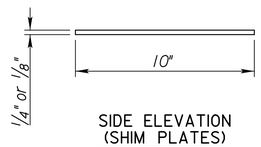


SIDE ELEVATION
ROCKER & BASE ℄

(8 Rockers Req'd)
(13 Base ℄'s Req'd)

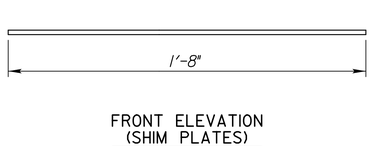


FRONT ELEVATION
ROCKER & BASE ℄

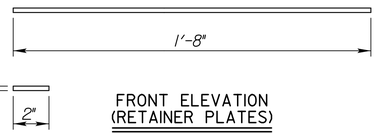


SIDE ELEVATION
(SHIM PLATES)

(32 1/4" ℄'S Req'd.)
(32 1/8" ℄'S Req'd.)

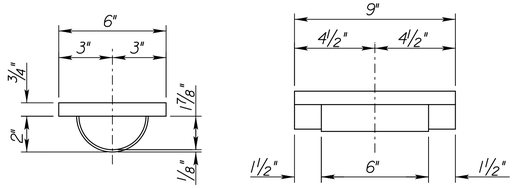


FRONT ELEVATION
(SHIM PLATES)

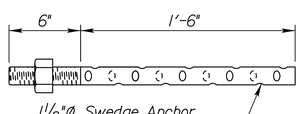


FRONT ELEVATION
(RETAINER PLATES)

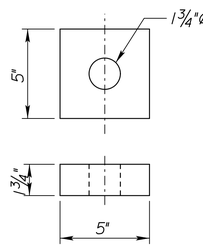
SIDE ELEVATION
(RETAINER PLATES)
(26 1/4" ℄'S Req'd.)



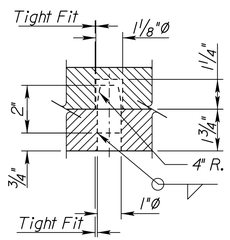
SOLE PIN & PLATE DETAILS
(8 Req'd.)



ANCHOR BOLT
(26 Req'd.)



"DOG EAR" DETAILS
(26 Req'd.)



PINTLE
(26 Req'd.)

SUMMARY OF QUANTITIES	
Bearing (Steel)	8 Each

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 69-105-0.93 (130)
BEARING DEVICE REPLACEMENT DETAILS
US-69 OVER MERRIAM LANE
AND TURKEY CREEK
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

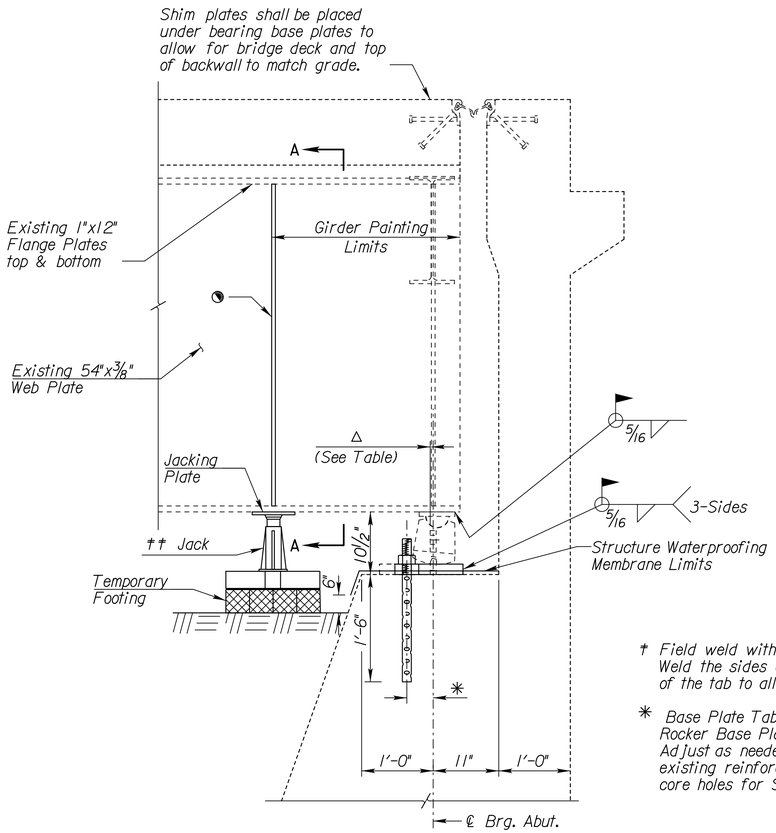
KDOT Graphics Certified 01-09-2019

Sheet No. 19

Plotted By: user | Plot Location:
File: c:\pwworking\central01\d0026726\kd49390\brpl130-12.dgn
Plot Date: 01-31-19

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	20	45



TYPICAL SECTION - ABUTMENT NO. 2

(For Section A-A, see Sheet No. 20.)

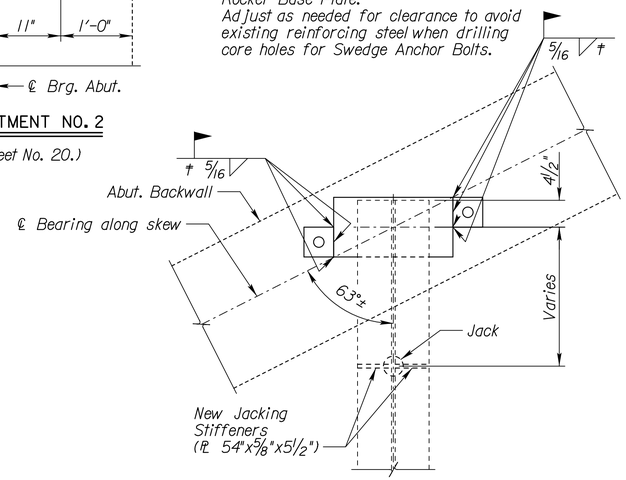
◔ *Jacking stiffeners are required. They shall have the same dimensions as the existing bearing stiffeners. Welds shall be the same size as those connection existing bearing stiffeners to web. Jacking Stiffeners to be painted.*

†† *Placement of jack is typical only. Jack may be placed as shown or as otherwise approved by the Engineer. Submit procedure to the Engineer for approval prior to beginning work.*

Note: Any excavation required in placement of temporary footings for jacks shall be backfilled to its original condition, and any existing riprap shall be repaired.

† *Field weld with 5/16" fillet weld on 3 sides. Weld the sides of the tabs first, then the top of the tab to alleviate warping of the plate.*

* *Base Plate Tabs to be field welded to Rocker Base Plate. Adjust as needed for clearance to avoid existing reinforcing steel when drilling core holes for Swedge Anchor Bolts.*



PART PLAN - ABUTMENT NO. 2

(Girders A-E)

PIN OFFSET (Δ) Temp. Range (Degrees F)												
Temp.	*0°*	*10°*	*20°*	*30°*	*40°*	*50°*	*60°*	*70°*	*80°*	*90°*	*100°*	*110°*
Offset	*-9/16"*	*-1/2"*	*-3/8"*	*-5/16"*	*-3/16"*	*-1/8"*	*0"*	*1/8"*	*3/16"*	*5/16"*	*3/8"*	*1/2"*

Negative values for Δ are away from abutment and positive values are towards abutment.

GENERAL NOTES

BEARING REPLACEMENT: The following is a suggested method for replacing the bearing devices at Abutment No. 1.

1. *Move traffic away from girders being placed.*
2. *Install new jacking stiffeners on all existing girders as needed.*
3. *Jack up the existing girders at once by no more than 1/4" at a time to a max. of shim plate thickness +1/4". (Approximate load is 35 tons per girder). Place 12"x12"x1 1/2" steel plate softeners on top of the jack to protect the girder.*
4. *Remove weld around sole plate above the pin using air-arc carbon process. Remove the rocker and bearing plate. Cut off the existing anchor bolts.*
5. *Level out the concrete bearing area by grinding and placing a thin-set grout under the new bearing pad.*
6. *Place new bearing devices on a bearing mat or pad per KDOT Standard Specifications. Locate according to the temperature table. Weld bearing pin to bottom flange of girder with a 5/16" fillet weld. (4- sides)*
7. *Core holes for swedge anchor bolts.*
8. *Epoxy swedge anchor bolts.*
9. *Position bearing plate tabs and weld with a 5/16" fillet weld (3- sides) Note to weld the sides of the tabs first, then the top of the tab to alleviate warping of the plate.*
10. *Tighten nuts on bearing device anchor bolts.*
11. *Lower all girders back down on rockers and remove jacks.*
12. *Touch up primer and apply finish coat.*

BEARING BASE PLATE REPLACEMENT: The following is a suggested method for replacing the bearing base plates at Abutment No. 2.

1. *Move traffic away from girders being jacked.*
2. *Install new jacking stiffeners on all existing girders as needed.*
3. *Jack up the existing girders at once by no more than 1/4" at a time to allow for base plate replacement. (Approximate load is 35 tons per girder). Place 12"x12"x1 1/2" steel plate softeners on top of the jack to protect the girder.*
4. *Remove the bearing plate. Cut off the existing anchor bolts.*
5. *Level out the concrete bearing area by grinding and placing a thin-set grout under the new bearing pad.*
6. *Place new base plates on a bearing mat or pad per KDOT Standard Specifications. Locate according to the temperature table.*
7. *Core holes for swedge anchor bolts.*
8. *Epoxy swedge anchor bolts.*
9. *Position bearing plate tabs and weld with a 5/16" fillet weld (3- sides) Note to weld the sides of the tabs first, then the top of the tab to alleviate warping of the plate.*
10. *Tighten nuts on bearing device anchor bolts.*
11. *Lower all girders back down on rockers and remove jacks.*
12. *Touch up primer and apply finish coat.*

RESET BEARING: The following is a suggested method for resetting the bearing devices at Abutment No. 2.

1. *Move traffic away from girders being jacked.*
2. *Install new jacking stiffeners on all existing girders as needed.*
3. *Jack up the existing girders in each phase at once by no more than 1/4" at a time to allow for reset of the bearings (Approximate load is 35 tons per girder). Place 12"x12"x1/2" steel plate softeners on top of the jack to protect the girder.*
4. *Remove weld around sole plate above the pin on one girder using the air-arc carbon process.*
5. *Remove pin and grind weld smooth.*
6. *Re-postion bearing pin for tabled temperature and re-weld to bottom flange of girder with a 5/16" fillet weld. (4-sides)*
7. *Repeat steps 4 thru 6 for all remaining girders (one girder at a time).*
8. *Lower all girders back down on rockers and remove jacks.*
9. *Touch up primer and apply finish coat.*

SUMMARY OF QUANTITIES	
Reset Existing Bearing	*8 Each*

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No.69-105-0.93 (130)

BEARING DEVICE REPAIR DETAILS
US-69 OVER MERRIAM LANE
AND TURKEY CREEK

Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

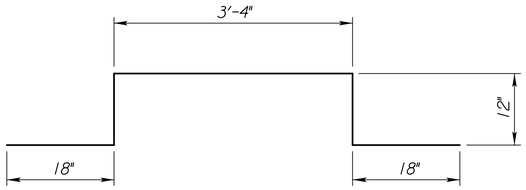
KDOT Graphics Certified 01-08-2019

Sheet No. 20

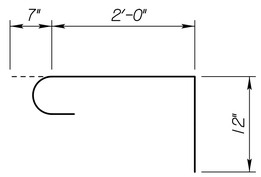
KDOT Graphics Certified

Plotted By: user | Plot Location: File: c:\pwworking\central01\d0926726\kd4939001\brp0130-13.dgn | Plot Date: 01-31-19

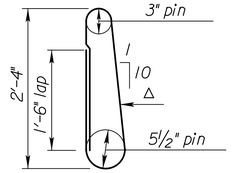
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	21	45



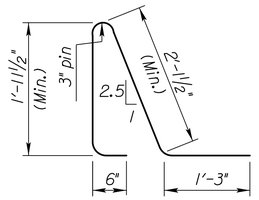
#5S16 & #5S36



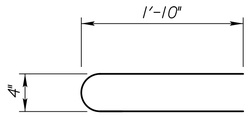
#5S17



#5R2
(L = 6'-6")



#5R4
(L = 6'-0" Min.)



#5S17

BENDING DIAGRAMS
(All dimensions are out to out of bars.)

BILL OF REINFORCING STEEL
Grade 60

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
S10	**	**	**	R2	#5	8	6'-6"
S11	**	**	**	R4	#5	8	6'-0"
S12	**	**	**				
S13	**	**	**	S1	#5	140	3'-10"
S14	**	**	**	S16	#5	6	8'-4"
S15	**	**	**	S17	#5	66	3'-9"
S30	**	**	**	S36	#5	6	8'-4"
S31	**	**	**				
S32	**	**	**				
S33	**	**	**				
S34	**	**	**				
S35	**	**	**				

Epoxy Coated

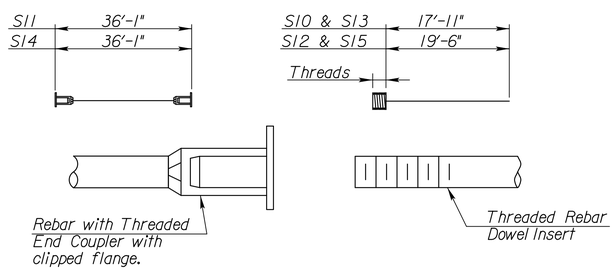
Non-Epoxy

* See Bending Diagram

** See Table for Coupled Bars

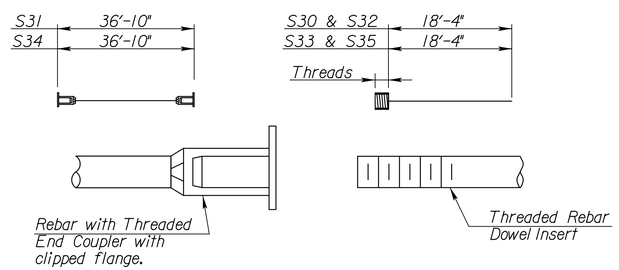
EPOXY COATED THREADED REBAR SPLICES - ABUT. NO. 1

THREADED DOWEL BARS (PHASE I)			THREADED COUPLER BARS (PHASE II)				
Bar	S11	S14	Bar	S10	S12	S13	S15
Number	3	7	Number	3	3	7	7
Size	#5	#6	Size	#5	#5	#6	#6
Length	36'-1"	36'-1"	Length	17'-11"	19'-6"	17'-11"	19'-6"



EPOXY COATED THREADED REBAR SPLICES - ABUT. NO. 2

THREADED DOWEL BARS (PHASE I)			THREADED COUPLER BARS (PHASE II)				
Bar	S31	S34	Bar	S30	S32	S33	S35
Number	3	7	Number	3	3	7	7
Size	#5	#6	Size	#5	#5	#6	#6
Length	36'-10"	36'-10"	Length	18'-4"	18'-4"	18'-4"	18'-4"



THREADED REBAR SPLICE SYSTEM

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

NO.	DATE	REVISIONS	BY	APP'D
3	11-25-08	Modify R1 Bar	JPJ	KFH
2	4-23-08	R12 & R13 ADDED	JPJ	KFH
1	5-16-03	Current Release		

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 69-105-0.93 (130)
BILL OF REIN. STEEL & BENDING DIAGRAMS
US-69 OVER MERRIAM LANE AND TURKEY CREEK
Proj. No. 69-105 KA-4939-01 Wyandotte Co.

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

KDOT Graphics Certified 01-10-2019

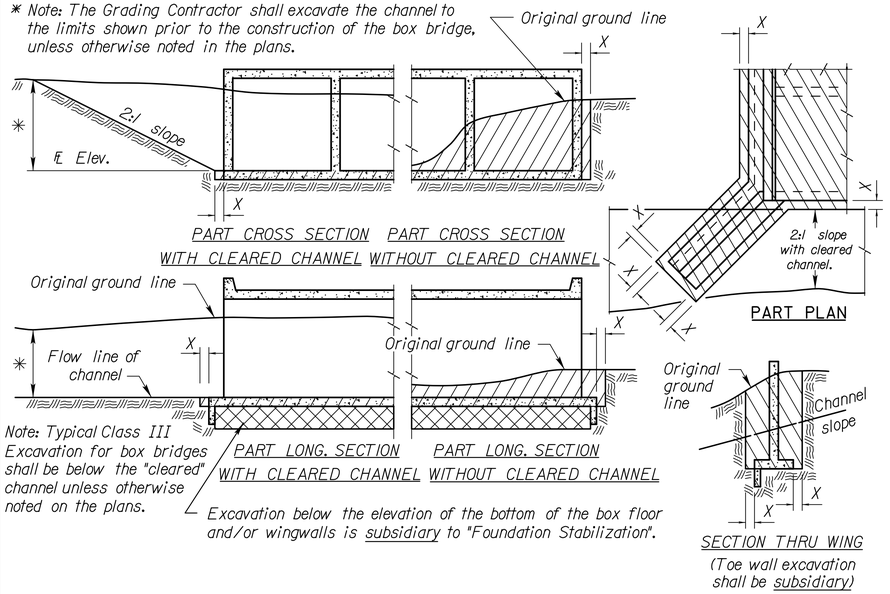
Sheet No. 21

KDOT Graphics Certified

Plotted By: user
Plot Location:
File: c:\pwworking\central01\d0926726\ka49390\brp0130-14.dgn
Plot Date: 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	22	45

* 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.

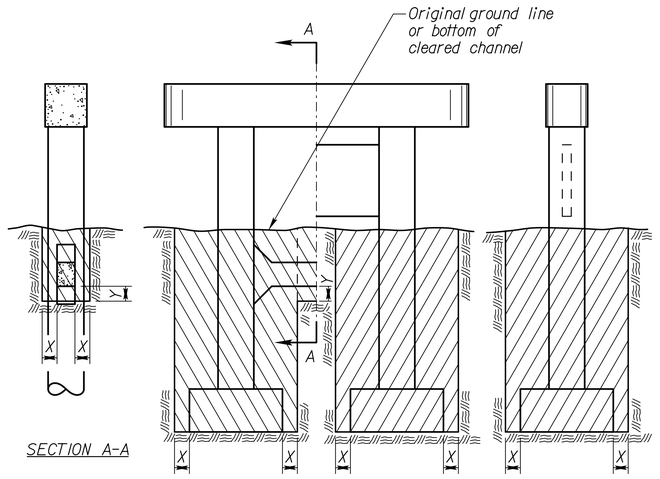


Note: Typical Class III Excavation for box bridges shall be below the "cleared" channel unless otherwise noted on the plans.

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

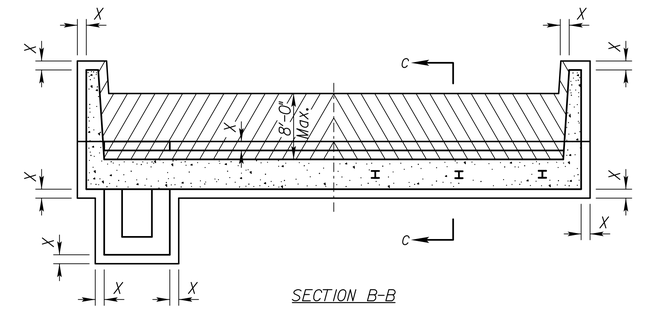
EXCAVATION DETAILS FOR REINFORCED CONCRETE BOX CULVERT

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.

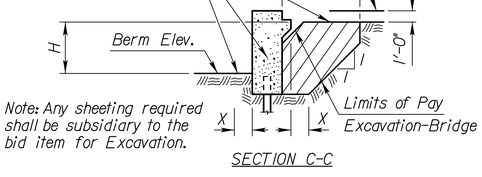


EXCAVATION DETAILS FOR TYPICAL PIERS

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



Grading Contractor to complete embankment to this profile prior to construction of the abutment

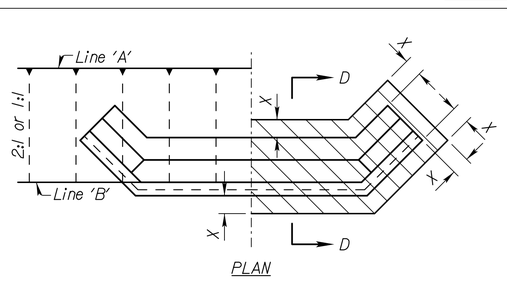


Note: Bridge Contractor shall finish the embankment and berms after the construction of the abutment and dispose of any excess material as approved by the Engineer.

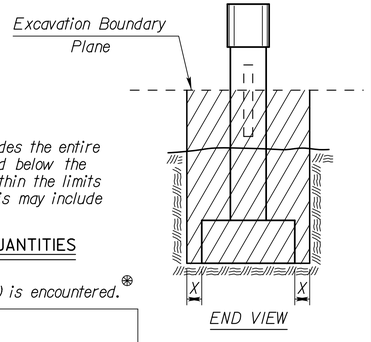
Note: Any sheeting required shall be subsidiary to the bid item for Excavation.

EXCAVATION DETAILS FOR TYPICAL ABUTMENTS

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



EXCAVATION DETAILS FOR ABUTMENTS WITH FLARED WINGWALLS



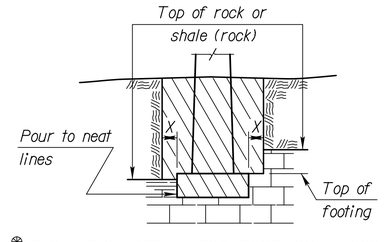
Note: Class II Excavation includes the entire volume of whatever nature found below the "Excavation Boundary Plane", within the limits specified for measurement. This may include water or air.

CLASS II EXCAVATION QUANTITIES

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

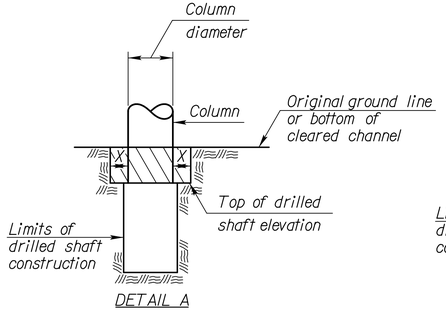
Note: All bridge excavation shall be computed on the basis of the hatched areas and boundary lines indicated on this sheet and the Excavation Boundary Plane on the Construction Layout.

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.



⊛ 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)

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
5				
4	8-15-12	Embeddement Excavation Subsidiary	JPJ	TLF
3	10-16-06	Revised "Foundation Stab." Note	JPJ	KFH
2	10-19-04	Concrete - Class to Grade	RAM	KFH
1	4-10-02	Added "Foundation Stab." Note	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No.69-105-0.93 (130)

BRIDGE EXCAVATION (LFD)
US-69 OVER MERRIAM LANE AND TURKEY CREEK

BRI00A Wyandotte Co.

FHWA APPROVAL			11-01-06	APP'D	KENNETH F. HURST
DESIGNED	DETAILED	RDR	QUANTITIES	CADD	
DESIGN CK.	DETAIL CK.	LRR	QUAN.CK.	CADD CK.	

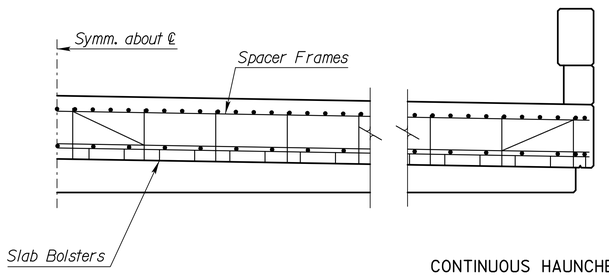
KDOT Graphics Certified 01-09-2019

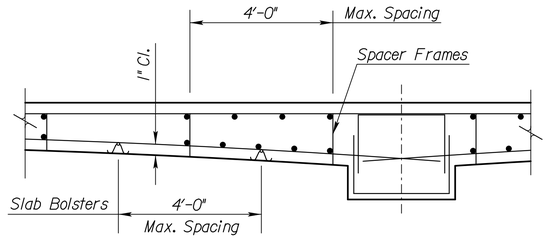
Sheet No. 22

Std. Base File: br100.dgn | Plot Location:
Plotted By: user
File: c:\pwworking\central01\d0926726\ka4939001\bss01_30-15.dgn
Plot Date: 01-31-19

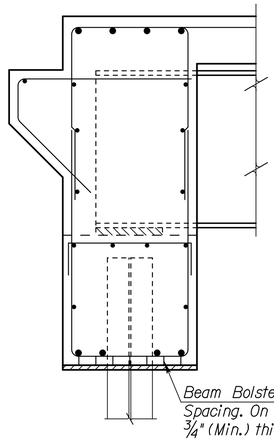
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	23	45



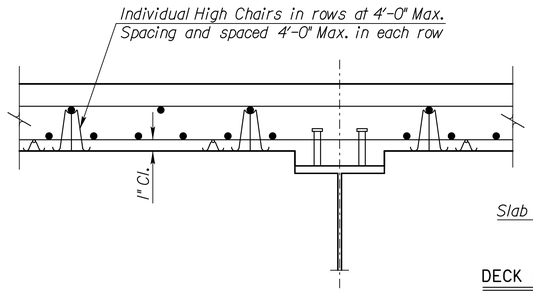


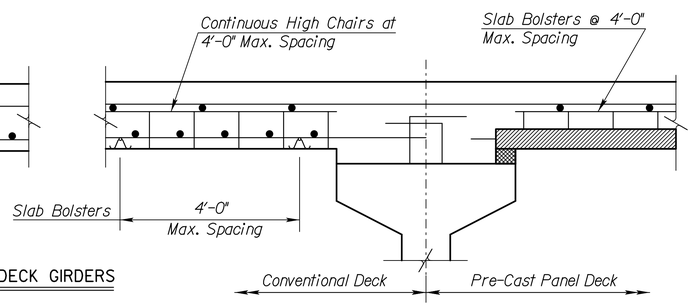
CONTINUOUS HAUNCHED SLAB



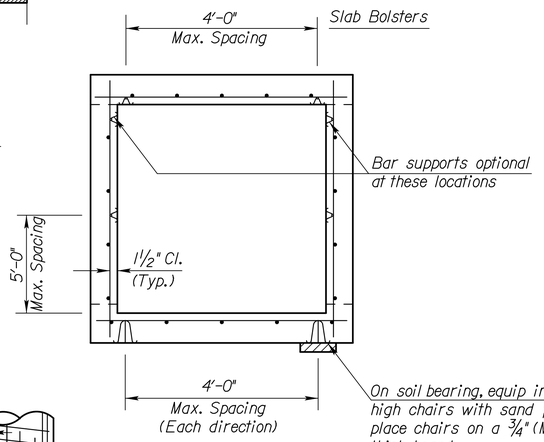
Beam Bolster at 4'-0" Max. Spacing. On soil bearing, place a 3/4" (Min.) thick board under bolster.

ABUTMENT

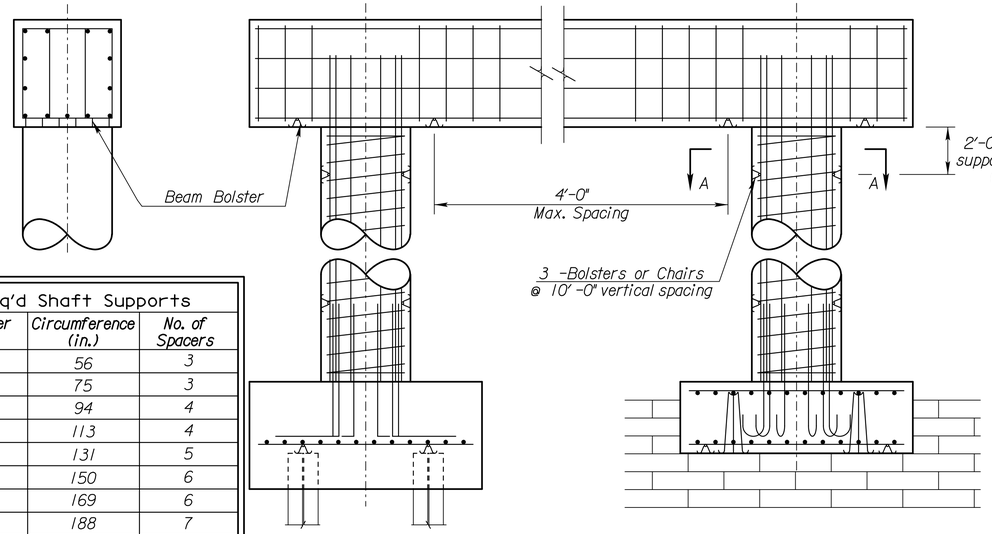




DECK GIRDERS

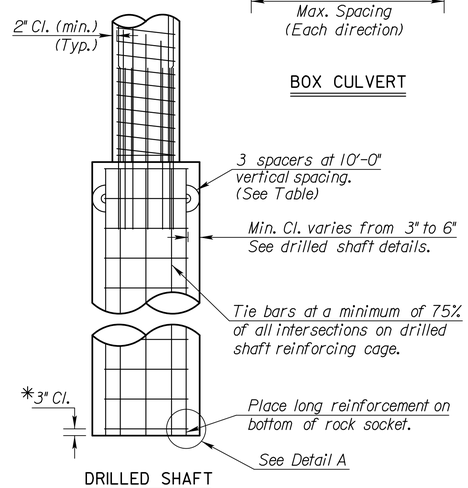


BOX CULVERT

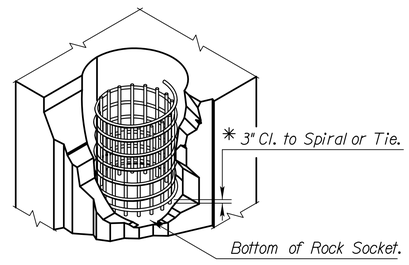


PIER

Req'd 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

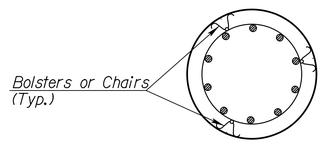


DRILLED SHAFT



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 1/4" of that indicated on the plans.

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

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

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

NO.	DATE	REVISIONS	BY	APP'D
5	11-10-10	Column Bar Supports Req'd	JPJ	TLF
4	12-01-05	Drilled Shaft Spiral Steel Placement	JPJ	KFH
3	8-21-00	Added Pre-Cast Panel Detail	RAM	KFH
2	12-20-99	Added Haunched Slab Bolsters	RAM	KFH
1	12-09-99	Revised Drilled Shaft Clearance	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No.69-105-0.93 (130)
SUPPORTS & SPACERS FOR REINF. STEEL
US-69 OVER MERRIAM LANE
AND TURKEY CREEK

BRI20 Wyandotte Co.

FHWA APPROVAL		11-17-10	APP'D	Terry L. Fleck	
DESIGNED	RAM	DETAILED	RAA	QUANTITIES	RAA
DESIGN CK.	LRR	DETAIL CK.	RAM	QUAN.CK.	RAM
				CADD	RAA
				CADD CK.	RAM

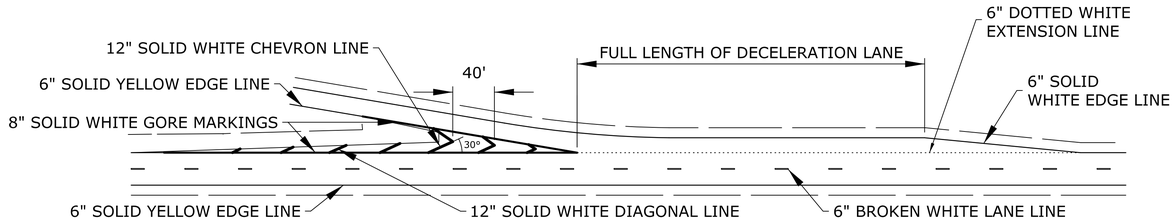
KDOT Graphics Certified 01-09-2019

Sheet No. 23

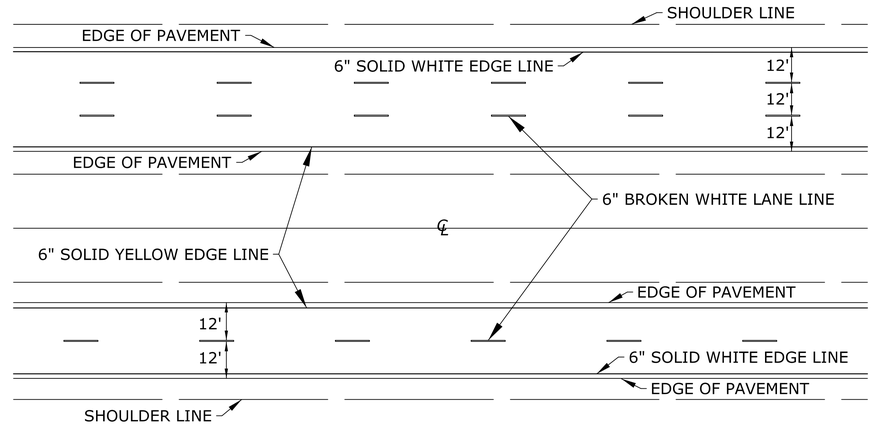
KDOT Graphics Certified

Std. Base File: bri20.dgn
Plotted By: user
File: c:\pwworking\central01\d0926726\ka49390\bss0130-16.dgn
Plot Location:
Plot Date: 01-31-19

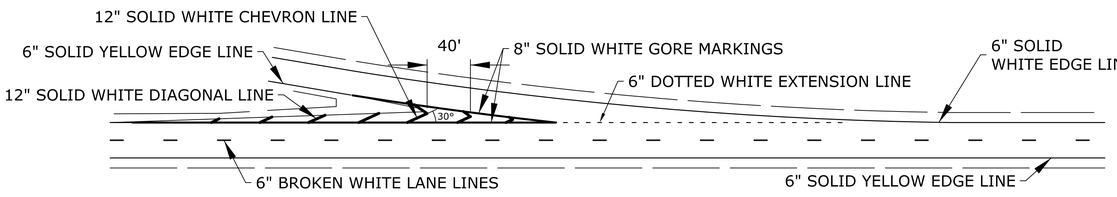
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	24	45



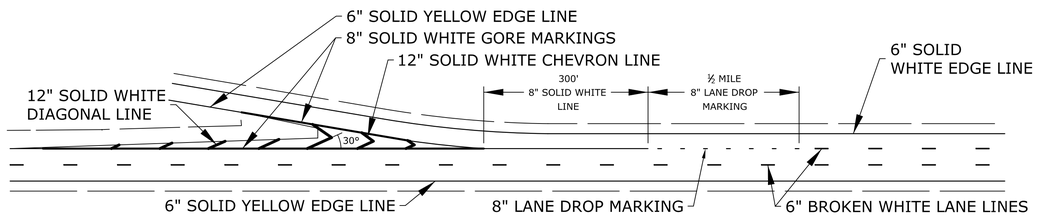
TYPICAL DECELERATION EXIT RAMP



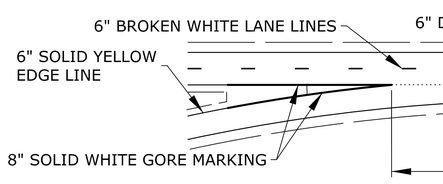
TYPICAL LANE LINE AND EDGE LINE MARKINGS FOR FOUR LANE AND SIX LANE DIVIDED HIGHWAYS



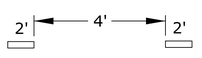
TYPICAL TAPERED EXIT RAMP



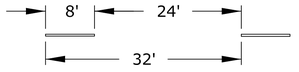
TYPICAL LANE DROP



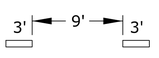
TYPICAL ACCELERATION RAMP



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



TYPICAL SPACING FOR BROKEN LINES UNLESS OTHERWISE NOTED ON PLANS.



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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL PAVEMENT MARKING DETAILS FOR MULTI-LANE DIVIDED ROADWAYS

TE307

FHWA APPROVAL			5/25/2012	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 01-16-2019

Sh. No. 24

KDOT Graphics Certified

Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central\d0966203\ka4939\01\css307-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	25	45

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
Northbound US-69		1350	350																	1350	
Southbound US-69		1850	475																	1850	
TOTALS		3200	825																	3200	

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	4025	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6")	3200	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(4")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(6")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(8")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(12")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(4")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(6")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12")		FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)( )		EACH
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING REMOVAL		FT

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION	STOP	ONLY	X-ING	SCHOOL	70	435	24	400	18
TOTALS									

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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

TE311

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

KDOT Graphics Certified 01-16-2019

Sh. No. 25

KDOT Graphics Certified

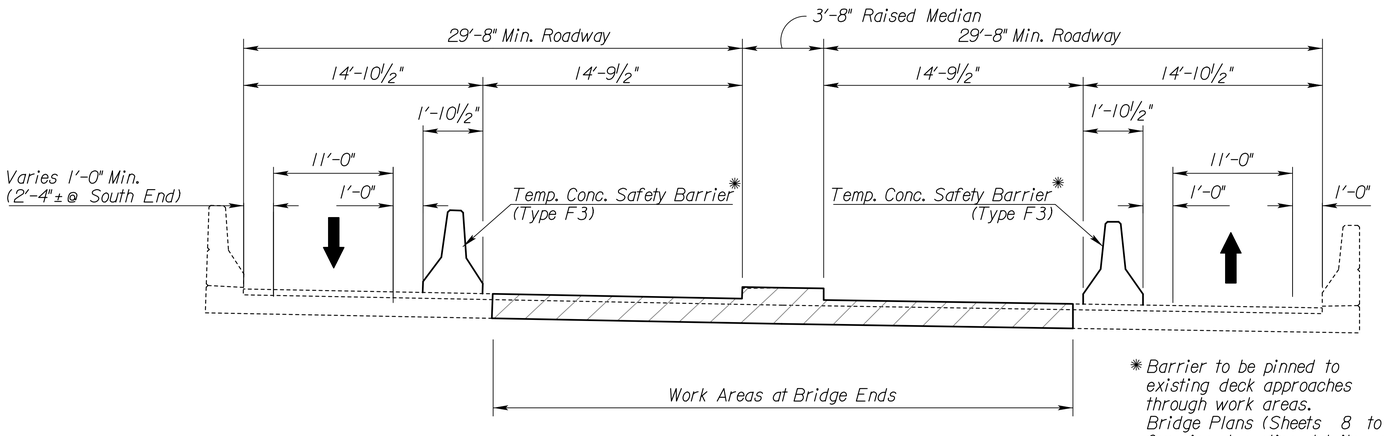
Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0966203\ka493901css311-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	26	45

TRAFFIC CONTROL GENERAL NOTES:

1) ALL EXISTING SIGNS, PAVEMENT MARKINGS AND INTERSECTION CONTROLS THAT ARE IN CONFLICT WITH THE TEMPORARY TRAFFIC CONTROL SHALL BE REMOVED OR COVERED AT THE DISCRETION OF THE ENGINEER. COVERING OF EXISTING SIGNS AND INTERSECTION CONTROLS SHALL BE SUBSIDIARY TO OTHER BID ITEMS.

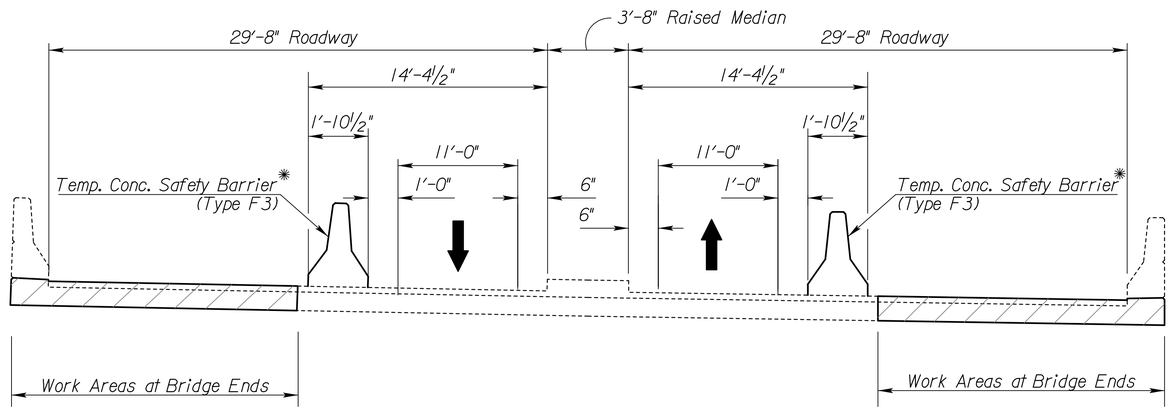
2) THE LOCATION AND SPACING BETWEEN PROPOSED SIGNS MAY BE ADJUSTED AS APPROVED BY THE ENGINEER IN ORDER TO MAXIMIZE VISIBILITY.



✳ Barrier to be pinned to existing deck approaches through work areas. Bridge Plans (Sheets 8 to 23) for pinned section details and RD622 series sheets for pinning details.

TYPICAL SECTION - PHASE 1

Note: Section is schematic. Looking North



TYPICAL SECTION - PHASE 2

Note: Section is schematic.

KANSAS DEPARTMENT OF TRANSPORTATION
US69 BRIDGE
TRAFFIC CONTROL TYPICAL SECTIONS AND GENERAL NOTES

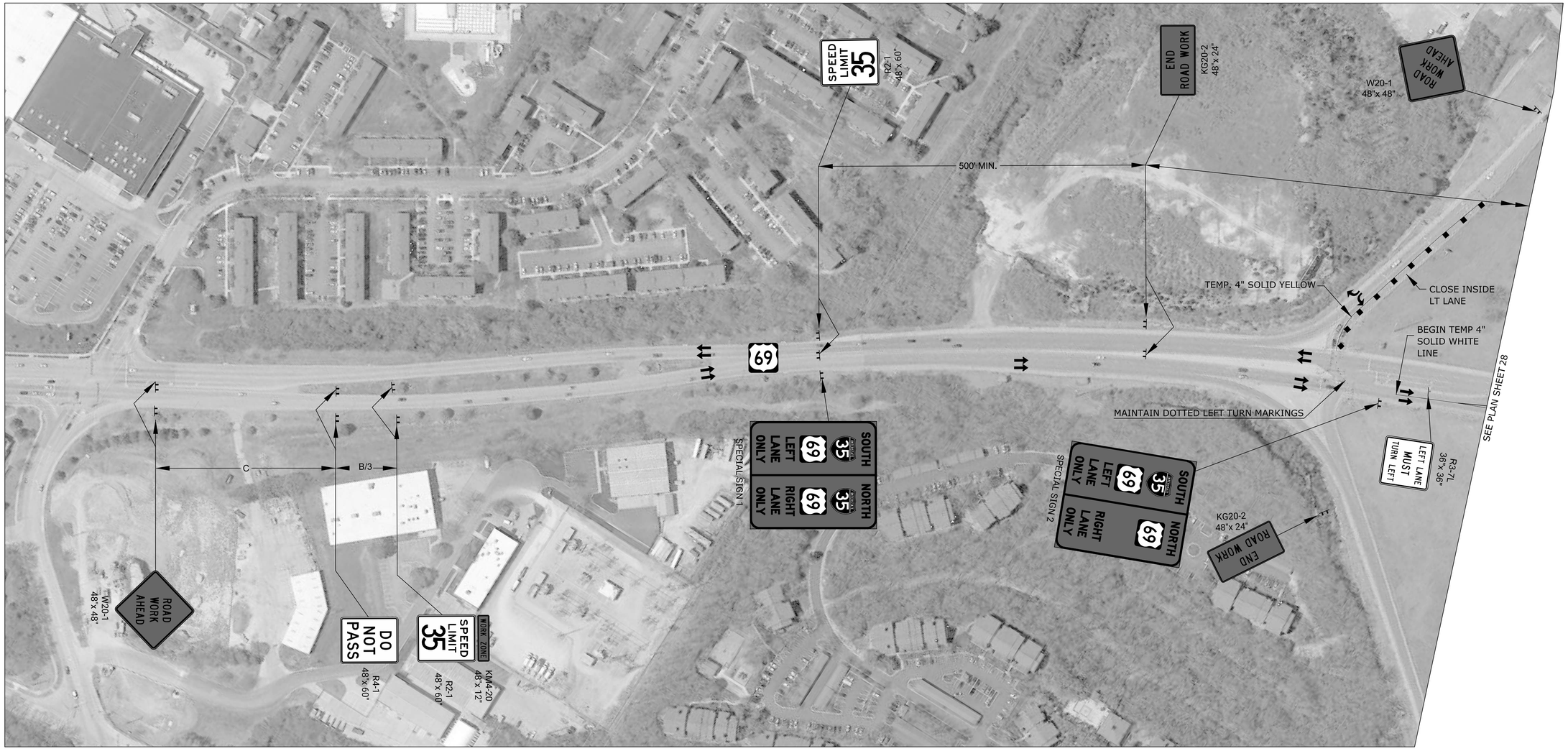
KDOT Graphics Certified 01-11-2019 Sh. No. 26

KDOT Graphics Certified

Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0966203\ka493901cts01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	27	45

APPROX. 1:100



LEGEND:

- PORTABLE CHANNELIZER
- TYPE III BARRICADE
- ARROW DISPLAY
- SIGNS
- TYPE A LIGHT
- EXISTING SIGNS
- TL2 INTERTIAL SAFTEY BARRIER (V=45MPH) SEE SHEET RD620
- TEMP. CONCRETE SAFETY BARRIER TYPE F3
- WORK AREA

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL

PHASE I

SHEET 1 OF 3

KDOT Graphics Certified 01-10-2019 Sh. No. 27

KDOT Graphics Certified

Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0966203\ka4939\01csl-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	28	45

APPROX. 1:100

DETAIL A

LEGEND:

- PORTABLE CHANNELIZER
- TYPE III BARRICADE
- ARROW DISPLAY
- SIGNS
- TYPE A LIGHT
- EXISTING SIGNS
- TL2 INTERTIAL SAFTEY BARRIER (V=45MPH) SEE SHEET RD620
- TEMP. CONCRETE SAFETY BARRIER TYPE F3
- WORK AREA

NOTES:

1. SEE SHEET 27 FOR DISTANCES.
2. SEE SHEET 26 FOR CONSTRUCTION SEQUENCING.

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL

PHASE I

SHEET 2 OF 3

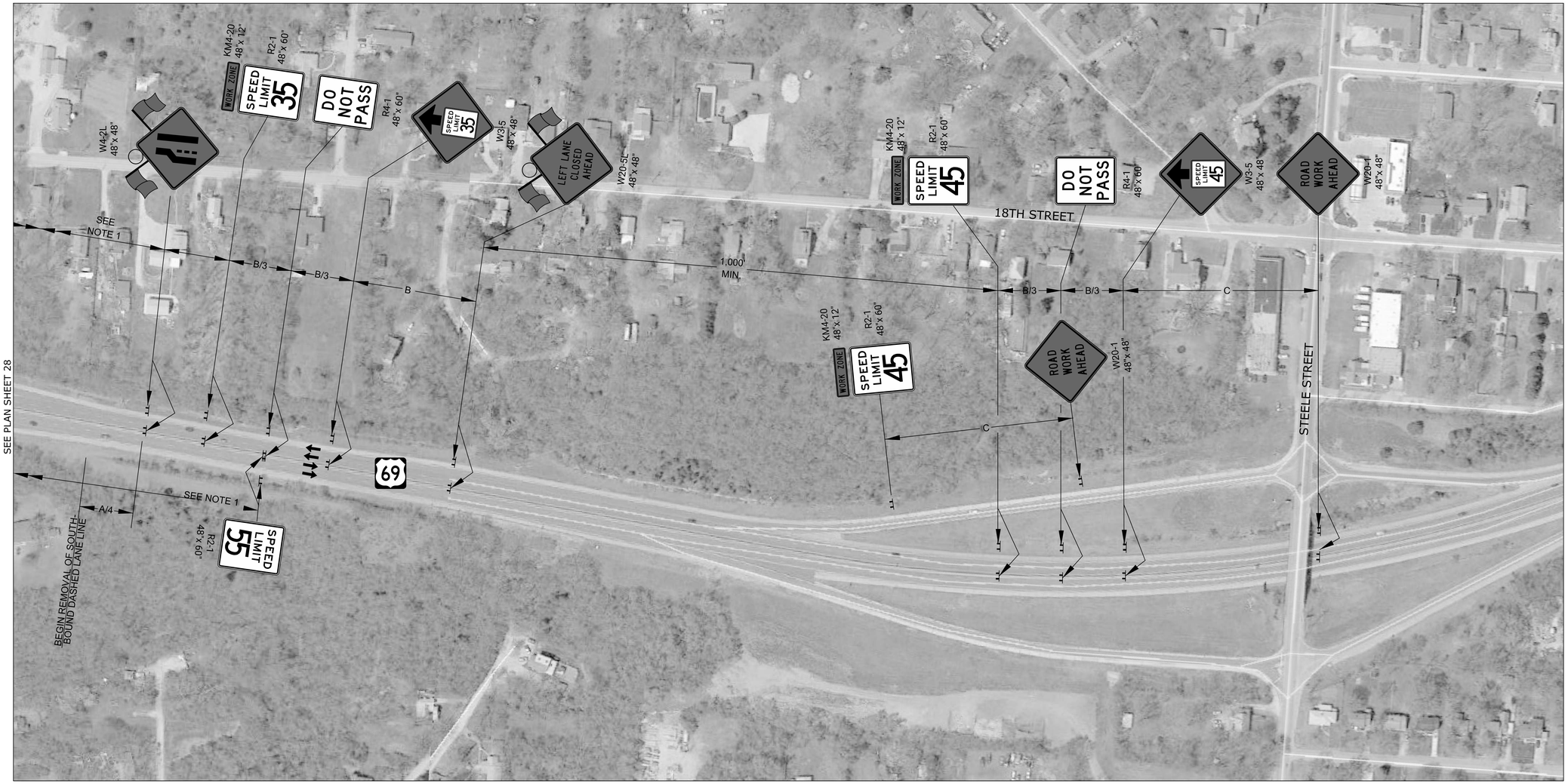
KDOT Graphics Certified 01-11-2019 Sh. No. 28

KDOT Graphics Certified

Plotted : 01-31-19
Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901csl-02.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	29	45

APPROX. 1:100



LEGEND:

- ■ PORTABLE CHANNELIZER
- TYPE III BARRICADE
- ARROW DISPLAY
- SIGNS
- TYPE A LIGHT
- EXISTING SIGNS
- TL2 INTERTIAL SAFTEY BARRIER (V=45MPH) SEE SHEET RD620
- TEMP. CONCRETE SAFETY BARRIER TYPE F3
- WORK AREA

NOTES:

1. SEE SHEET 28 FOR DISTANCES.

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL

PHASE I

SHEET 3 OF 3

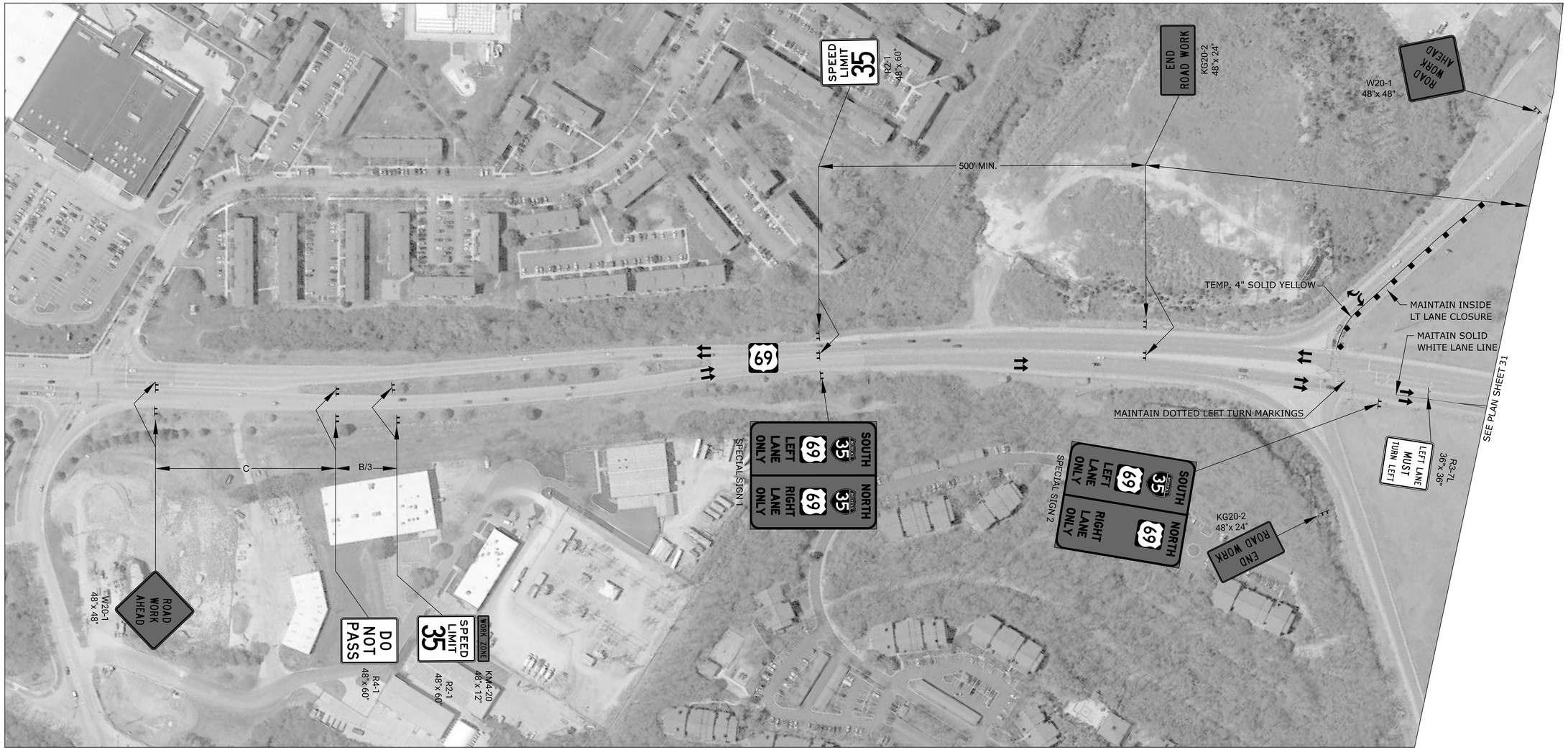
KDOT Graphics Certified 01-11-2019 Sh. No. 29

Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901csl-03.dgn
Plotted : 01-31-19

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	30	45

APPROX. 1:100



LEGEND:

- PORTABLE CHANNELIZER
- TYPE III BARRICADE
- ARROW DISPLAY
- SIGNS
- TYPE A LIGHT
- EXISTING SIGNS
- TL2 INTERTIAL SAFTEY BARRIER (V=45MPH) SEE SHEET RD620
- TEMP. CONCRETE SAFETY BARRIER TYPE F3
- WORK AREA

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL

PHASE 2

SHEET 1OF 3

KDOT Graphics Certified 01-11-2019 Sh. No. 30

KDOT Graphics Certified

Plotted : 01-31-19
Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901csl-04.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	31	45

DETAIL A

APPROX. 1:100

LEGEND:

- PORTABLE CHANNELIZER
- TYPE III BARRICADE
- ARROW DISPLAY
- SIGNS
- TYPE A LIGHT
- EXISTING SIGNS
- TL2 INTERTIAL SAFTEY BARRIER (V=45MPH) SEE SHEET RD620
- TEMP. CONCRETE SAFETY BARRIER TYPE F3
- WORK AREA

NOTES:

1. SEE SHEET 30 FOR DISTANCES.
2. SEE SHEET 26 FOR CONSTRUCTION SEQUENCING.

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL

PHASE 2

SHEET 2 OF 3

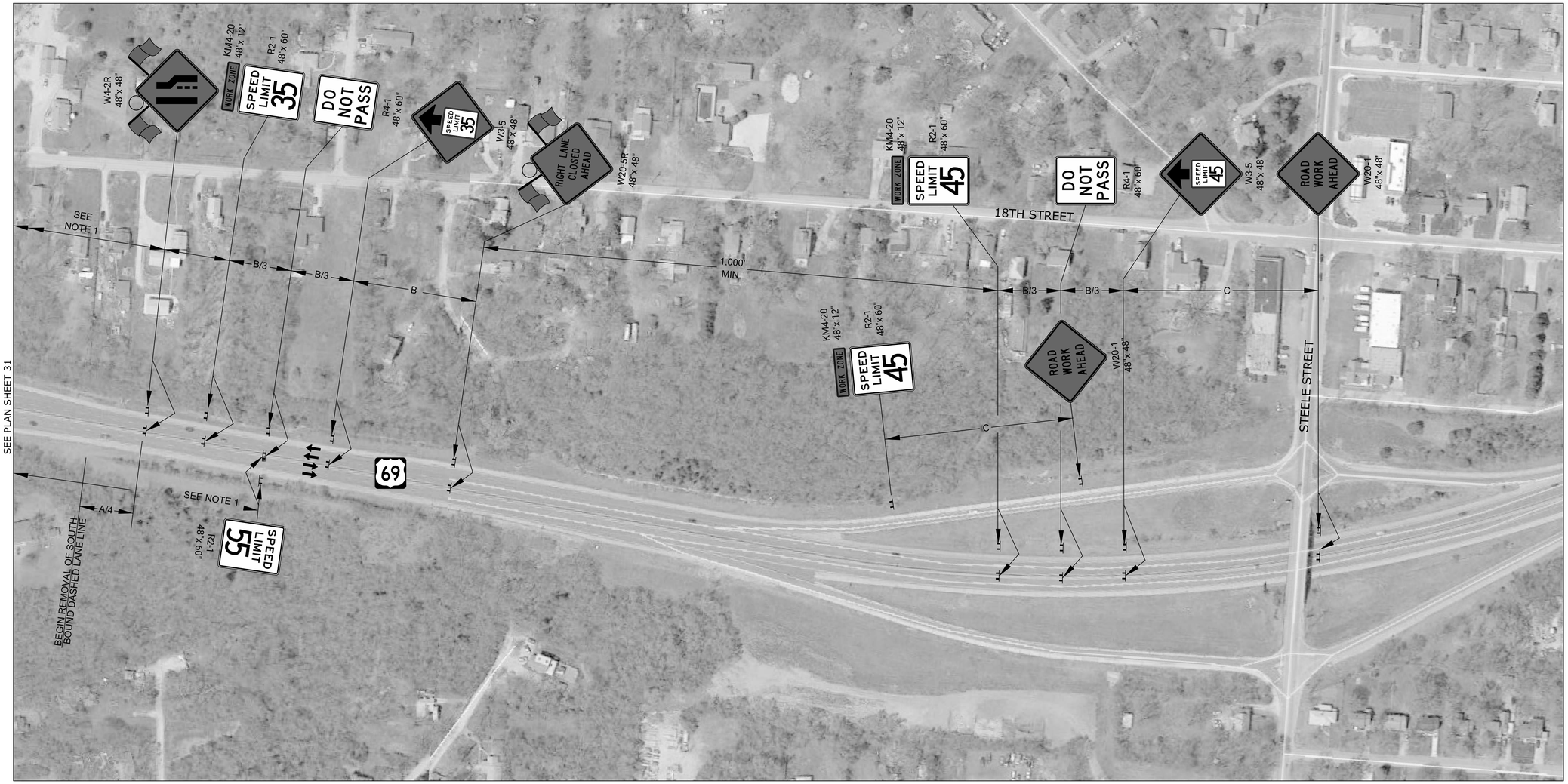
KDOT Graphics Certified 01-11-2019 Sh. No. 31

KDOT Graphics Certified

Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0966203\ka493901csl-05.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	32	45

APPROX. 1:100



LEGEND:

- ■ PORTABLE CHANNELIZER
- TYPE III BARRICADE
- ARROW DISPLAY
- SIGNS
- TYPE A LIGHT
- EXISTING SIGNS
- TL2 INTERTIAL SAFTEY BARRIER (V=45MPH) SEE SHEET RD620
- TEMP. CONCRETE SAFETY BARRIER TYPE F3
- WORK AREA

NOTES:

1. SEE SHEET 31 FOR DISTANCES.

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL

PHASE 2

SHEET 3 OF 3

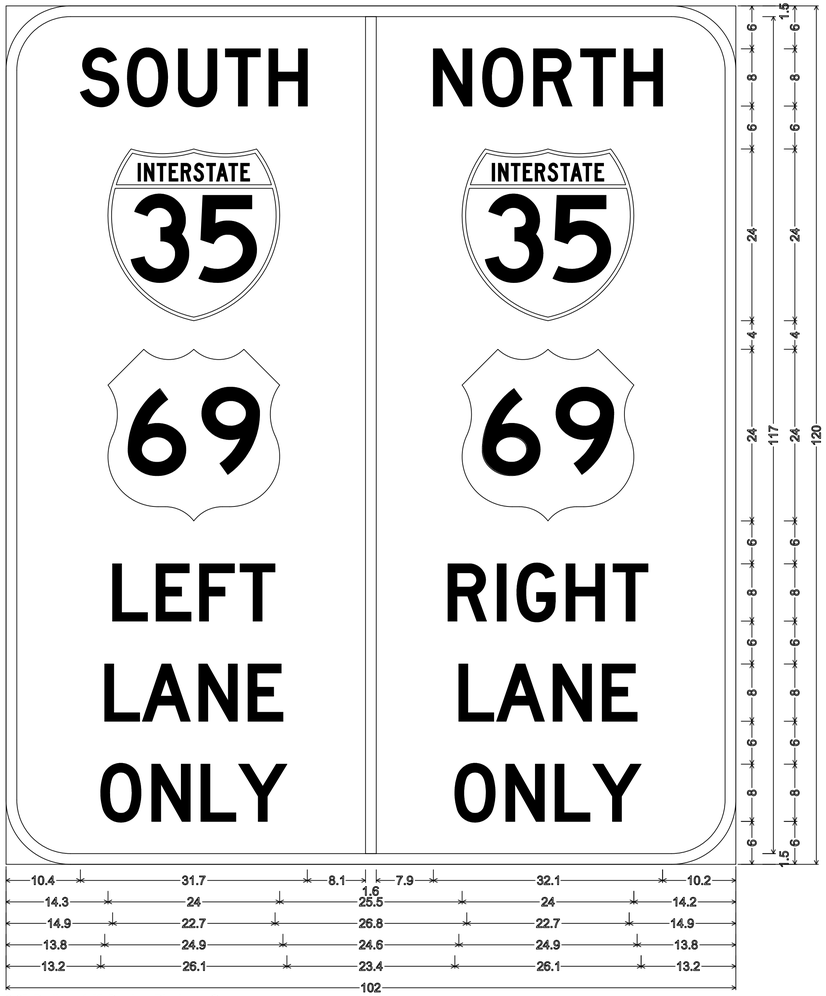
KDOT Graphics Certified 01-11-2019 Sh. No. 32

Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901csl-06.dgn
Plotted : 01-31-19

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	33	45

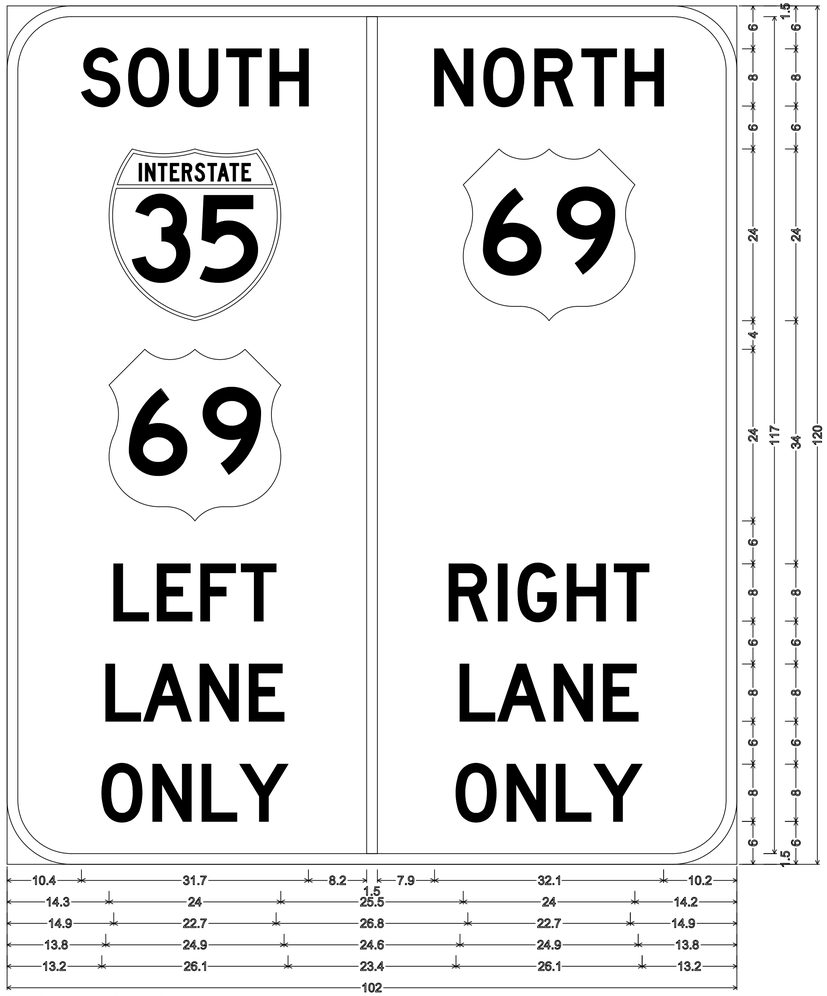
SP-01
102" X 120"



9.0" Radius, 1.5" Border, Black on Orange;
"SOUTH" D 80% spacing; "LEFT" D 80% spacing; "LANE" D 80% spacing; "ONLY" D 80% spacing;
"NORTH" D 80% spacing; "LEFT" D 80% spacing; "LANE" D 80% spacing; "ONLY" D 80% spacing;
Table of letter and object lefts.

$ 10.4	O 17.0	U 24.1	T 30.7	H 36.7	| 50.3	N 59.7	O 66.6	R 73.7	T 80.3	H 86.4	
35 14.3	35 63.8										
69 14.3	69 63.8										
L 14.9	E 21.0	F 27.1	T 32.7	L 64.4	E 70.5	F 76.6	T 82.2				
L 13.8	A 19.1	N 27.0	E 33.8	L 63.3	A 68.6	N 76.5	E 83.3				
O 13.2	N 20.4	L 27.2	Y 32.5	O 62.7	N 69.9	L 76.7	Y 82.0				

SP-02
102" X 120"



9.0" Radius, 1.5" Border, Black on Orange;
"SOUTH" D 80% spacing; "LEFT" D 80% spacing; "LANE" D 80% spacing; "ONLY" D 80% spacing;
"NORTH" D 80% spacing; "LEFT" D 80% spacing; "LANE" D 80% spacing; "ONLY" D 80% spacing;
Table of letter and object lefts.

$ 10.4	O 17.0	U 24.1	T 30.7	H 36.7	| 50.3	N 59.7	O 66.6	R 73.7	T 80.3	H 86.4	
35 14.3	69 63.8										
69 14.3	L 64.4	E 70.5	F 76.6	T 82.2							
L 14.9	E 21.0	F 27.1	T 32.7	L 63.3	A 68.6	N 76.5	E 83.3				
L 13.8	A 19.1	N 27.0	E 33.8	O 62.7	N 69.9	L 76.7	Y 82.0				
O 13.2	N 20.4	L 27.2	Y 32.5								

KANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL SIGN

DETAIL SHEET

KDOT Graphics Certified 01-11-2019

Sh. No. 33

KDOT Graphics Certified

Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901csl-07.dgn
Plotted : 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	34	45

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.

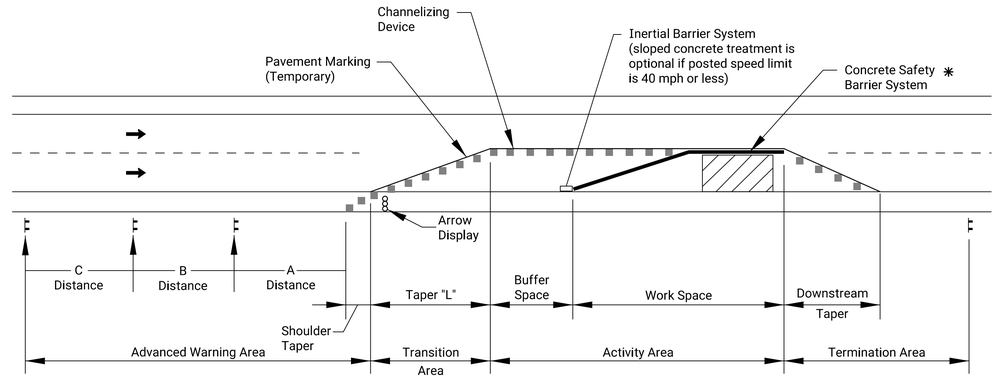
2) Minimum Lane Width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

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
3				
2	03/13/18	W8-15p usage changed to Shall	R.W.B.	E.G.K.
1	08/18/15	Channelizer spacing info	R.W.B.	K.E.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
GENERAL NOTES

TE700

FHWA APPROVAL		03/13/18	APP'D	Eric Kocher	
DESIGNED	B.A.H.	DETAILED	R.W.B	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

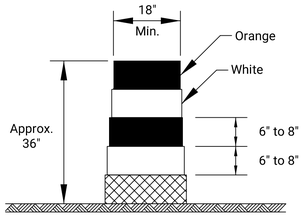
KDOT Graphics Certified 01-09-2019

Sh. No. 34

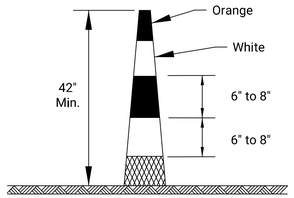
KDOT Graphics Certified

Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901css700-01.dgn
Plotted : 01-31-19

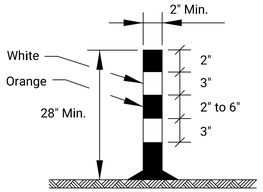
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	35	45



DRUM

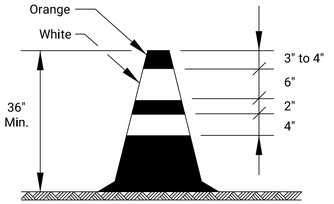


CONICAL DELINEATOR

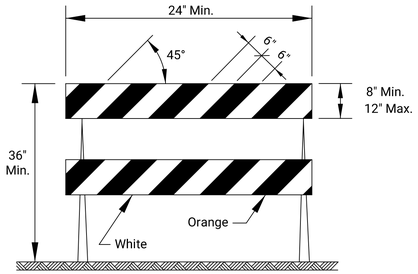


TUBULAR MARKER

Striping as shown for up to 42".

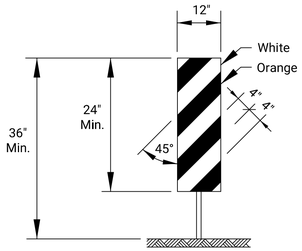


TRAFFIC CONE



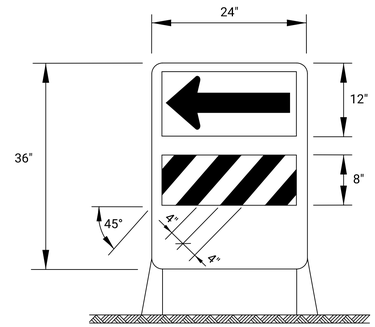
TYPE 2 BARRICADE

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



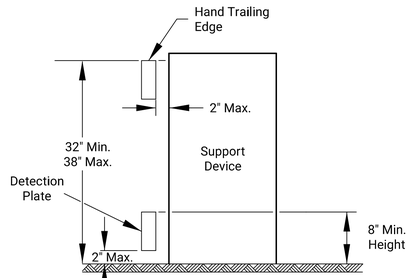
VERTICAL PANEL

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
3				
2				
1				

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 01-09-2019

Sh. No. 35

KDOT Graphics Certified

Plotted : 01-31-19
Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901css702-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	36	45

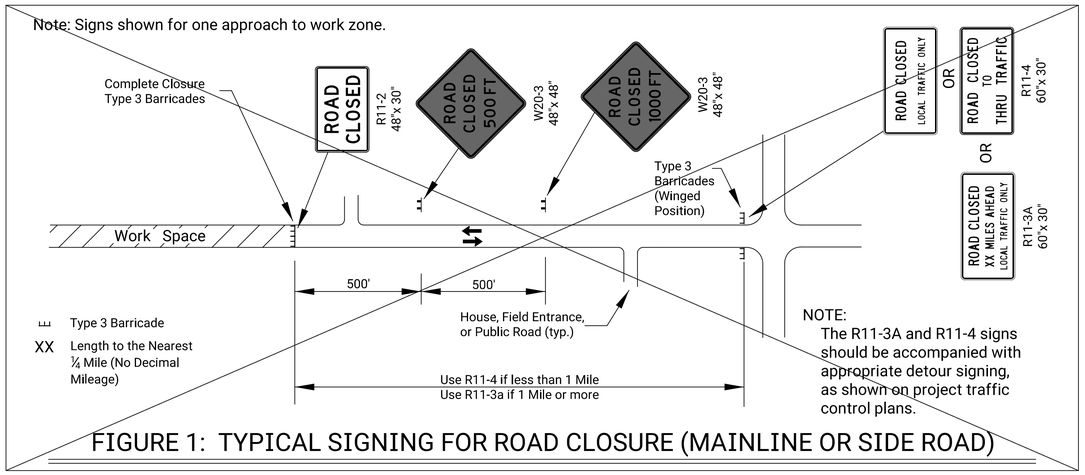


FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

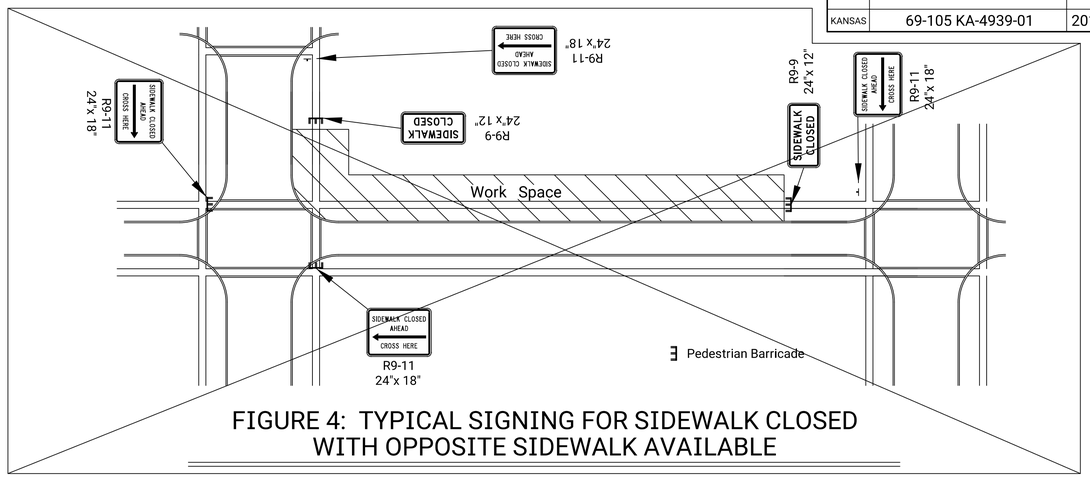


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE

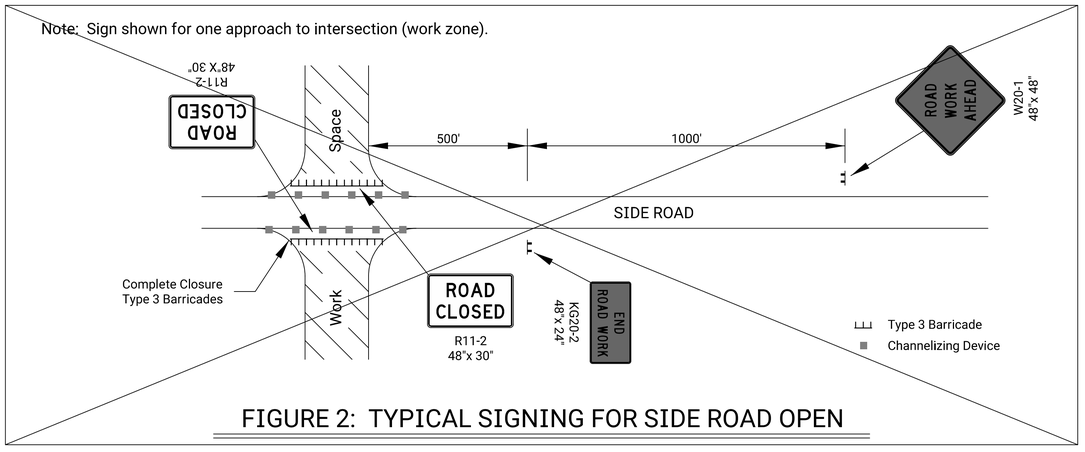


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

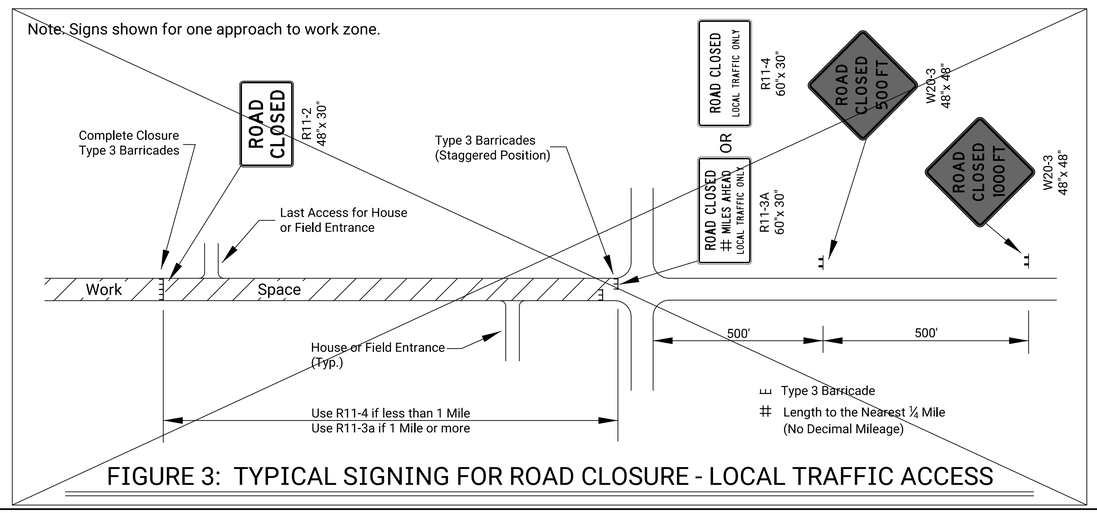
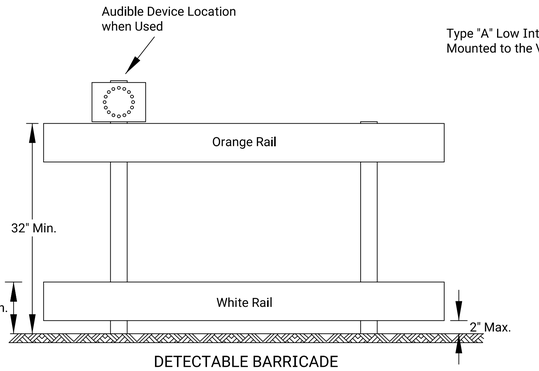
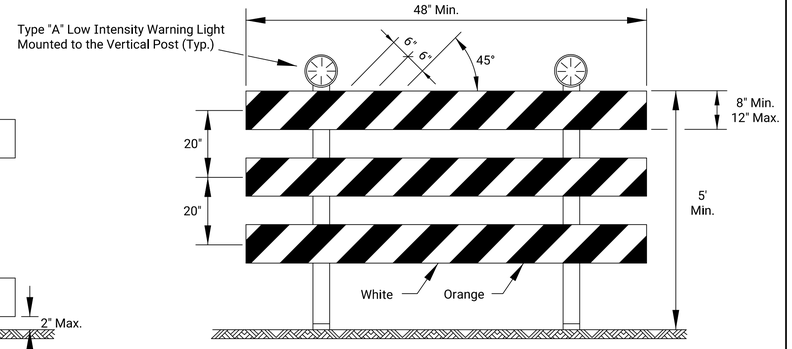


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS



DETECTABLE BARRICADE

1. Support device shall not project beyond the detection plate into the pathway.
2. Barricades shall be used to close the entire width of the pathway.
3. Do not use warning lights on pedestrian barricades.
4. Do not use warning lights on audible devices.



TYPE 3 BARRICADE WITH LIGHTS

Approved signs mounted on Type 3 barricades should not cover more than 50% of the top two rails or 33% of the total area of the three rails.

When barricades are placed end-to-end or staggered, a Type "A" low intensity warning light shall be mounted to the vertical post near each outside corner of the end barricades.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, at the point where thru traffic must detour and local traffic can proceed to the location where the roadway is completely closed, the R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) or R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY or ROAD CLOSED TO THRU TRAFFIC) sign shall be used with Type 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

The R11-4 (ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is less than 1 mile.

The R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

The words "BRIDGE OUT" (or BRIDGE CLOSED) may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

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

KDOT Graphics Certified 01-09-2019

Sh. No. 36

Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901css704-01.dgn
Plotted : 01-31-19

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	37	45

SIGN LAYOUT INFORMATION

KG20-2

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

KG20-5

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

KM4-20

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

W7-3a

Mileage to be Determined by the Engineer.

W8-17

Std. Size Expwy/Freeway
48"x 48"

W8-15

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

W8-7

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

W8-15p

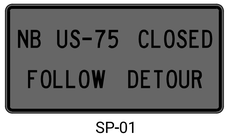
Std. Size Expwy/Freeway
30"x 24"

W8-11

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

W8-17P
(Optional)

Std. Size Expwy/Freeway
30"x 24"



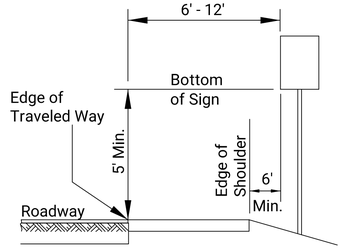
SP-01
(Special Sign)

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

SP-02
(Special Sign)

Std. Size		Expwy/Freeway	
Uppercase:	6" C	Uppercase:	10" D
Lowercase:	4.5" C	Lowercase:	8" D

All city names and street names on special signs and destination signs must have upper and lower case letters.

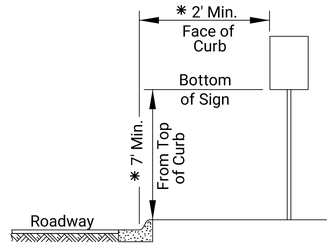


RURAL

1) Ground-mounted signs shall be mounted at a minimum height of 5' measured from the bottom of sign to the near edge of the pavement.

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

3) The height of the secondary sign mounted below another sign may be 4' measured from the bottom of the sign to the near edge of the pavement. Signs shall not overlap each other.



URBAN

1) Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.

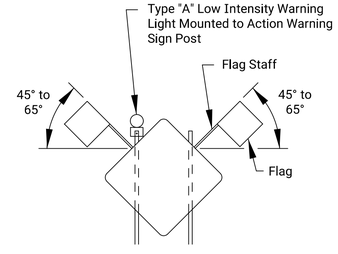
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

3) Signs mounted lower than 7' should not project more than 4" into pedestrian facilities.

4) The height from of the secondary sign mounted below another sign may be 6' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.

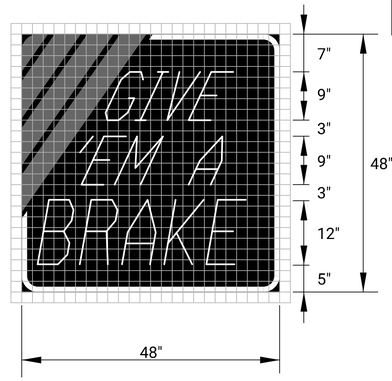
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

✱ 6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the walkway nor shall it project beyond the back of curb.



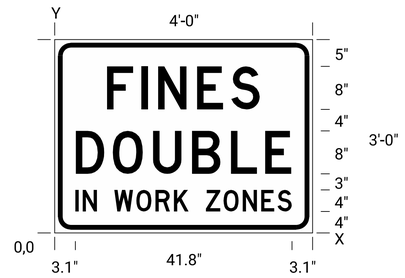
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

In the case of hitting rock when driving posts
1. Shift the sign location. Do not violate minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.



KI-104a

Sign Number	GIVE EM A BRAKE
Width x Height	4'-0" x 4'-0"
Border Width	1.0"
Corner Radius	4.0"
Stripe Width	3.0"
Mounting	Ground
Background	Type: Non-Reflective
	Color: Black
Legend/Border	Type: Reflective
	Color: White
Legend Font	Dutch 801 Roman SWC 25 Degree Slant
Stripes	Type: Reflective
	Color: Orange



KI-105a

Sign Number	FINES DOUBLE
Width x Height	4'-0" x 3'-0"
Border Width	0.9"
Corner Radius	3.0"
Mounting	Ground
Background	Type: Reflective
	Color: White
Legend/Border	Type: Non-Reflective
	Color: Black

Dimensions in inches — Spacings are to start of next letter

Y FONT	LETTER SPACINGS															HT LEN
23.0 D	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
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SIGN INFORMATION

TE710

FHWA APPROVAL		06/01/15	APP'D	Kristina Pyle	
DESIGNED	R.W.B.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 01-09-2019

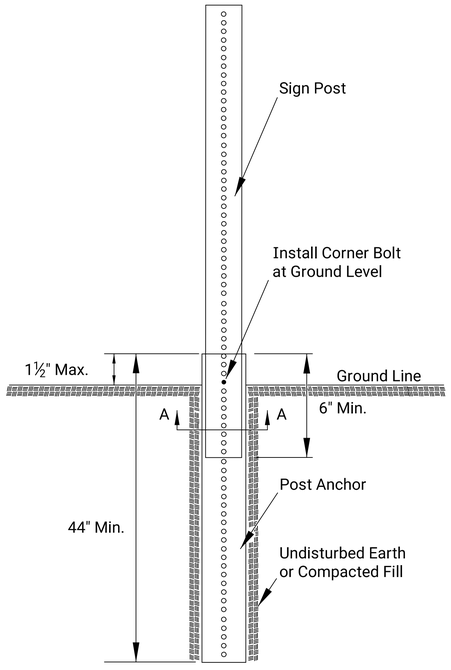
Sh. No. 37

KDOT Graphics Certified

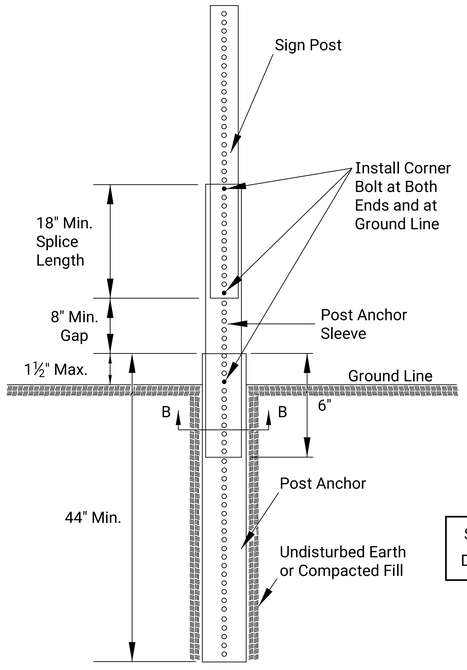
Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901css710-01.dgn
Plotted : 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	38	45

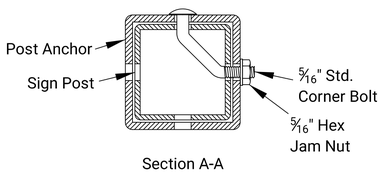
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



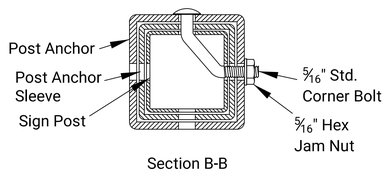
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

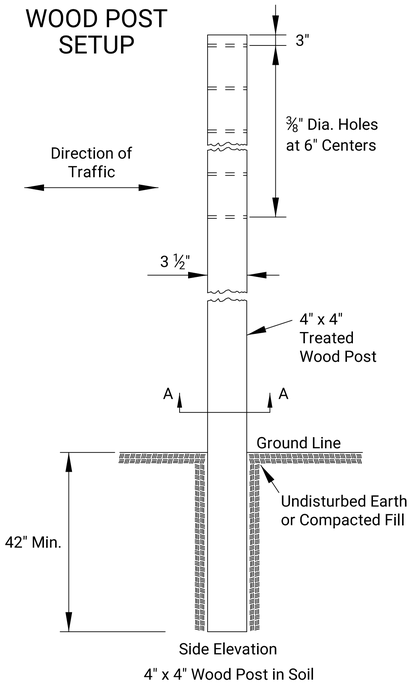


Section B-B

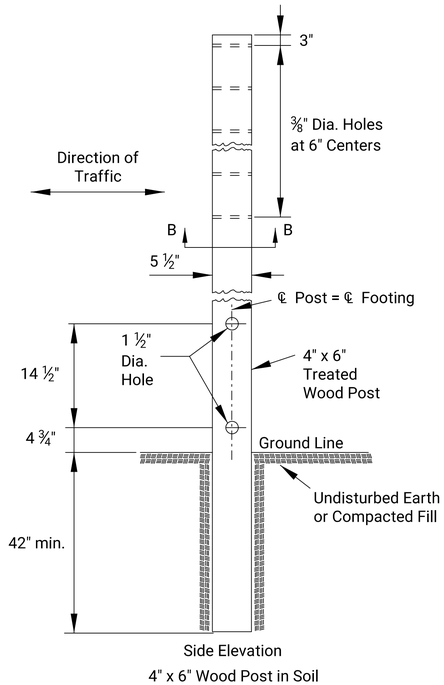
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

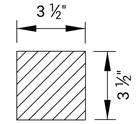
WOOD POST SETUP



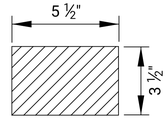
Side Elevation
4" x 4" Wood Post in Soil



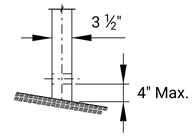
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



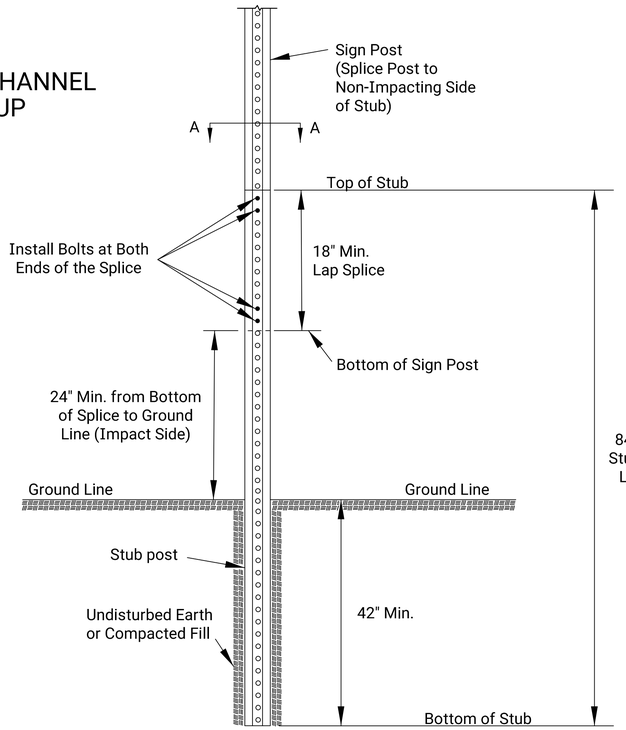
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

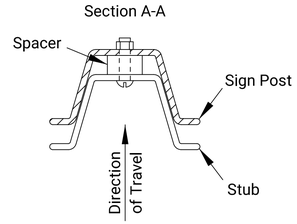
3 LB/F U-CHANNEL SETUP



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
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN POSTS

TE712

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

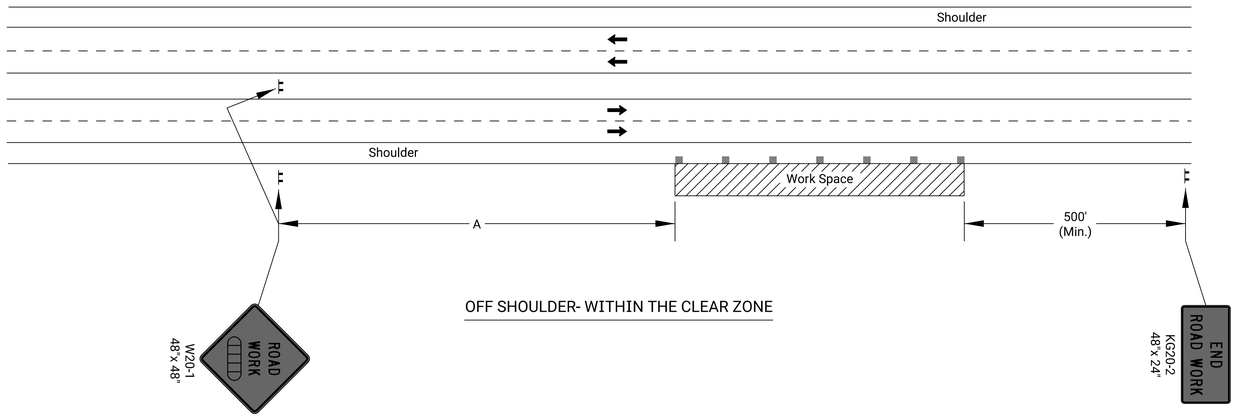
KDOT Graphics Certified 01-09-2019

Sh. No. 38

KDOT Graphics Certified

Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901css712-01.dgn
Plotted : 01-31-19

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	39	45



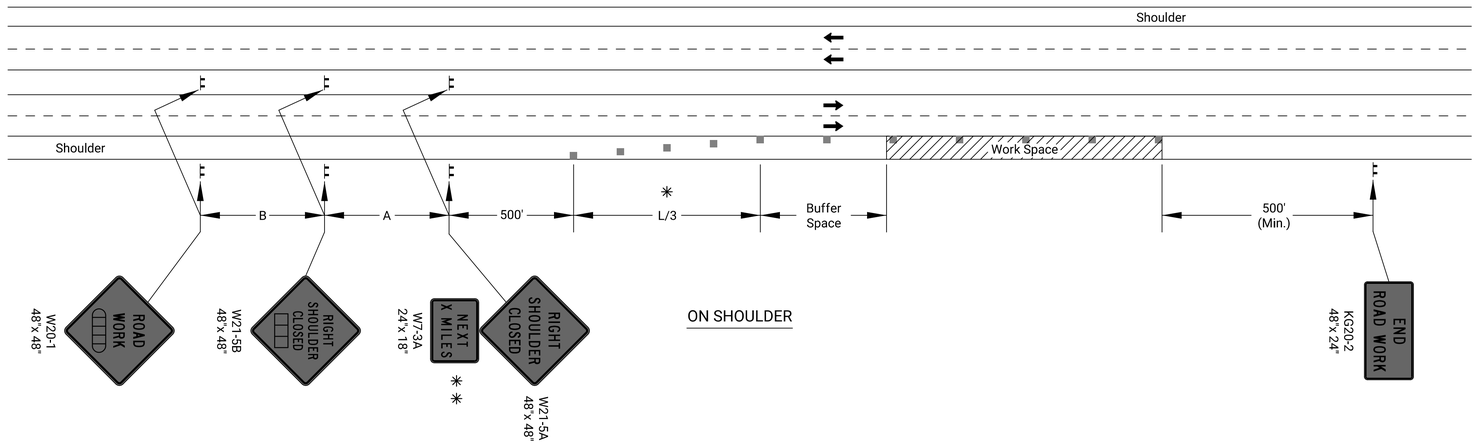
OFF SHOULDER- WITHIN THE CLEAR ZONE

Notes:

For work in the median, install signs and channelizing devices for each direction of traffic according to the applicable typical drawing.

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 a high-intensity rotating, flashing, oscillating, or strobe light is used.



ON SHOULDER

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

✳✳ Eliminate W7-3a if shoulder is closed for less than 2 miles.

X Length to the Nearest Whole Mile
■ Channelizing Device
Ahead, 1500 ft, or 1 Mile
Ahead, 1000 ft, 1500 ft or ½ Mile

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SHOULDER WORK
DIVIDED ROADWAY

TE722

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 01-15-2019

Sh. No. 39

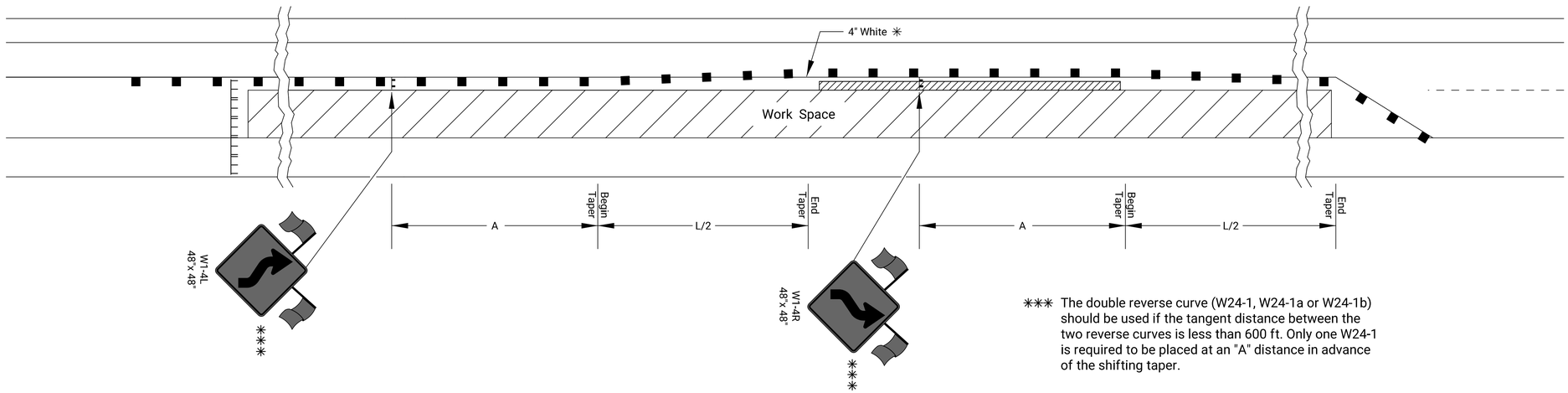
KDOT Graphics Certified

Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0966203\ka493901css722-01.dgn

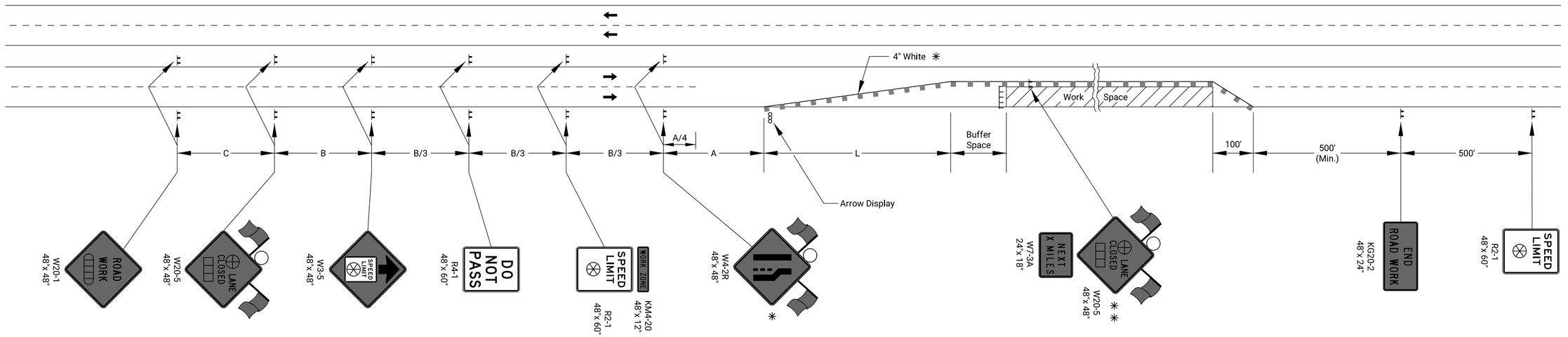
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	40	45

SHIFTING TAPER DETAIL

Add signs and devices as shown for work inside a closed lane that extends near to (or into) the open traffic lane.



✳✳✳ The double reverse curve (W24-1, W24-1a or W24-1b) should be used if the tangent distance between the two reverse curves is less than 600 ft. Only one W24-1 is required to be placed at an "A" distance in advance of the shifting taper.



- Type 3 Barricades
- X Length to the Nearest Whole Mile
- ■ Channelizing Device
- Ahead, 1500 ft, or 1 mile
- Ahead, 1000 ft, 1500 ft, or ½ mile
- ⊕ Right or Left
- ⊗ Speed to be determined by the Engineer
- ○ Type "A" Low Intensity Warning Light

✳ For left lane closures use W4-2L and yellow edge line along channelizing devices.

✳✳ The W20-5 (⊕Lane Closed) and W7-3A (Next X Miles) signs should be placed at 2 mile increments on a project of 4 miles or longer.

Left-side signs shall be omitted for a four-lane undivided highway.

One flagger should be stationed within each multi-lane roadway activity area where work is in a closed lane adjacent to traffic and not separated by a concrete safety barrier system.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1	03/13/18	W24-1 usage changed to Should	R.W.B.	E.G.K.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
LANE CLOSURE ON MULTI LANE HWY

TE744

FHWA APPROVAL			03/13/18	APP'D	Eric Kocher
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 01-09-2019

Sh. No. 40

KDOT Graphics Certified

Drawn By : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0966203\ka493901\css7744-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	41	45

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over
SPECIAL 1		1
SPECIAL 2		1
TOTAL		2

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		7	
W20-5R		2	
W20-5L		2	
W3-5		4	
W4-2R		2	
W4-2L		2	
W1-4R		1	
W1-4L		1	
W12-1		1	
R2-1			11
R4-1			6
R3-7L	1		
KI-104a		2	
KI-105a		2	
KM4-20	7		
KG20-2	4		
Total	12	28	17

Barricades ✳	
Type 3 (4' to 12')	Pedestrian
2	

Channelizing Devices ✳		
Fixed	Portable	Pedestrian
	150	

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	10
Work Zone Warning Light (Red Type "B" High Intensity)	
Arrow Display	1
Portable Changeable Message Signs	2

Recapitulation of Quantities		
Item	Quantity	Unit
Work Zone Signs (0 to 9.25 Sq.Ft.)	1620	Each Per Day
Work Zone Signs (9.26 to 16.25 Sq.Ft.)	3780	Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)	2300	Each Per Day
Work Zone Barricades (Type 3 - 4' to 12')	270	Each Per Day
Work Zone Barricades (Pedestrian)		Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)	20250	Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)	1350	Each Per Day
Work Zone Warning Light (Red Type "B" High Intensity)		Each Per Day
Arrow Display	140	Each Per Day
Portable Changeable Message Sign	270	Each Per Day
Pavement Marking (Temporary)		
4" Solid (Type I)	140.0	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	7225	Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)	2	Each
Rigid Raised Pavement Marker (Type I)		Each
Rigid Raised Pavement Marker (Type II)		Each
Traffic Signal Installation (Temporary)		Lump Sum
Traffic Control (Initial Set Up)	Lump Sum	Lump Sum
Traffic Control		Lump Sum
Flagger (Set Price)	1	Hour

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

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.

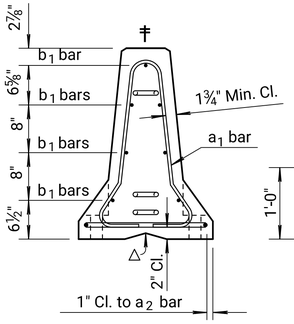
KDOT Graphics Certified 01-31-2019

Sh. No. 41

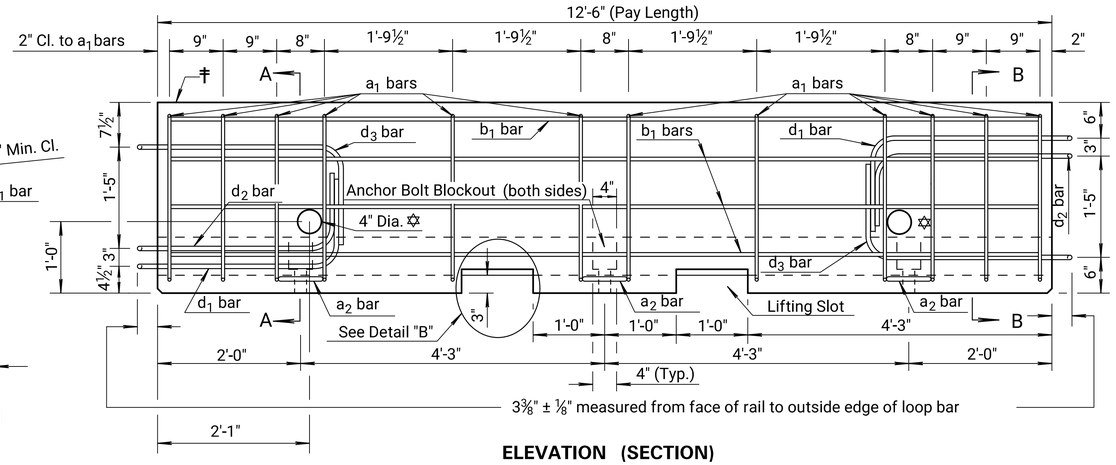
KDOT Graphics Certified

Drawn By: : user
Plotted : 01-31-19
File : c:\pwworking\central01\d0966203\ka493901css795-01.dgn

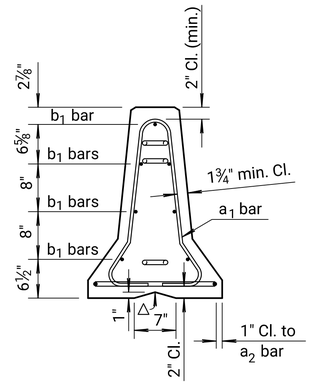
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	42	45



SECTION A-A
TYPICAL SECTION
(Stirrup Placement)

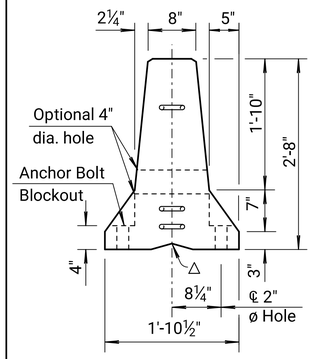


ELEVATION (SECTION)

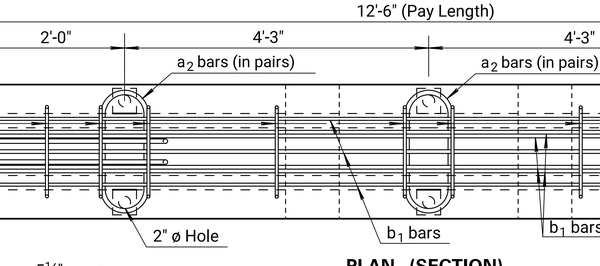


SECTION B-B
TYPICAL SECTION
(Stirrup Placement)

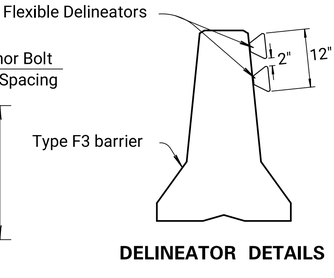
✝ Marked End
✡ 4" diameter - 11 gauge steel round mechanical tubing sleeve. These holes are optional.
△ V Notch is optional



END VIEW



PLAN (SECTION)



DELINEATOR DETAILS

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.

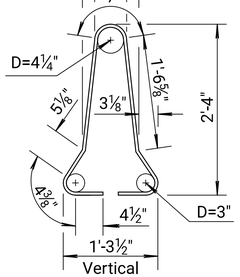
Delineators shall be attached to bridge rail or other structures in construction zones when roadway is narrowed and traffic is adjacent to the structure. The method and location of placement shall be similar to permanent barrier delineation.

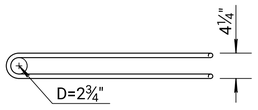
When traffic flow is in one direction, the delineators shall be yellow when used on the left, white when used on the right. When traffic flow is in both directions delineators shall be placed back-to-back, and shall correspond to the color of the edge line.

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).

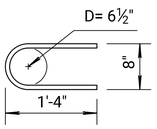
If necessary, include Standard Drawing RD622A for Taper Section, Standard drawing RD622B for anchor and tie down details, Standard Drawing RD622C for Bridges with thermal expansion of 1½" or greater and Standard Drawing RD622D for Barrier Layouts.

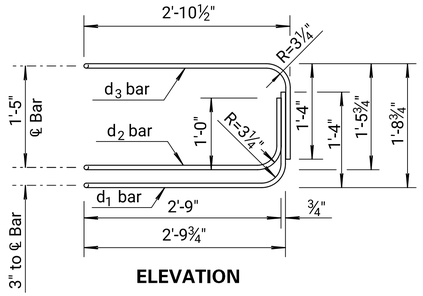
The Contractor shall be responsible for maintaining a clear area, shown as dimension "A" on Standard Drawing RD622B. The clear area is located behind the Temporary Concrete Safety Barrier and shall be kept free of any equipment, material stockpiles or other obstacles. For non-anchored roadway applications, dimension "A" shall be a minimum of 2'-0".



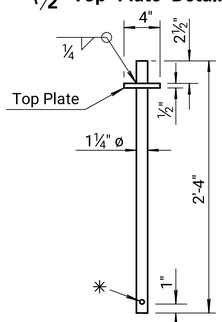


PLAN
LOOP BAR ASSEMBLY
(Marked end shown, invert for other end)
(Material as stated in General Notes)

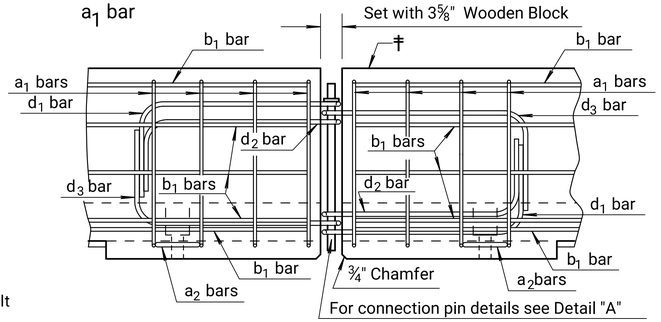




ELEVATION



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.

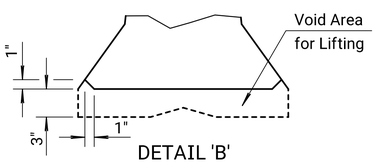


DETAILS OF BARRIER CONNECTION

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.)



DETAIL 'B'
LIFTING SLOT DETAIL
(1" Chamfer to prevent spalling)

NOTE: At no time shall the barriers be lifted, moved, etc. by use of the loop bars: d_1, d_2 or d_3.

NO.	DATE	REVISIONS	BY	APP'D
7	9-11-17	Revised Markers	A.L.R.	S.W.K.
6	7-17-17	Revised General Note	A.L.R.	S.W.K.
5	8-27-15	Added Note, Pay Length	K.E.K.	S.W.K.
4	5-17-13	Revised General Note, Clear Area	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE SAFETY BARRIER TYPE F3

RD 622

FHWA APPROVAL	3-5-18	APP'D. Scott W. King	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 12-11-2018 Sh. No. 42

KDOT Graphics Certified

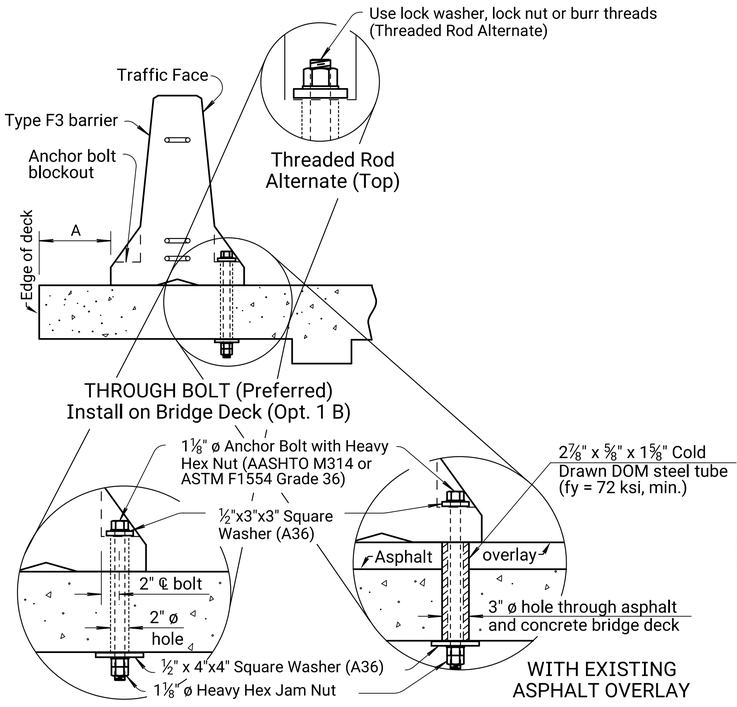
Plotted :01-31-19
Drawn By : user
File : c:\pwworking\central01\d0966203\ka4939901rd622-01.dgn

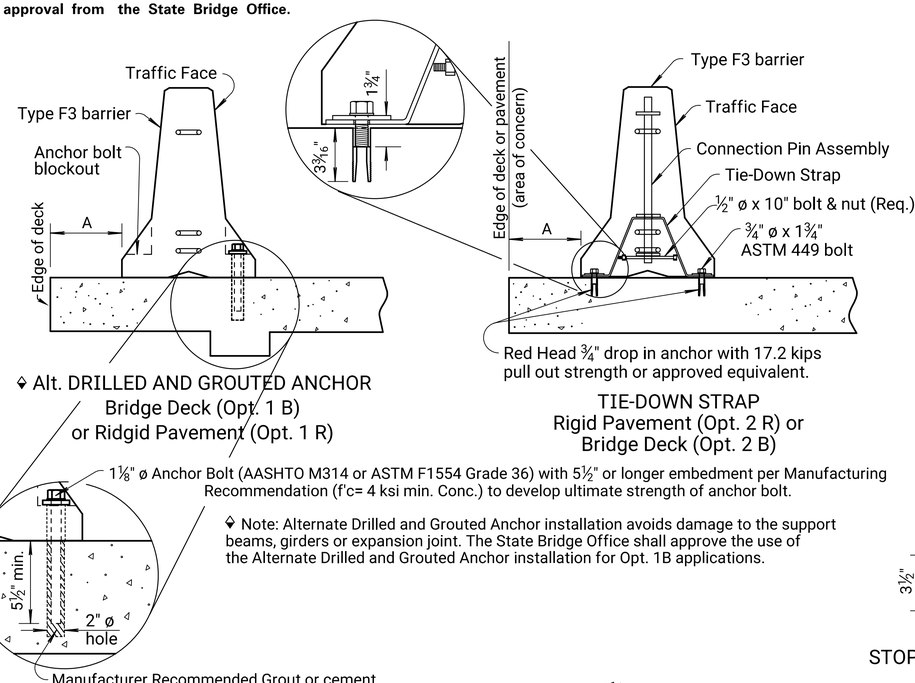
Option	BRIDGE DECK APPLICATION	
1B	0' ≤ A < 2'	Anchor each barrier with 3 bolts on traffic face
2B	△ 2' ≤ A < 4'	Anchor with Tie-down strap connector
3B	A ≥ 4'	No anchorage required unless shown on plans

Option	ROAD PAVEMENT APPLICATION	
1R	0" ≤ A < 2'	Anchor each barrier with 3-bolts on traffic face
2R	6" ≤ A < 2'	Anchor with Tie-down Strap or Staked Down (flexible)
3R	A ≥ 2'	No anchorage required

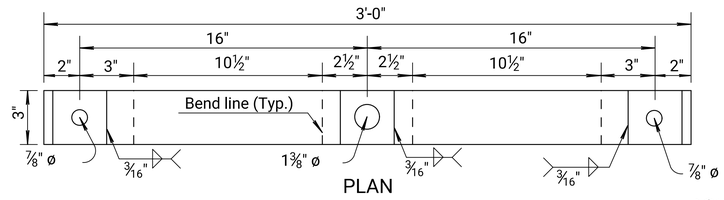
△ **This dimension may be reduced to 1' on a newly constructed Bridge Deck.**

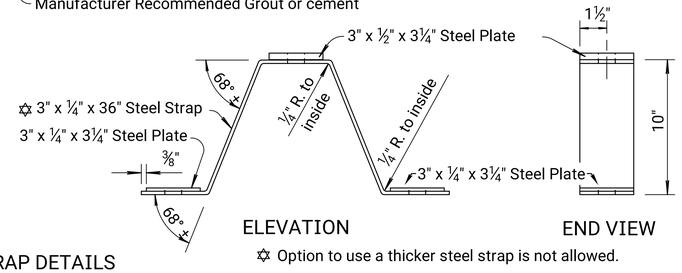
Note: BRIDGE APPLICATION (Opt. 1 B) may be used in lieu of (Opt. 2 B) with prior approval from the State Bridge Office.





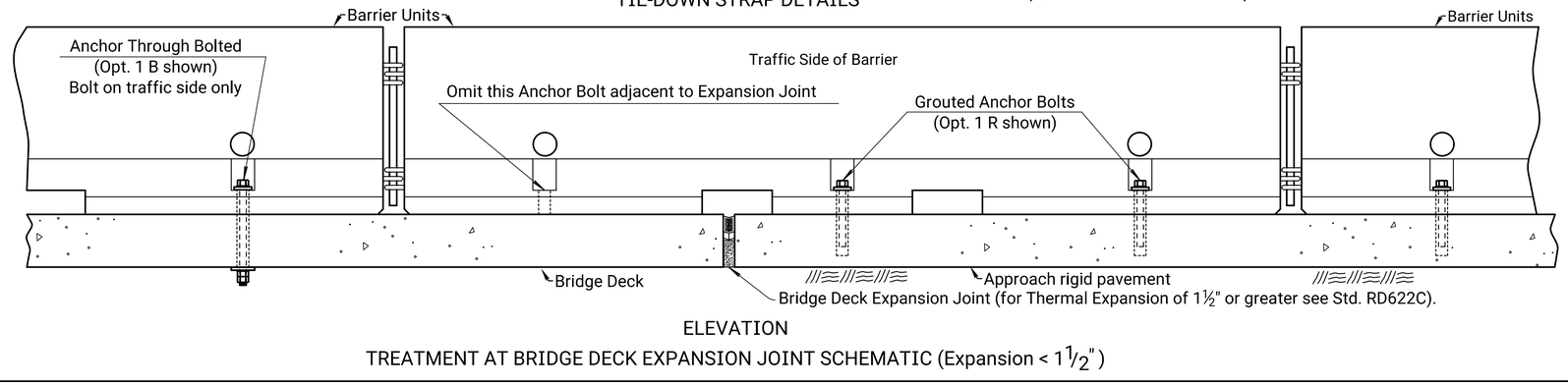
♦ Note: Alternate Drilled and Grouted Anchor installation avoids damage to the support beams, girders or expansion joint. The State Bridge Office shall approve the use of the Alternate Drilled and Grouted Anchor installation for Opt. 1B applications.





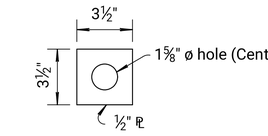
TIE-DOWN STRAP DETAILS

✡ Option to use a thicker steel strap is not allowed.

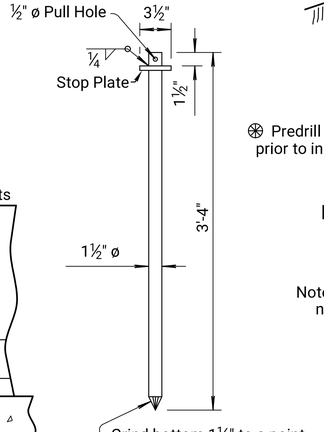


ELEVATION

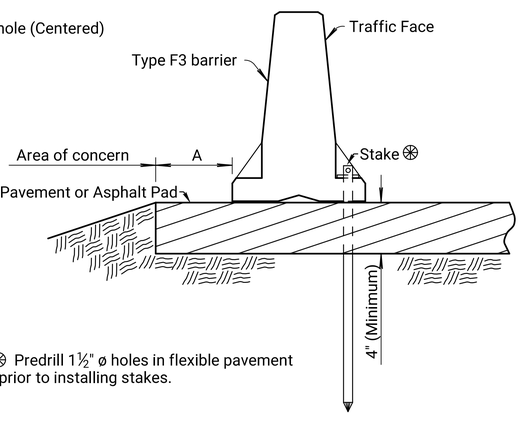
TREATMENT AT BRIDGE DECK EXPANSION JOINT SCHEMATIC (Expansion < $1\frac{1}{2}$")



STOP PLATE DETAIL



STAKE DETAIL



✻ Predrill 1½" ø holes in flexible pavement prior to installing stakes.

FLEXIBLE PAVEMENT ROAD APPLICATION
ELEVATION - STAKED DOWN (Opt. 2 R)

Note: See Std. Drawing No. RD622 for details and quantities not shown on this sheet.

NO.	DATE	REVISIONS	BY	APP'D
6	12-31-13	Rev. Note (Alt. Drill. & Grout. Anch.)	S.W.K.	J.O.B.
5	6-27-11	Revised General Note	S.W.K.	J.O.B.
4	9-14-10	Add. through bolt with asphalt over.	S.W.K.	J.O.B.
3	2-2-10	Rev. Anchor to Tie-down callout	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE SAFETY BARRIER TYPE F3 ANCHORAGE

RD 622B

FHWA APPROVAL	9-4-14	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 12-11-2018 Sh. No. 43

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	43	45

GENERAL NOTES:

INSTALLATION: Holes into the pavement to anchor the concrete safety barrier may be drilled after positioning barrier. 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 and materials required for the installation of the anchors are subsidiary to the bid item "Concrete Safety Barrier".

UTILITIES & STRUCTURES (Stakes) Verify buried utilities and structures within stake depth. If conflicts between stake and 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 three anchor bolts or asphalt pins per barrier on the traffic side except on transition barrier as shown.

BARRIER REMOVAL: Remove grouted or wedge 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 and remove the core, prepare the hole by removing any dust and debris. Fill hole with material that meets KDOT Prequalified "Non-shrink grouts for grouting anchor bolts and reinforcing into previously poured concrete". Follow the manufacturer's procedures for mixing, hole preparation and curing.
To fill through bolt anchor, remove and 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 and materials required to remove and patch anchor holes is subsidiary to the bid item "Concrete Safety Barrier".

SIGNING: For sign spacing, traffic control device details and reference notes, see Index of Sheets.

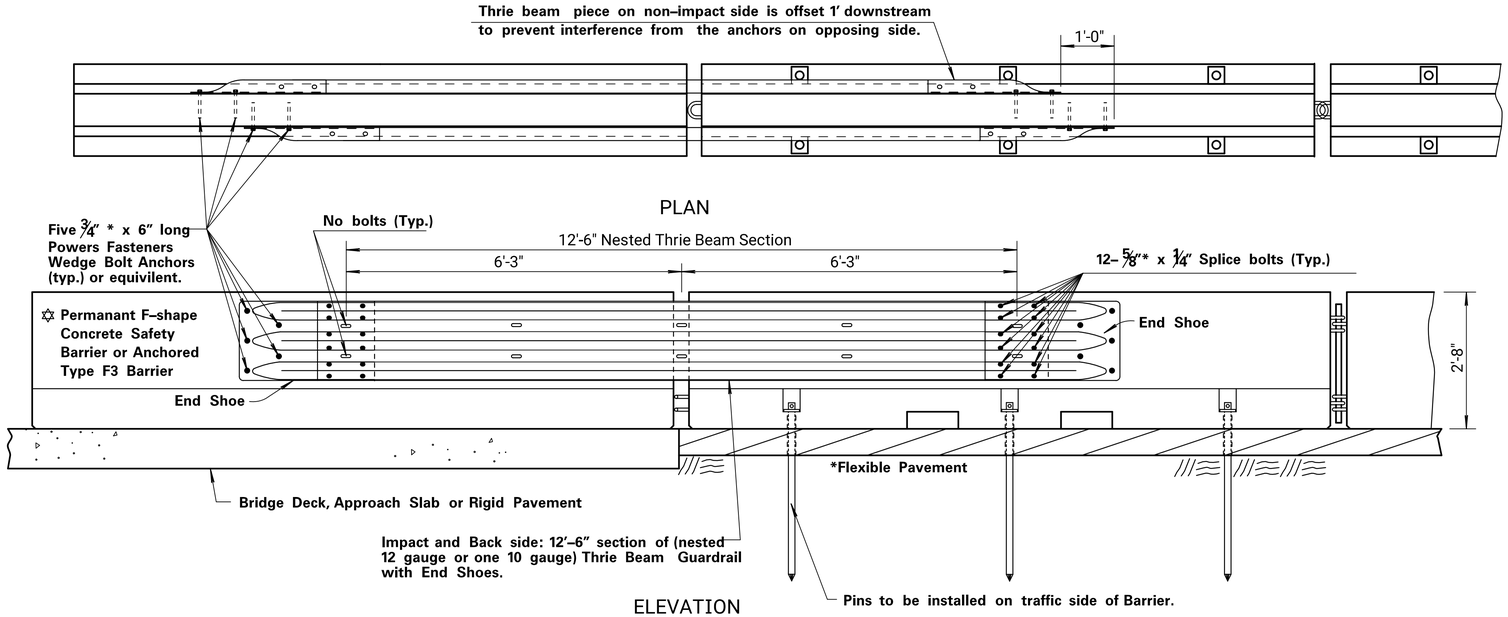
TEMPORARY BARRIERS: Temporary Barriers shown in the details of this drawing are not allowed for permanent installations.
See RD622D for transition details between anchored and free-standing barriers.

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.

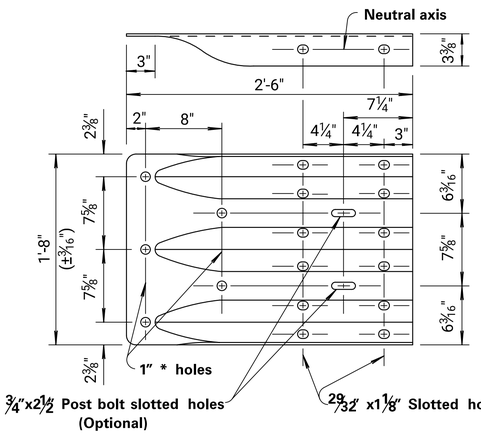
Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901rd622b-01.dgn
Plotted :01-31-19

KDOT Graphics Certified

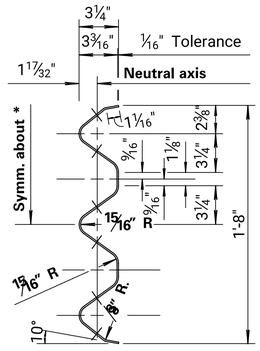
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	44	45



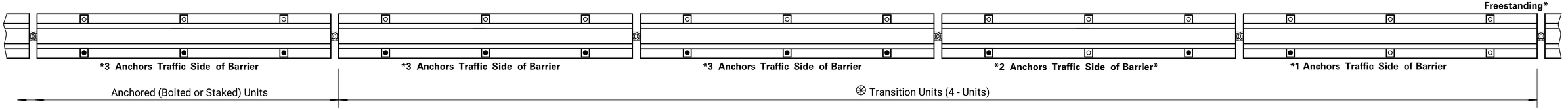
GENERAL NOTES:
The work and materials required for the installation & removal of the guardrail connection and barrier anchors as shown on this sheet shall be subsidiary to the "Concrete Safety Barrier" bid item.



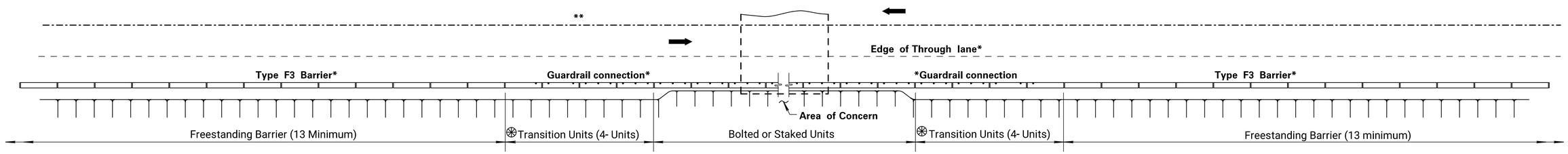
TERMINAL CONNECTOR



THRU RAIL ELEMENT
TYPICAL THRIE BEAM



PLAN (Transition Units)



✡ APPROACH TRANSITION FROM FREESTANDIING TO ANCHORED (BOLTED OR STAKED) TYPE F-3 CONCRETE BARRIER

✡ TYPICAL INSTALLATIONS

1) Type F3 barrier anchored to rigid pavement with bolted connection or bolted to a bridge deck.
–the transition between this anchored barrier and the freestanding needs the transition barriers plus guardrail as shown above.

2) Permanent F–shape barrier
–the transition between this permanent barrier and the freestanding Type F3 needs the transition barriers plus guardrail as shown above.

3) Type F3 barrier anchored with straps on rigid pavement or a bridge deck
–the transition between this anchored barrier and the freestanding does not need transition barriers and does not need guardrail.

4) Type F3 barrier pinned/staked to asphalt pavement
–the transition between this anchored barrier and the freestanding needs the transition barriers but NO guardrail.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1	1-30-07	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	01-19-07	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 12-11-2018

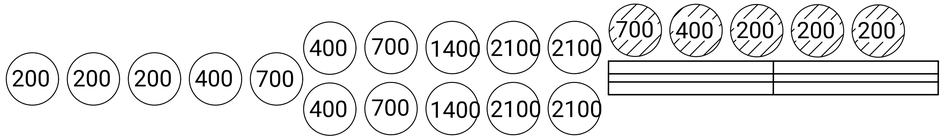
Sh. No. 44

KDOT Graphics Certified

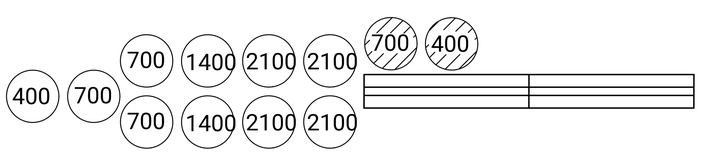
Plotted :01-31-19
Drawn By : user
File : c:\pwworking\central01\d0966203\ka493901rd622d-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	69-105 KA-4939-01	2019	45	45

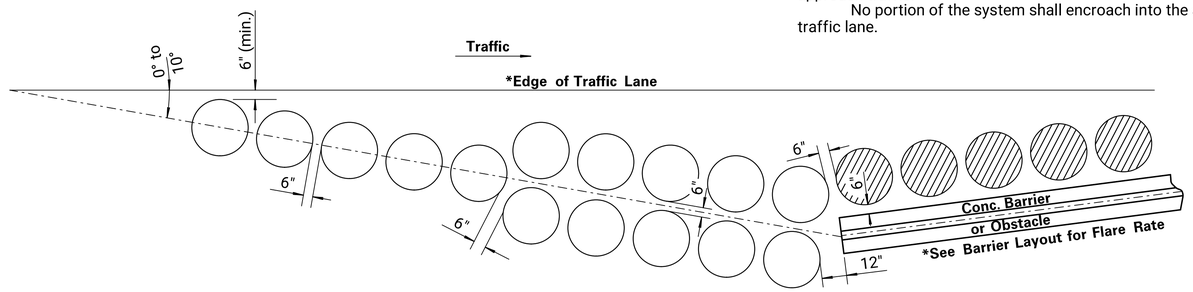
HIGH SPEED TL-3
(V > 45 MPH)



LOW SPEED TL-2
(V ≤ 45 MPH)



INERTIAL BARRIER SYSTEM			
Station	Side	Design Speed	Comments
S. Bd. Br. N. End		45	
N. Bd. Br. S. End		45	

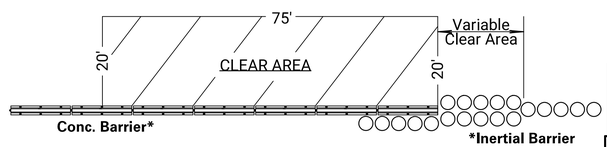


TYPICAL PLAN of INERTIAL BARRIER

When two–way traffic is adjacent to only one side of Concrete Barrier or Obstacle, these additional modules will be placed on the Traffic Side of Concrete Barrier or Obstacle. Traffic adjacent to both sides of the Concrete Barrier or Obstacle requires an additional set of modules each side if approach traffic is exposed to the back portion of the Inertial Barrier. These additional modules are not required along the sides of Concrete Barrier or Obstacle when it's location is outside the Clear Zone or one–way directional traffic.

***Fill module to correct weight for its position in array.**

PLAN
Replacement Module



PLAN - CLEAR AREA

GENERAL NOTE

This drawing details general configurations for Inertial Barrier Systems. Some project specific conditions may require variations which are designed to meet prevailing criteria.

Use Inertial Barrier System consisting of the units as shown for the specified design speed, all hardware and attachments.

Install Inertial Barrier System on a flat, stable base with cross-slope no steeper than 10: 1. See Manufacturer's recommendations for module materials and method of installation.

See standard specifications for mixture to fill modules requirements.

Provide a 6" spacing between modules and one foot between the end of concrete barrier or other rigid object.

When installed as part of project traffic control, the bid item "Inertial Barrier" includes the original installation and required relocations.

Keep available replacement modules to replace any size module used on site, Engineer's direction.

Inertial Barrier System modules damaged by the Contractor during relocation of Inertial Barrier System are replaced at the Contractor's expense.

Module weights shown are in pounds.

Install 270 square inches of Type II High Performance (vertical, rectangular or diamond shape) reflective sheeting on first module of Inertial Barrier System facing traffic.

Where sufficient space is available the Inertial Barrier System may be aligned at an angle, not to exceed 10°, in the direction of approach traffic.

No portion of the system shall encroach into the approach traffic lane.

NO.	DATE	REVISIONS	BY	APP'D
8	1-27-15	Rev. Layouts (TL-2/TL-3)	K.E.K.	J.O.B.
7	5-17-13	Added Detail, Clear Area	S.W.K.	J.O.B.
6	2-3-12	Revised General Note	S.W.K.	J.O.B.
5	6-27-11	Revised notes & Typical Plan detail	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

INERTIAL BARRIER
(TL2 or TL3)

RD 620

FHWA APPROVAL	9-16-15	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 12-11-2018

Sh. No. 45

KDOT Graphics Certified

Drawn By : user
File : c:\pwworking\central01\d0966203\ka4939901rd620-01.dgn
Plotted 01-31-19