STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	1	52
F.A. NO. BRO C529(701)				

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION
PLAN AND PROFILE OF PROPOSED
PROJECT NO. 44 C-5297-01

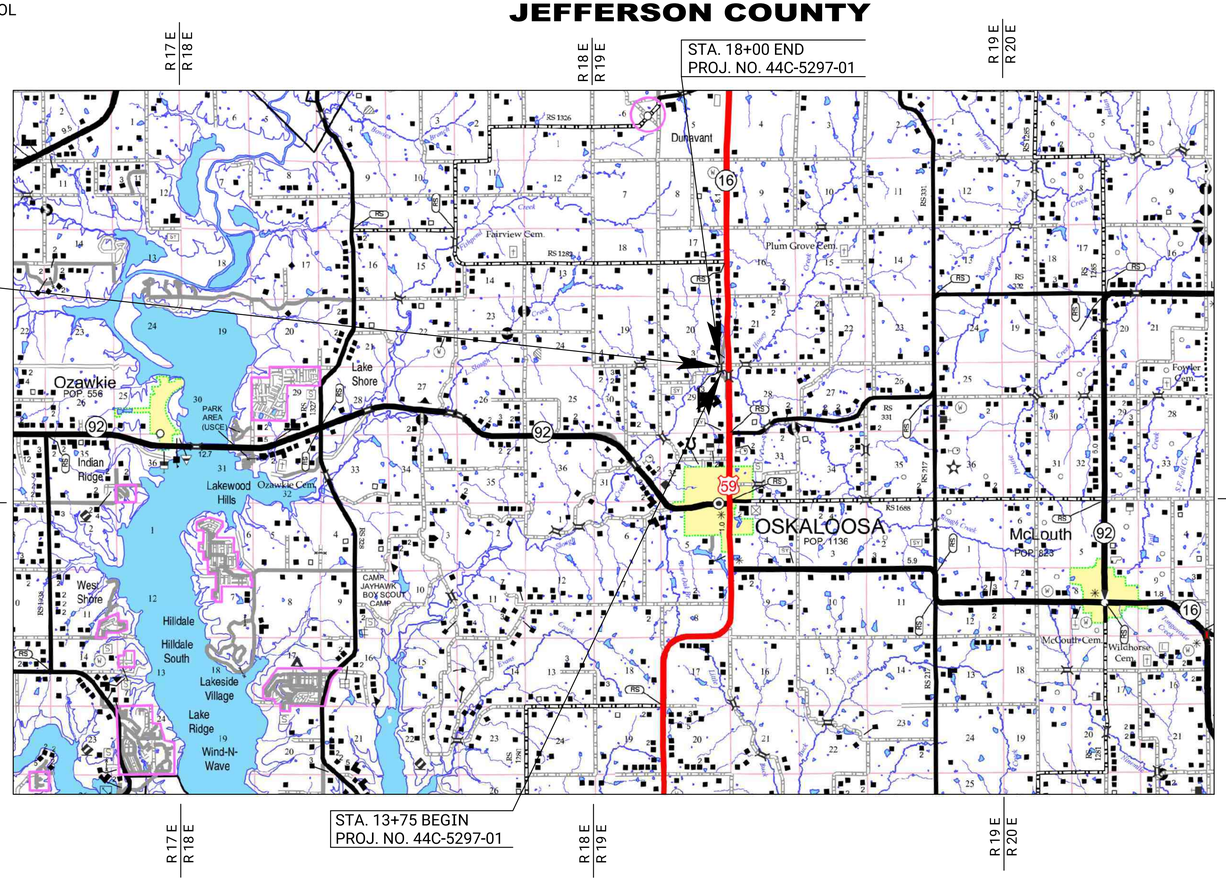
FEDERAL AID PROJECT

JEFFERSON COUNTY

PROJ. NO. 44 C–5297–01
FED. NO. BRO C529(701)

GRADING
SURFACING
BRIDGE
SEEDING

INDEX OF SHEETS



1 0 1 2
SCALE IN MILES

NOTE: PROJECT TO BE CLOSED TO TRAFFIC DURING CONSTRUCTION

PLANS PREPARED BY
FINNEY & TURNIPSEED
TRANSPORTATION AND CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

DESIGN DESIGNATION

AADT(2022)	35
AADT	
DHV	
D	
T	
V	30 MPH
C of A	
Clear Zone	12'

CONVENTIONAL SIGNS

COUNTY LINE		CENTER LINE OF PROJECT	50 /
CITY LIMITS		TERRACE	
STATE OR NATIONAL LINE		CULVERTS	
TOWNSHIP, SECTION or GRANT LINE		DROP INLET & STORM SEWER	
PROPERTY LINE		ACCESS CONTROL	
HIGHWAY FENCE		POWER POLE	
EXISTING FENCE		TELEPHONE POLE	
GUARDRAIL		MARSH	
CONSTRUCTION LIMITS		HEDGE	
RIGHT OF WAY LINE		TREES	
TRAVELED WAY		PROFILE ELEVATION	1172.18
RAILROADS		STREAM or CREEK	

GROSS LENGTH OF PROJECT	425.00	FT. (Includes Equations)	
EXCEPTIONS			
NET LENGTH OF PROJECT	425.00	FT.	0.081 MILES
NET LENGTH OF BRIDGES	146.50	FT.	0.028 MILES
NET LENGTH OF ROAD	278.50	FT.	0.053 MILES

CRAIG ALLEN MATSON LICENSED 11485 PROFESSIONAL ENGINEER 11/18/2024

RECOM. FOR APPROVAL-DATE 7-15-2024

LOCAL PUBLIC OFFICIAL

Approved: Dec 12, 2024
Date

State Transportation Engineer

By:
Chief, Bureau of Local Projects

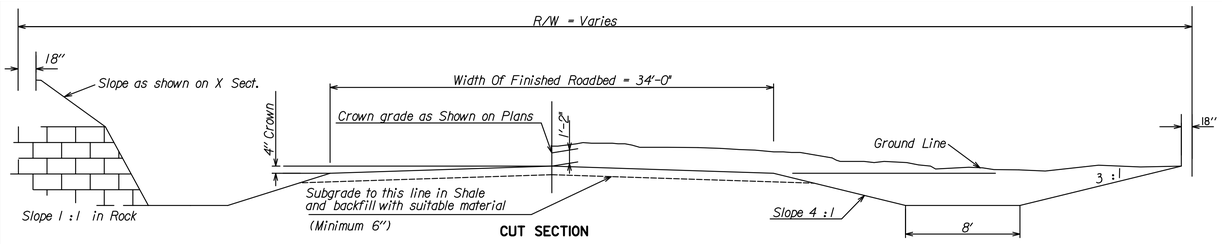
KANSAS DEPARTMENT OF TRANSPORTATION

DATE	BY
12-2023	FINNEY & TURNIPSEED
	FINNEY & TURNIPSEED
	FINNEY & TURNIPSEED
	LOCAL PROJECTS

SURVEY
CADD TECHNICIAN
DESIGNERS
SQUAD

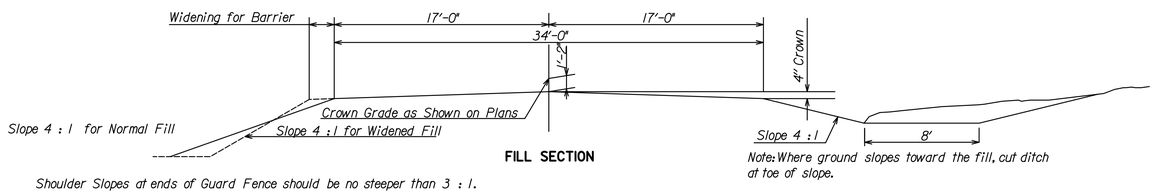
12-9-2024
4:49:45 PM
Y:\KDOT\County\Jefferson_44\McCall Drive over Slough Creek\Title McCall Slough.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	2	52



CUT SECTION

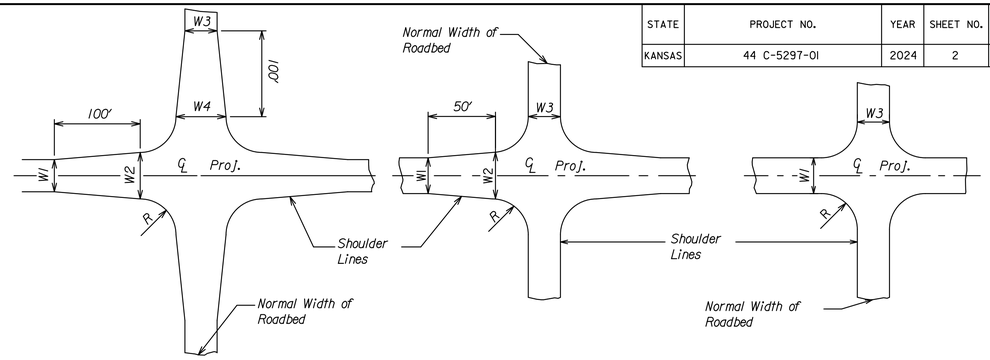
NOTE: For overbreakage in limestone, sandstone or shale see Special Provisions



FILL SECTION

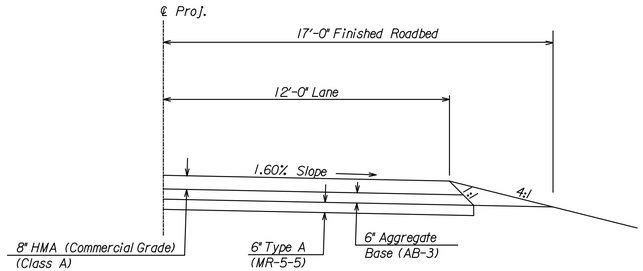
Note: Where ground slopes toward the fill, cut ditch at toe of slope.

Shoulder Slopes at ends of Guard Fence should be no steeper than 3 : 1.
When fill exceeds 6' Shoulder Slopes may be steepened to 3:1

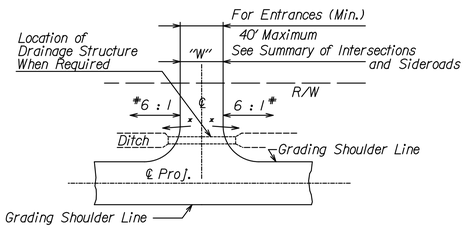


TYPE-A TYPE-B TYPE-C

TYPICAL INTERSECTION DETAILS



TYPICAL ½ SECTION SURFACING

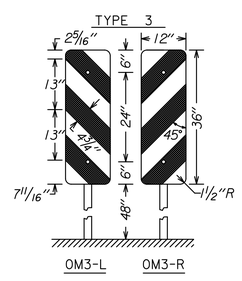


TYPICAL SIDE ROAD OR ENTRANCE DETAIL

* On side roads and entrances which slope toward the roadway, construct a low point approx. 6" deep to divert surface drainage into the roadway ditch.

* On ditch plugs and side roads or entrances without drainage structures use 8 : 1 slopes where feasible.

OBJECT MARKER

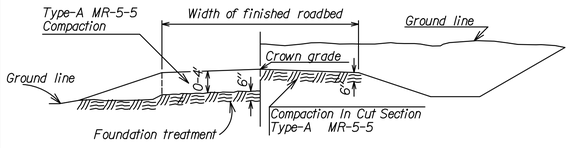


SUMMARY OF INTERSECTIONS AND SIDEROADS

STATION	SIDE OR QUADRANT	TYPE	W	WI	W2	W3	W4	R	C	S	D	BS
14+00	Lt.	C		24'		20'		15'				

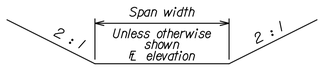
SUMMARY OF OBJECT MARKERS AND SIGNS

STATION TO STATION	SIDE	TYPE OF STRUCT.	TYPE OF SIGN	OBJECT MARKER TYPE	OBJECT MARKER NO.	REMARKS
15+23	Lt.	Bridge		OM-3L	1	
15+23	Rt.	Bridge		OM-3R	1	
16+67	Lt.	Bridge		OM-3R	1	
16+67	Rt.	Bridge		OM-3L	1	
Ø As you face bridge end from approach						
•Back-to-Back [Sign(s) on Both Sides of Post]						



ALL EMBANKMENT SHALL BE COMPACTED EXCEPT DITCHPLUGS AND WASTE BERMS.

FOUNDATION TREATMENT AND COMPACTION OF EARTHWORK



TYPICAL INLET AND OUTLET CHANNEL EXCAVATION SECTION FOR BOX STRUCTURES & PIPE CULVERTS

GENERAL NOTES

All signs shown on the plans, and other signs furnished and installed by the LPA with their own forces and funds will be installed in conformance with the Manual on Uniform Traffic Control Devices (latest edition).

LPA to furnish all easements and additional right of way (unless otherwise noted).

Public and private utility facilities will be adjusted by others as needed to fit the new construction unless noted otherwise on the plans or in the proposal.

Refer to KDOT Standard Drawing No. BR 100 for excavation limits for constructing box culverts.

All Sign, Fastener, and Post materials must meet the requirements of the latest edition of the KDOT Standard Specifications for State Road and Bridge Construction.

Install Object Markers Type OM3-(R)(L) at each corner of all span bridges and when indicated on the plans at box structures. Install with the inside edge of the marker in line with the inside clearance line of the structure.

NO.	REVISIONS	BY	APP'D
7	01-08-15 Revised superelevation diagram, updated misc. notes.	TLS	RJS
6	11-9-04 Changed 'Culvert' to 'Structure'	DMK	RJS
5	12-1-03 Rem. Delin.'s/Add Typ. Sect./Changed OM notes	DMK	RJS
4	5-14-03 Rev. Contractor note in Gen. Notes	DMK	RJS

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL GRADING SECTION

~~LP907~~

FHWA APPROVAL	12-06-04		APP'D	RJS	
DESIGNED	DETAILED	DMK	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	RJS	QUAN.CK.	TRACE CK.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	3	52

GENERAL NOTE

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

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

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

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

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

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

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

ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOODPLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS.

ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.

CONTRACTOR SHALL SALVAGE ALL TRAFFIC SIGNS WITHIN THE CONSTRUCTION LIMITS AND PLACE THEM ON THE RIGHT OF WAY FOR REMOVAL BY JEFFERSON COUNTY FORCES. THIS WORK SHALL BE INCLUDED IN THE BID ITEM REMOVAL OF EXISTING STRUCTURES.

BRUSH AND STUMPS LEFT BY UTILITY RELOCATIONS SHALL BE REMOVED AS PART OF THE BID ITEM CLEARING AND GRUBBING.

DATE	BY	REFERENCES NOTED	REFERENCES CHECKED
1-2024	T. REED		

℄ P.O.T. Sta. 10+00.00
N 652,042.164, E 11,482,185.723
1. Not Set, Office Location.

℄ P.C. Sta. 11+04.80
N 652,131.307, E 11,482,130.618
1. Not Set, Office Location.

℄ P.I. Sta. 12+22.49
N 652,231.413, E 11,482,068.735
1. Not Set, Office Location.

℄ P.T. Sta. 13+33.57
N 652,349.065, E 11,482,071.700
1. Not Set, Office Location.

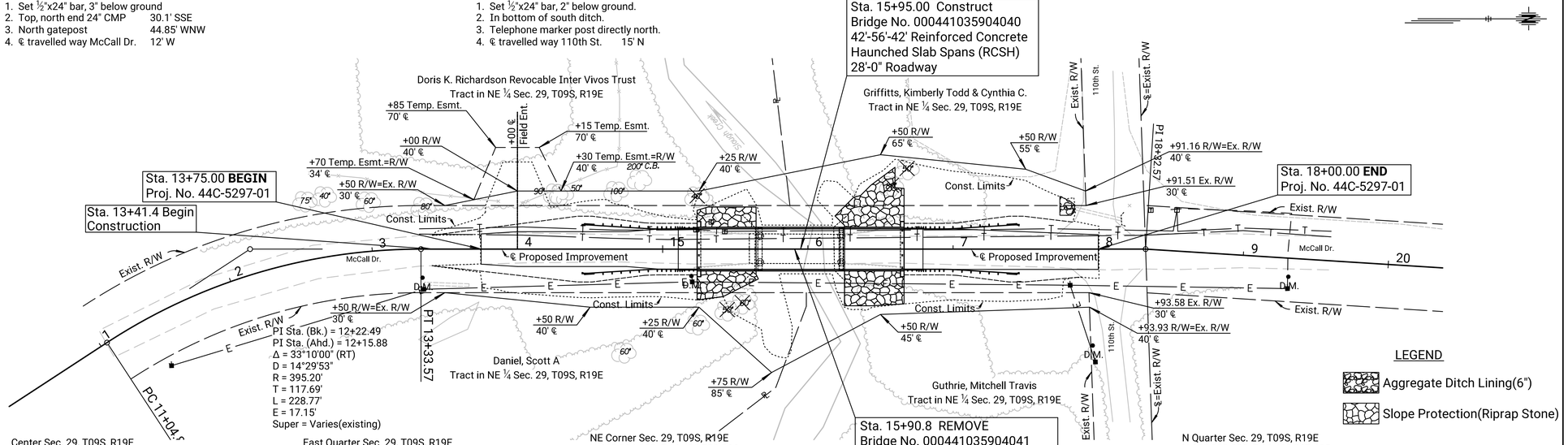
℄ P.I. Sta. 18+32.57
N 652,847.907, E 11,482,084.270
1. Found ½" bar, flush with asphalt
2. "O" cut in top headwall, BM 3 26.3' SW
3. Power pole 57.6' SE
4. ℄ travelled way McCall Dr. 2.5' E

℄ P.I. Sta. 20+98.80
N 653,113.097, E 11,482,107.783
1. Not Set, Office Location.

℄ P.I. Sta. 23+89.76
N 653,398.306, E 11,482,165.343
1. Not Set, Office Location.

Reference Point #1
N 652,409.072, E 11,482,085.408
1. Set ½"x24" bar, 3" below ground
2. Top, north end 24" CMP 30.1' SSE
3. North gatepost 44.85' WNW
4. ℄ travelled way McCall Dr. 12' W

Reference Point #2
N 652,800.898, E 11,481,567.032
1. Set ½"x24" bar, 2" below ground.
2. In bottom of south ditch.
3. Telephone marker post directly north.
4. ℄ travelled way 110th St. 15' N



Center Sec. 29, T09S, R19E
N 650,180.250, E 11,480,081.897
1. Found ½" bar, 1' below ground
2. Magnail in north face 12" hackberry 63.74' WSW
3. Magnail in south face 24" tree 50.75' NW
4. ½" bar, 3" below ground 578.81' E

East Quarter Sec. 29, T09S, R19E
N 650,197.439, E 11,482,747.306
1. Found ½" bar, at asphalt surface
2. 30d spike and washer in south face power pole 108.73' E
3. Top east end 24" CMP 59.45' SW
4. ℄ travelled way US-59 30' E

NE Corner Sec. 29, T09S, R19E
N 652,854.000, E 11,482,730.066
1. Found ⅜" bar, 6" below ground
2. Nail and washer in top guard rail post 108.73' E
3. Magnail in southwest face power pole 19.61' SE
4. ℄ travelled way US-59 41' E
5. 645.82' Rt. of ℄ Sta. 18+32.57, SE ∠=91°-59'-03"

N Quarter Sec. 29, T09S, R19E
N 652,828.880, E 11,480,067.685
1. Found ½" bar, 1" above ground
2. Nail and washer in west face brace post 108.73' E
3. Magnail and washer south face corner post 19.61' SE
4. ℄ driveway 48' W
5. 2,016.68' Lt. of ℄ Sta. 18+32.57, SW ∠=88°-00'-57"

BM #1 Railroad spike in west face power pole. Sta. 11+36.2, 36.5' Rt. Elev. 991.56

BM #2 USGS disc on east end north bridge seat. Sta. 16+20.5, 13.5' Rt. Elev. 975.64

BM #3 "O" cut in top center of the north headwall of a 24" RCP. Sta. 18+15.3, 19.9' Lt. Elev. 979.00

BM #4 Railroad spike in west face power pole. Sta. 22+16.4, 27.4' Rt. Elev. 988.86

PROJECT SURVEY CONTROL

Horizontal Datum:
KRCS Zone 11 Kansas City

Vertical Datum:
North American Vertical Datum (NAVD88 Geoid 18)

Datum Bench Marks.
BM #2/Datum BM Elevation = 975.64

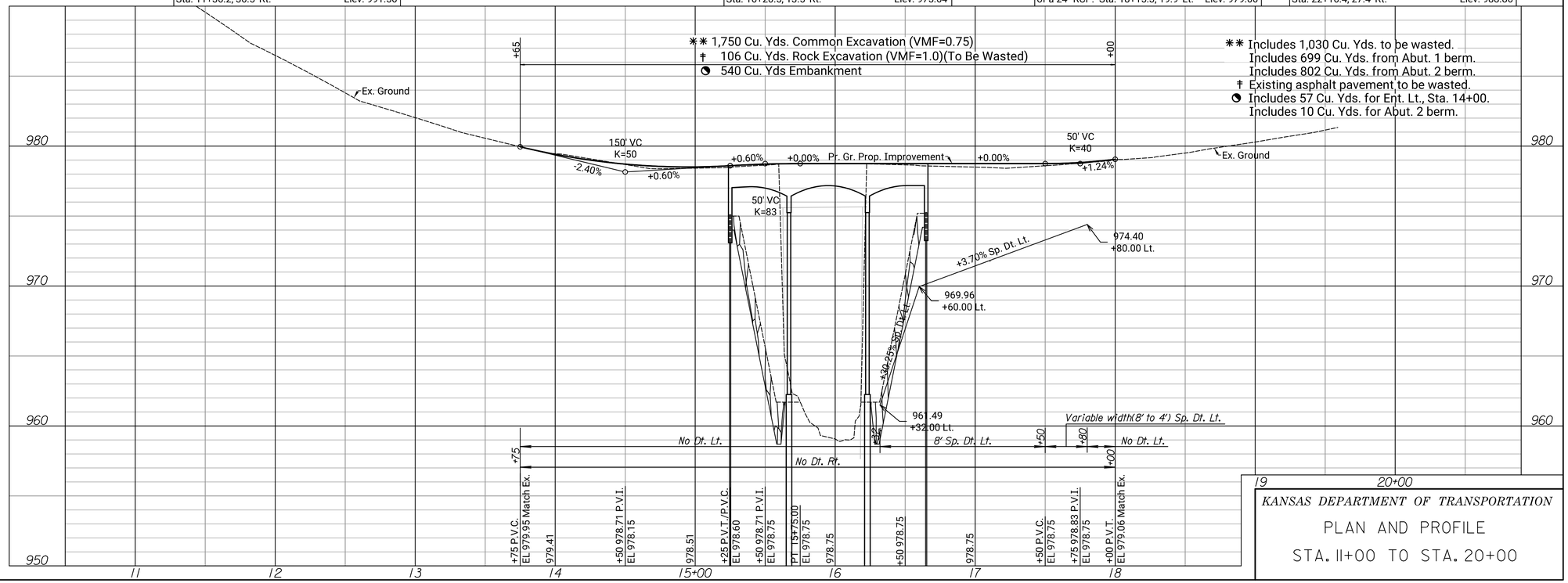
PLAN: Lat. & Long. 100' 0 100' 200'
PROFILE: Horiz. same as above
Vert. 10' 0

UTILITY OWNERS

Telephone/Fiber: BrightSpeed
138 W 6th St.
Junction City, KS 66441
Charlene Meadows
(980) 376-1494
charlene.meadows@brightspeed.com

Electric: Evergy
2103 Main Street
Atchison, KS 66002
Willy Kuhn
(913) 360-2852
William.Kuhn@evergy.com

NOTE: Contractor shall field verify the location and depth of all utilites lines. The information shown in these plans concerning type and location of underground utilities is not guaranteed to be accurate or all inclusive.



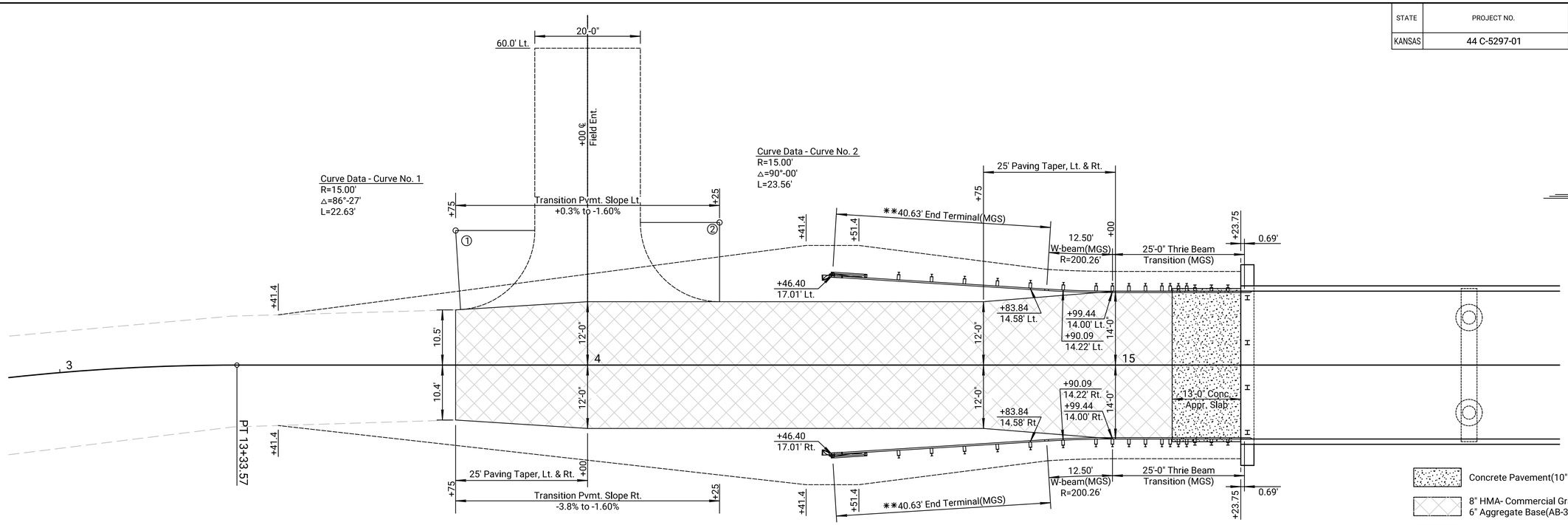
KANSAS DEPARTMENT OF TRANSPORTATION

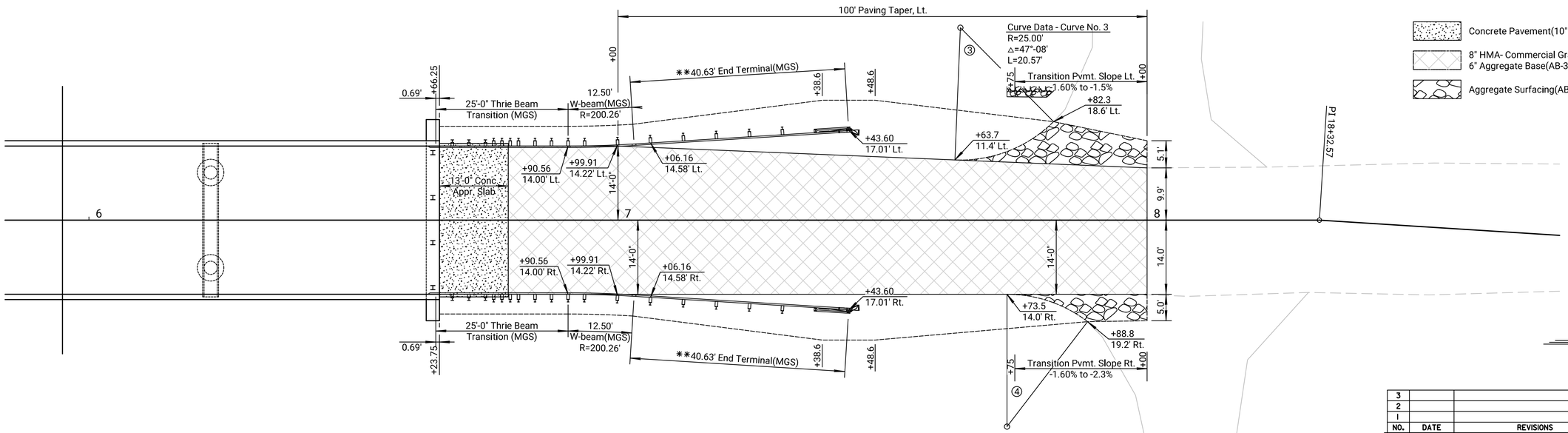
PLAN AND PROFILE

STA. 11+00 TO STA. 20+00

Plotted by : CAM 9-DEC-2024 16:49
File : Plan & Profile McCallSlough.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	4	52





**Guardrail End Terminal (MGS-SRT)(Alt. #1) or Guardrail End Terminal (MGS-FLEAT)(Alt. #2)

Curve Data - Curve No. 4
R=25.00'
△=37°-32'
L=16.38'

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

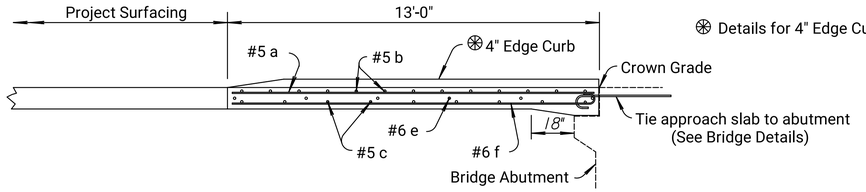
BR. NO. 000441035904040 STA. 15+95

SURFACING AND GUARDRAIL LAYOUT
McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

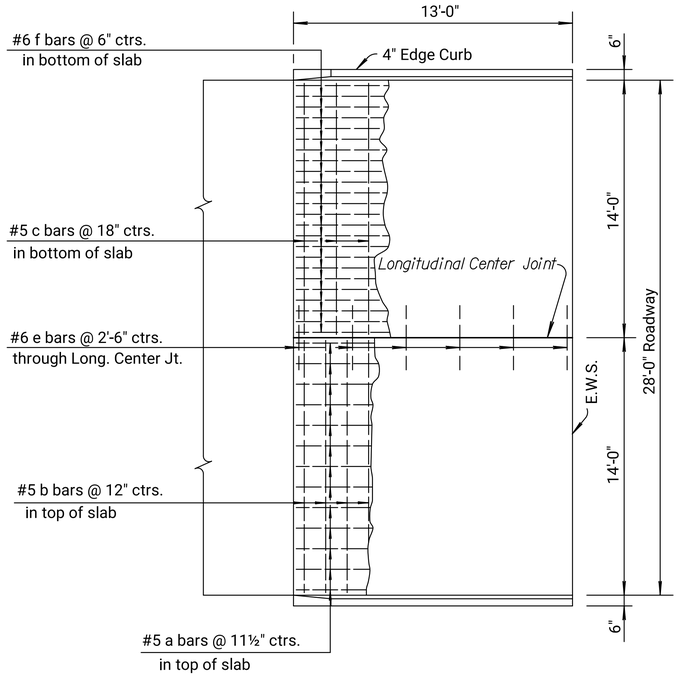
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED CAM	QUANTITIES	CADD CAM
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	5	52



⊛ Details for 4" Edge Curb, See Standard Drawing RD711.

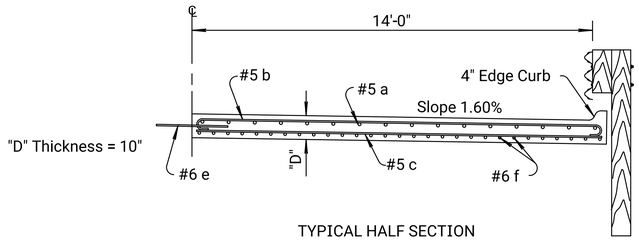
LONGITUDINAL SECTION ON CENTER LINE



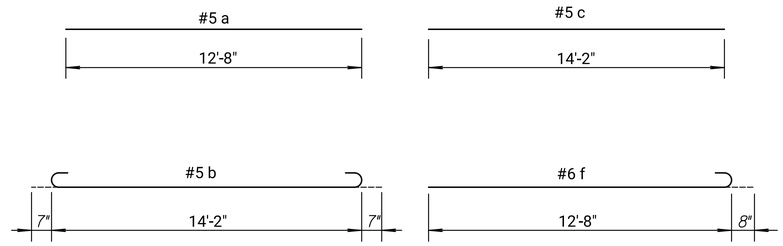
PLAN VIEW
(No Scale)

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 joint material 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 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.



TYPICAL HALF SECTION
(No Scale)



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

BENDING DIAGRAMS

BILL OF MATERIALS							
BAR SCHEDULE							
NORMAL APPROACH							
a	b	c	e	f			
32	28	20	6	58			
#5	#5	#5	#6	#6			
12'-8"	15'-4"	14'-2"	3'-0"	13'-4"			
Reinforcing Steel (Grade 60)					2,350	lbs.	
Concrete Pavement (10" Unif.)(AE)					41.9	Sq. Yds.	

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

NO.	DATE	REVISIONS	BY	APP'D
10	09-09-09	Revised Reinforcing Steel listing	S.W.K.	J.O.B.
09	05-14-09	Revised General Note	S.W.K.	J.O.B.
08	10-30-08	Revised 4" Edge Curb	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

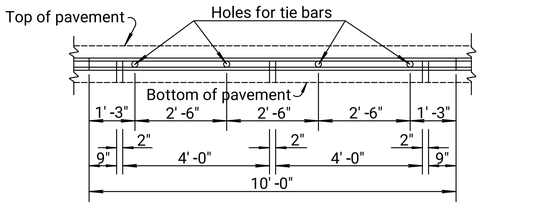
CONCRETE BRIDGE APPROACH PAVEMENT

~~RD715~~

FHWA APPROVAL 6-9-09		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	
DESIGN CK.	DETAIL CK.	QUAN.CK.	

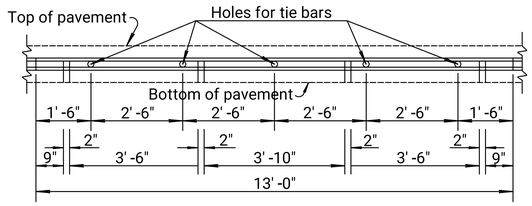
Plotted by : CAM 9-DEC-2024 16:49

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	6	52



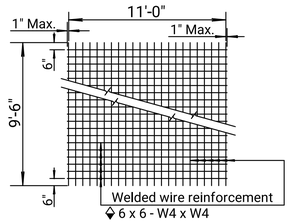
To be used only against forms. Shall not extend through contraction joints.

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



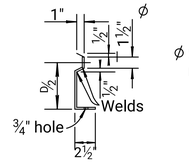
To be used only against forms. Shall not extend through contraction joints.

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.



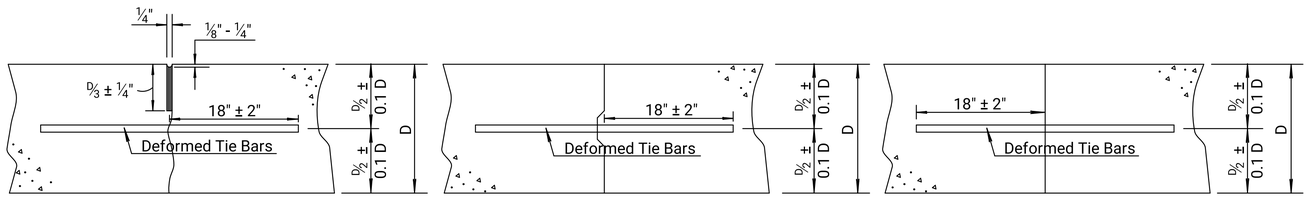
ϕ Snap-in leg or other approved designs may be used in lieu of welded leg.

SECTION OF RECESSED
FORM LEG

DETAIL OF LAP FOR WELDED WIRE REINFORCEMENT

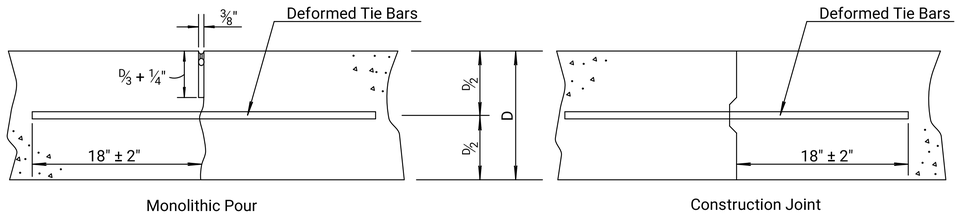
The lap shall extend beyond the first transverse or bag wire of each sheet.

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



LONGITUDINAL JOINTS

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



TRANSVERSE JOINTS

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

GENERAL NOTES

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

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

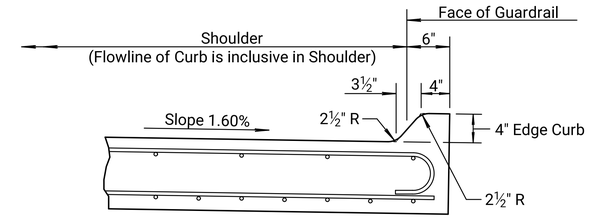
At each planned transverse joint location, a 4 to 6 inch wide strip of the pavement surface shall be protected from the texturing operation to provide a transverse textureless surface centered over the joint sawcut.

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

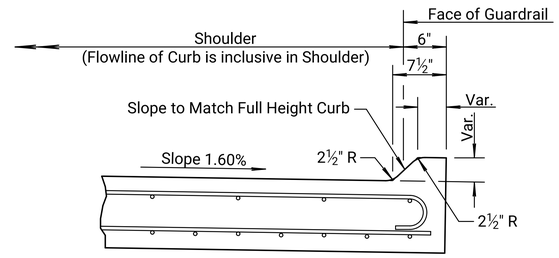
The 4 inch edge curb shall be constructed integral with the approach slab shoulder.

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

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

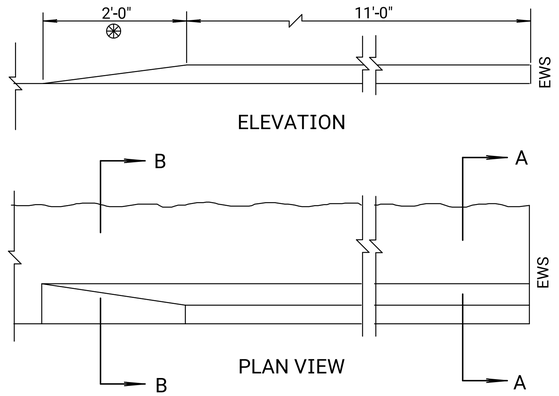


SECTION A-A



SECTION B-B

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



4" EDGE CURB DETAIL

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

KANSAS DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS
FOR CONCRETE
BRIDGE APPROACH PAVEMENT

RD711

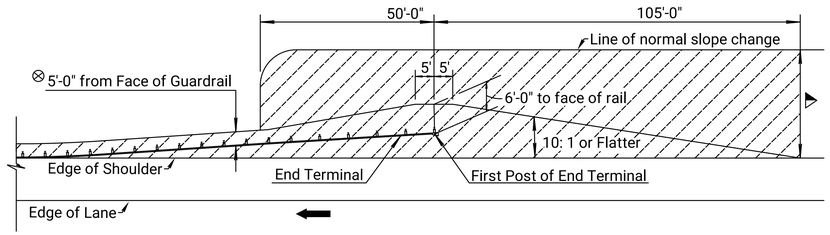
FHWA APPROVAL	10-23-13	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

Plotted by : CAM 9-DEC-2024 16:49
File : Approach Slab.dgn

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

GUARDRAIL CLEAR AREA

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



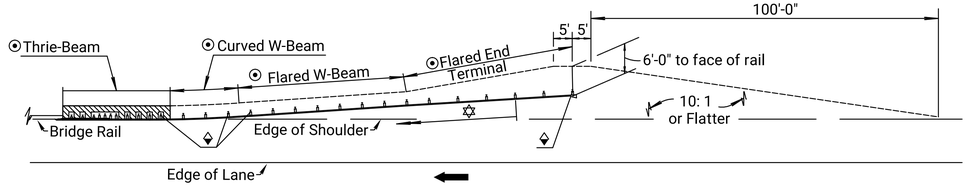
Keep Area Free of Stockpiled Material, Equipment, or Other Obstacles, Such as Temporary Signs, Regardless of Crash Worthiness. This Clear Area Extends 105 Feet in Advance of and 50 Feet behind the First Post of the Guardrail End Terminal and Then, in Order to Maintain Full Post Spacing, Continues 5 Feet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

Normal Project Side Slope.

Deflection Distance for Normal Post Spacing

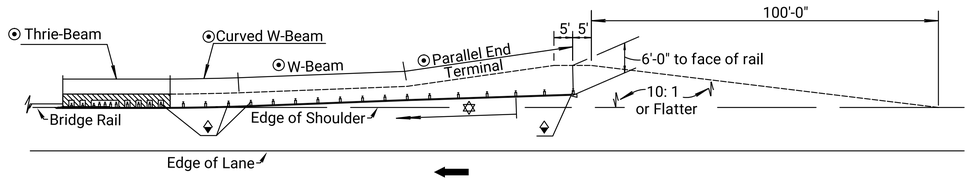
FLARED GUARDRAIL DETAIL

Applies to CGS AND MGS
(MGS Shown)



PARALLEL GUARDRAIL DETAIL

Applies to CGS AND MGS
(MGS Shown)



See Guardrail Layout Sheets for Details

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

Length of Need (Begins at Post 3)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	7	52

GENERAL NOTES

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

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

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

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

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

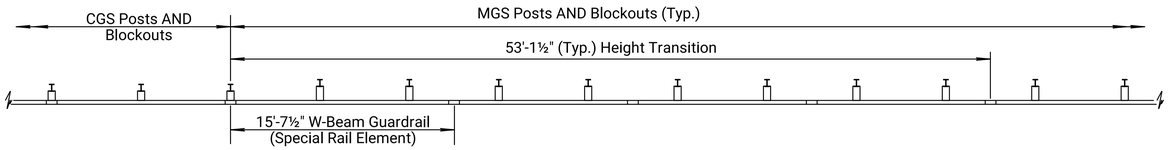
Lap w-beam and thrie-beam guardrail splices, in the direction of permanent traffic, even where temporary traffic may be carried in the opposite direction of the final traffic configuration. Lap end terminal splices per the Manufacturer's Installation Manual in the direction of permanent traffic, even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

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

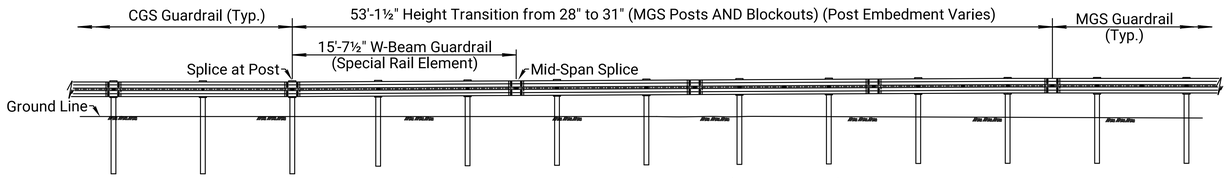
Where pavement with a thickness less than or equal to 8" is encountered during installation, use the details shown on KDOT's 'Guardrail Post Details' Standard Drawings to provide openings in the pavement for the guardrail posts. Where pavement with a thickness greater than 8" or geologic rock is encountered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

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

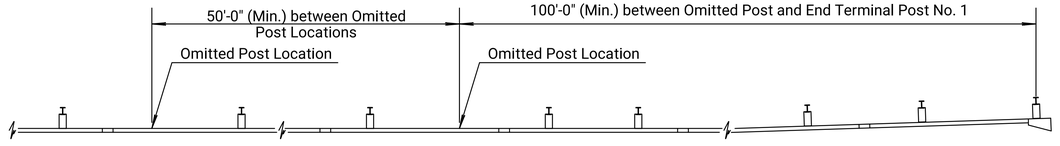
All work and materials required for guardrail end terminal installations are paid for under the bid item for the selected guardrail end terminal. See the table on this sheet for the appropriate end terminal bid item information.



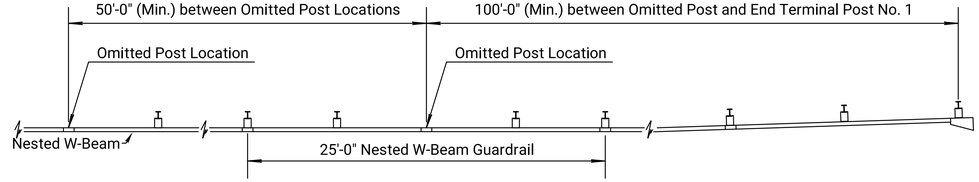
CGS TO MGS TRANSITION DETAILS (PLAN)



CGS TO MGS TRANSITION DETAILS (ELEVATION)



MGS OMITTED POST DETAIL



CGS OMITTED POST DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) END TERMINALS

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

CONVENTIONAL GUARDRAIL SYSTEM (CGS) END TERMINALS

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

NO.	DATE	REVISIONS	BY	APP'D
2	9-5-18	ADD. OMITTED POST AND TRANS. DETAILS	A.L.R.	T.T.R.
1	6-5-18	INITIAL RELEASE	A.L.R.	T.T.R.

KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL AUXILIARY DETAILS

RD606

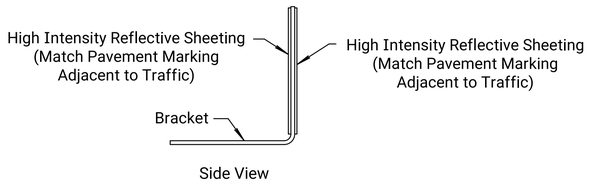
FHWA APPROVAL	9-25-18	APP'D.	SCOTT W. KING
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

Plotted by : CAM 9-DEC-2024 16:49
File : Road Stds-GuardRail.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	8	52

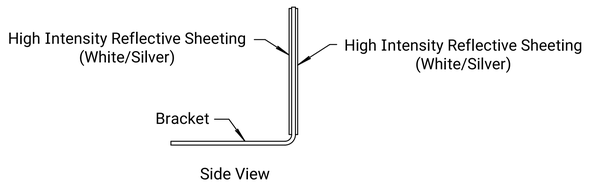
Side View

Flexible Marker
One-Way Traffic



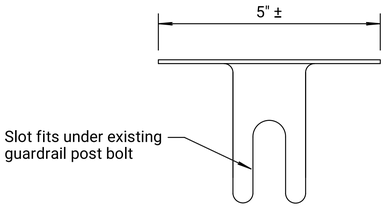
Side View

Flexible Marker
Median Locations

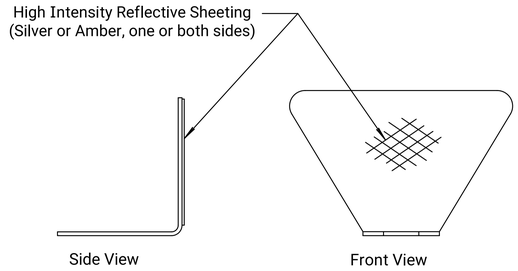


Side View

Flexible Marker
Two-Way Traffic



Top View



Side View Front View

Flexible Guardrail Marker

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

GENERAL NOTES

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

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

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

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

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

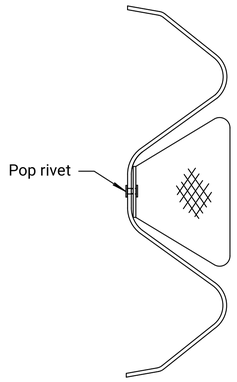
For guardrail located on one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located on the outside edge of one-way or divided roadways, use flexible markers with reflective sheeting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

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

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

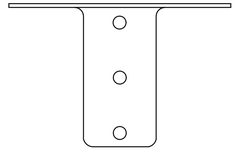
Work and materials required for installation of markers on guardrail, bridge rail, or concrete safety barrier are subsidiary to other bid items in the contract.

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



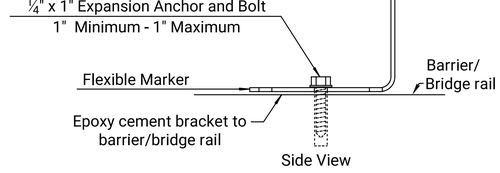
Typical Mounting on W-Beam

Pop rivet attachment to Guardrail when necessary.



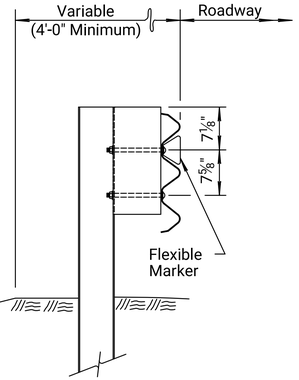
Top View

Barrier/Bridge Rail

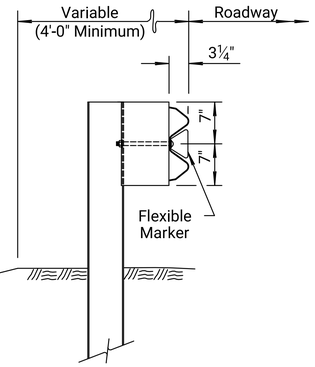


Side View

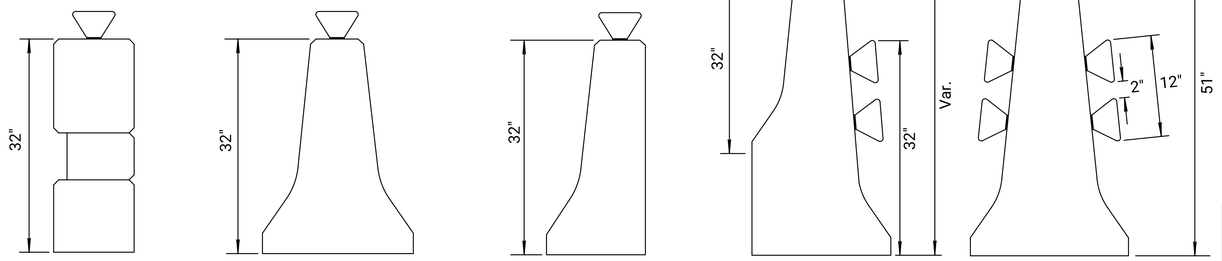
Method of Attaching Flexible
Marker to Barrier/Bridge Rail



THRIE-BEAM GUARDRAIL



W-BEAM GUARDRAIL



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

TYPICAL BARRIER/BRIDGE RAIL MOUNTING DETAILS

NO.	DATE	REVISIONS	BY	APP'D
9	9-11-17	Rev. Det. Markers, Rev. Gen. Note	A.L.R.	S.W.K.
8	11-15-10	Revised notes	S.W.K.	J.O.B.
7	12-21-08	AKT marker or approved equal	S.W.K.	J.O.B.
6	3-10-09	Add. Flexible rem. Button deline	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

MARKER DETAILS FOR GUARDRAIL, BARRIER, AND BRIDGE RAILS

RD610

FHWA APPROVAL	3-15-18	APP'D. Scott W. King	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

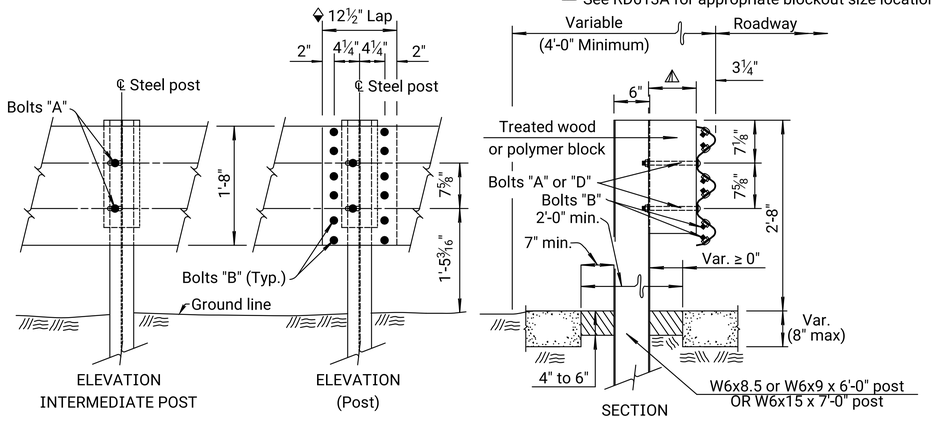
Plotted by : CAM 9-DEC-2024 16:49
File : Road Stds-GuardRail.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	9	52

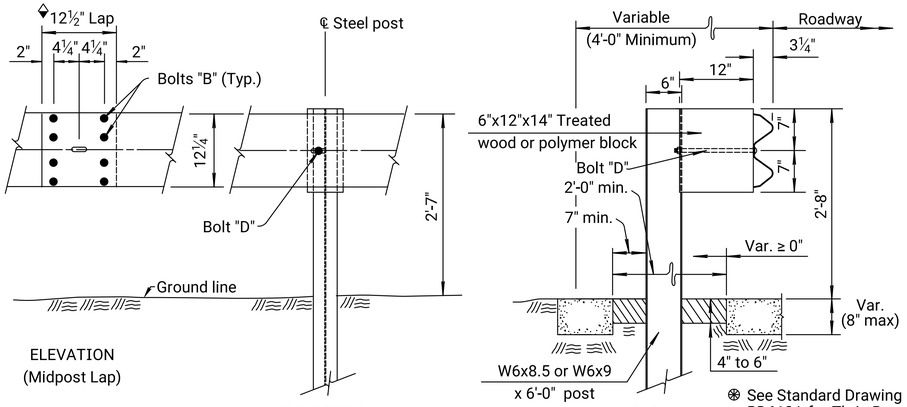
Notes to Designer: For posts installed in pavement thicker than 8" or posts installed in rock formations refer to AASHTO's Roadside Design Guide for details then revise this drawing and all supporting drawings appropriately.

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

⚠ See RD613A for appropriate blockout size location.

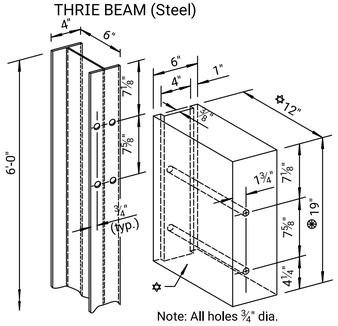


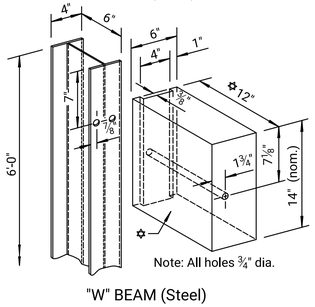
THRIE BEAM POST DETAILS/POSTS IN PAVEMENT



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

THRIE BEAM (Steel)



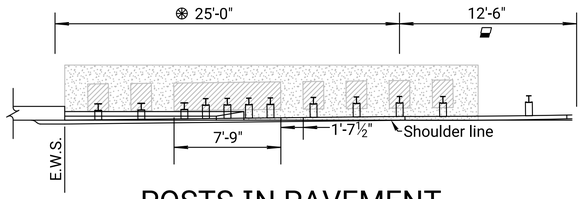


"W" BEAM (Steel)

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

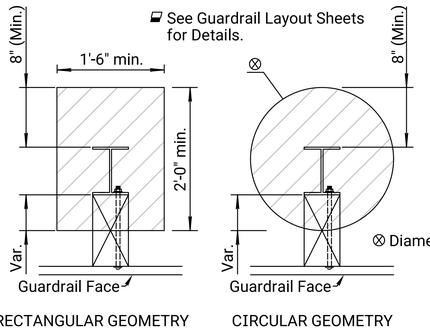
✡ Non-Metallic (Polymer) or Treated Wood Block

See Guardrail Layout Sheets for Details.



POSTS IN PAVEMENT

(Not to Scale)



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

PLAN
(ALTERNATE GEOMETRIES)

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

☐ Pavement (Concrete or Asphalt)

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

GENERAL NOTES (Steel Posts)

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

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

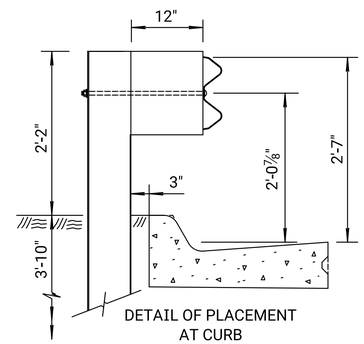
Wood blockouts may be used through the 25'-0" thrie-beam section with wood or polymer blockouts used throughout the remainder of the w-beam installation. The blockout size and material used in the guardrail end terminal may be independent from the remainder of the installation. For wood/polymer blockout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

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

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

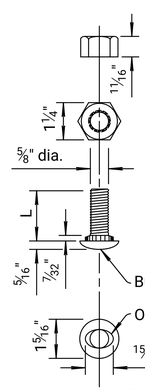
Contractor must notify Engineer at the earliest time when a non-removable manmade object (footing, pipe, etc.) is encountered that prevents installation of a full length post.

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



DETAIL OF PLACEMENT AT CURB

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



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

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

BOLT & NUT DETAILS

NO.	DATE	REVISIONS	BY	J.O.B.
5	9-24-15	Separated Steel/Wood Post Details	T.T.R.	S.W.K.
4	11-8-12	Revised Detail, Posts in Pavement	S.W.K.	J.O.B.
3	8-1-12	Revised Note to Designer	S.W.K.	J.O.B.
2	5-24-12	Revised Detail, Posts in Pavement	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL POST (STEEL) (MGS) DETAILS

RD611A

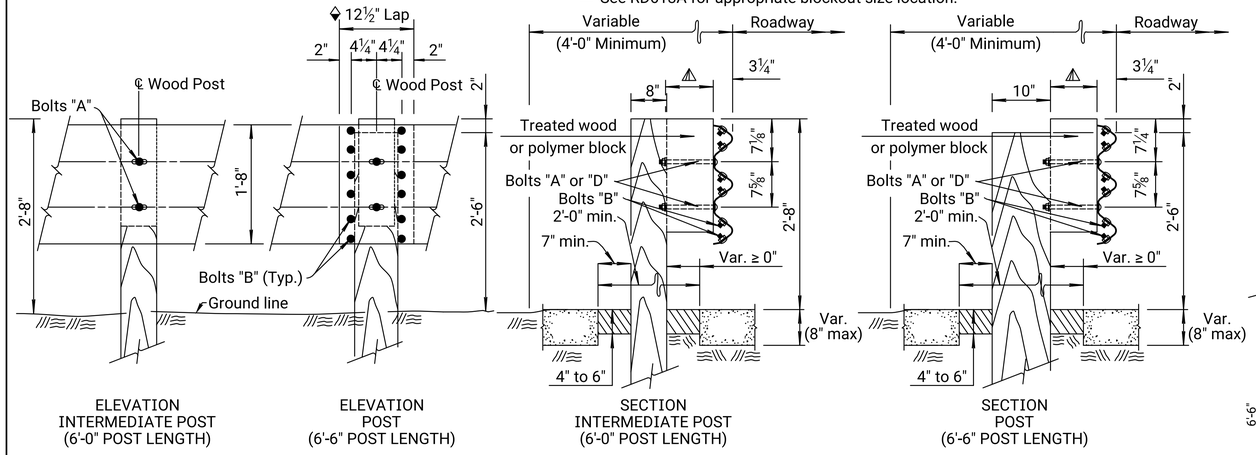
FHWA APPROVAL	1-29-16	APP'D. Scott. W. King	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Plotted by : CAM 9-DEC-2024 16:49
File : Road Stds-GuardRail.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	10	52

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

⚠ See RD613A for appropriate blockout size location.



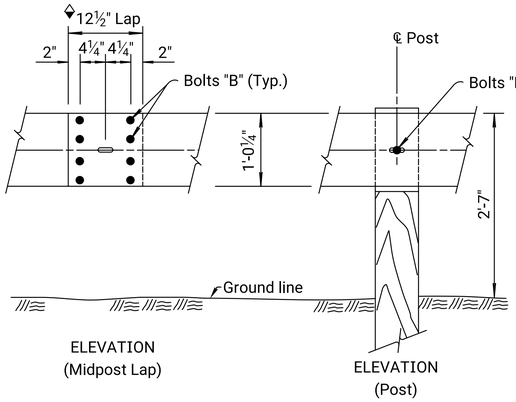
ELEVATION
INTERMEDIATE POST
(6'-0" POST LENGTH)

ELEVATION
POST
(6'-6" POST LENGTH)

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

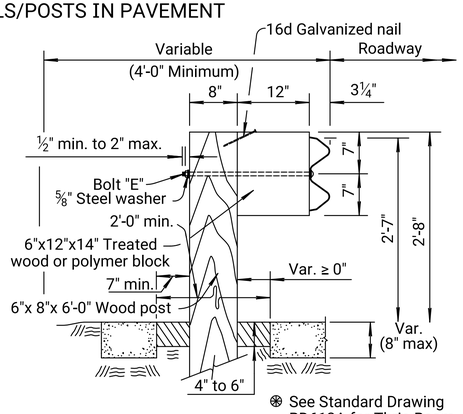
SECTION
POST
(6'-6" POST LENGTH)

THRIE BEAM POST DETAILS/POSTS IN PAVEMENT



ELEVATION
(Midpost Lap)

ELEVATION
(Post)



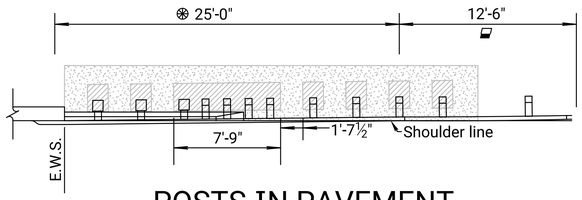
SECTION

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

✡ Non-Metallic (Polymer) or Treated Wood Block

▤ See Guardrail Layout Sheets for Details.

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



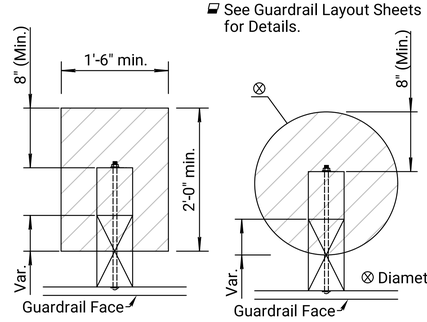
POSTS IN PAVEMENT

(Not to Scale)

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

☐ Pavement (Concrete or Asphalt)

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

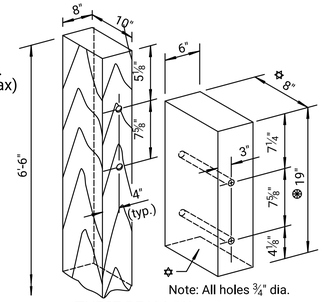


RECTANGULAR GEOMETRY

CIRCULAR GEOMETRY

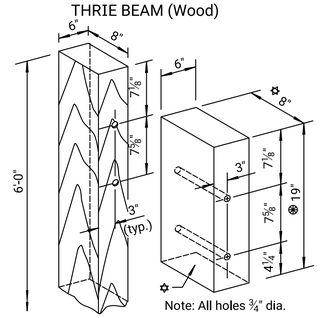
⊗ Diameter may vary from 1'-6" (min.) to 2'-0".

PLAN
(ALTERNATE GEOMETRIES)



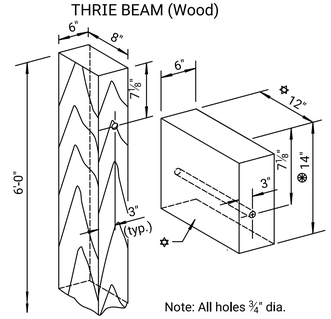
Note: All holes ¾" dia.

THRIE BEAM (Wood)



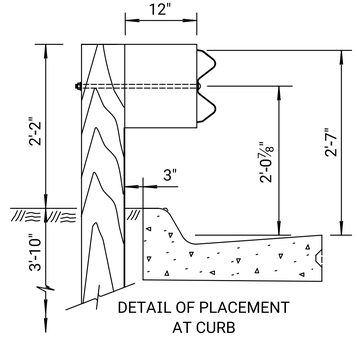
Note: All holes ¾" dia.

THRIE BEAM (Wood)



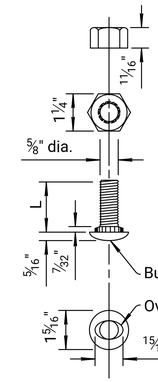
Note: All holes ¾" dia.

"W" BEAM (Wood)



DETAIL OF PLACEMENT
AT CURB

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



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

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

BOLT & NUT DETAILS

GENERAL NOTES (Wood Posts)

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

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

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

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

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

All dimensions are nominal and are subject to manufacturing tolerances.

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

NO.	DATE	REVISIONS	BY	APP'D
4	9-24-15	Initial Release	T.T.R.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL POST (WOOD) (MGS) DETAILS

RD611B

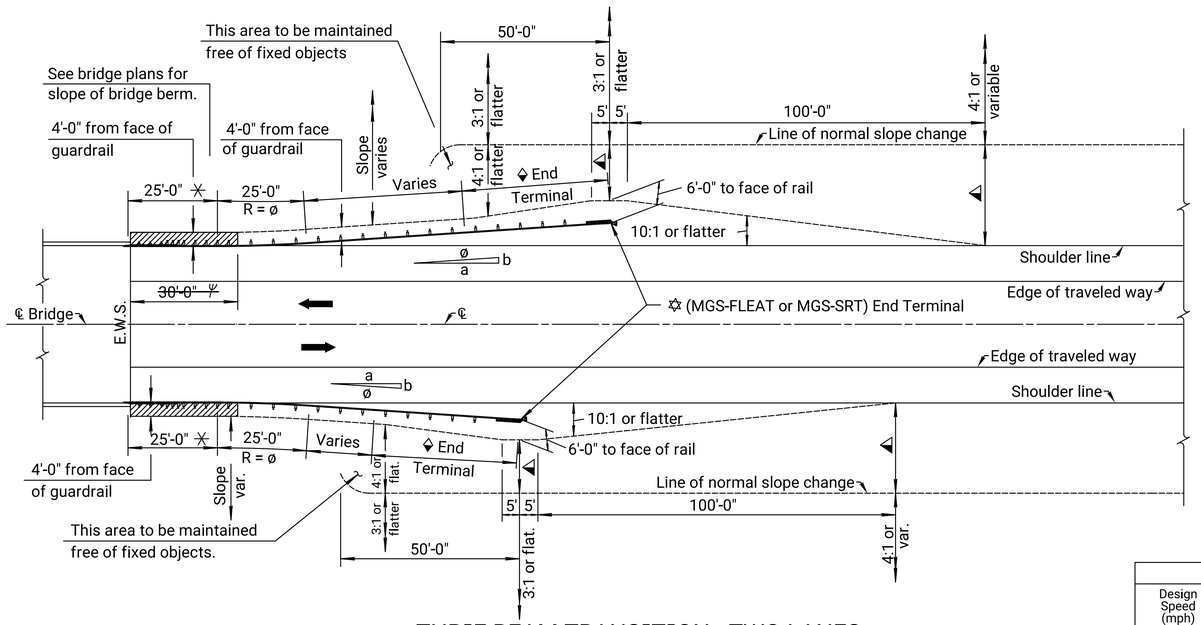
FHWA APPROVAL	1-29-16	APP'D. Scott W. King	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

Sheet No. 10

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

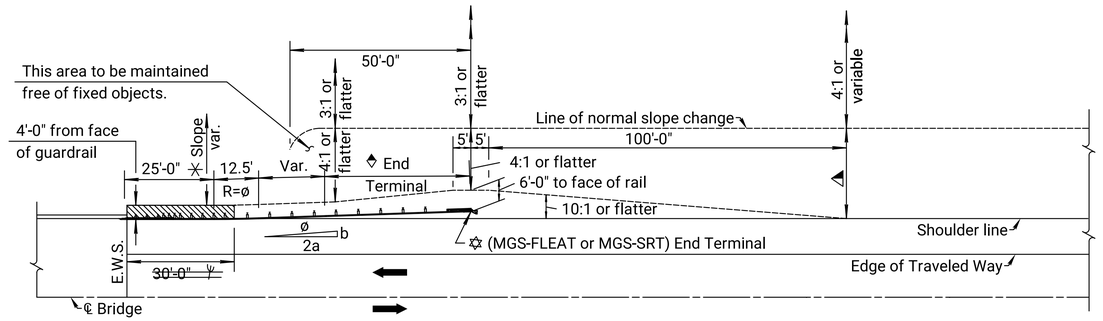
Plotted by : CAM 9-DEC-2024 16:49
File : Road Stds-GuardRail.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	11	52



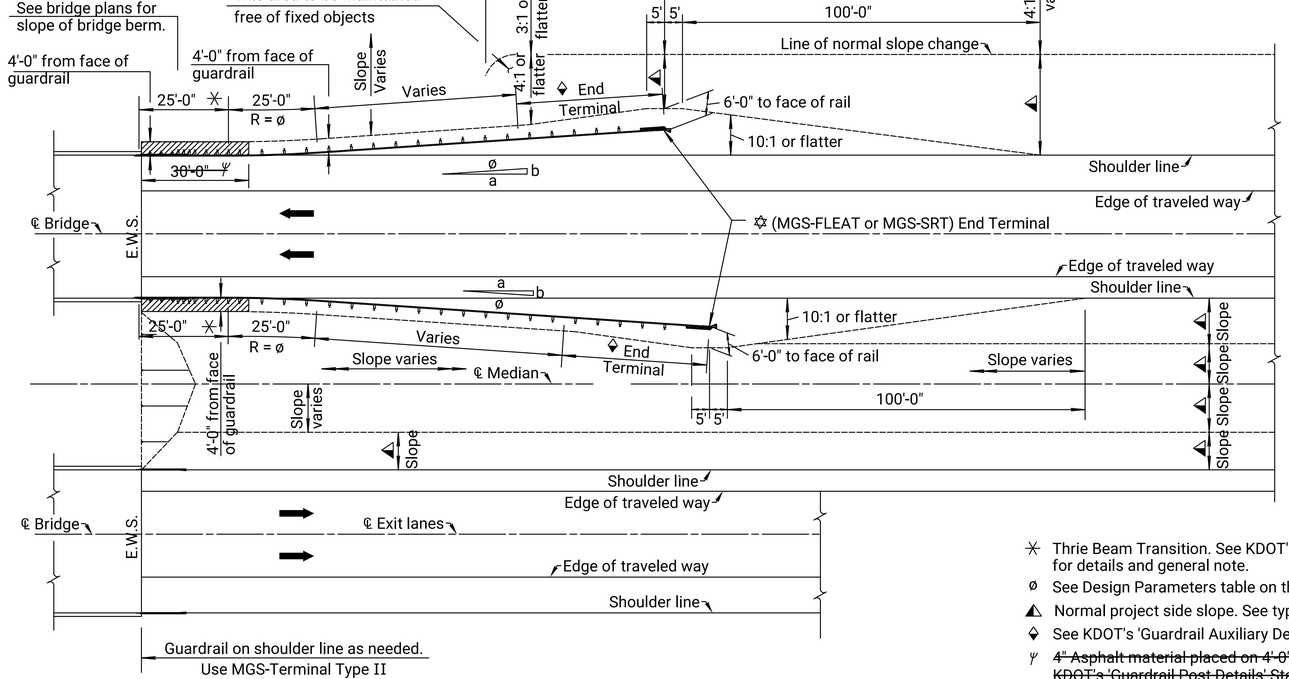
THRIE BEAM TRANSITION - TWO LANES

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



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

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



THRIE BEAM TRANSITION - FOUR LANES (DIVIDED)

NOTE: No 4" Asphalt required in Thrie Beam Transition.

- ✳ Thrie Beam Transition. See KDOT's 'Thrie Beam Guardrail Transition Details' Standard Drawings for details and general note.
- ø See Design Parameters table on this sheet for radius, length of curve and flare rate information.
- ◭ Normal project side slope. See typical sections.
- ⧫ See KDOT's 'Guardrail Auxiliary Details' Standard Drawing.
- ℄ ~~4" Asphalt material placed on 4'-0" embankment widening unless flume inlet and slope drain is constructed. See KDOT's 'Guardrail Post Details' Standard Drawings for "Post in Pavement" details~~.
- ✡ The minimum length of w-beam guardrail required between the guardrail end terminal and any transition section, including the thrie-beam transition, is 12'-6".

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

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

NO.	DATE	REVISIONS	BY	APP'D
4	6-5-18	Removed Flare-beyond-the-Flare	A.L.R.	T.T.R.
3	5-15-17	Removed X-LITE	A.L.R.	S.W.K.
2	6-7-12	Revised Note to Designer	S.W.K.	J.O.B.
1	1-25-12	Revised Layout, End Term.	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

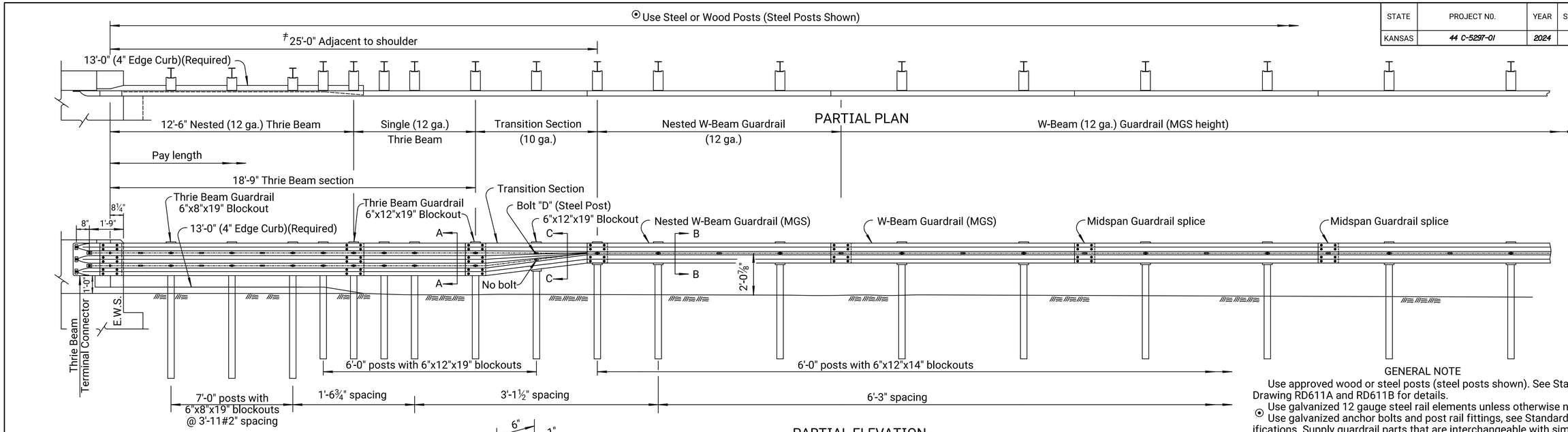
THRIE BEAM GUARDRAIL (MGS) BRIDGE APPROACH TRANSITION TYPICAL ALIGNMENTS (FLARED)

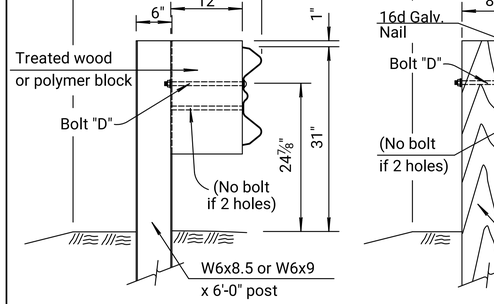
~~RB612C~~

FHWA APPROVAL	6-19-18	APP'D. SCOTT W. KING	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

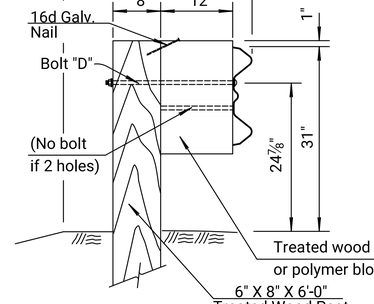
Plotted by : CAM 9-DEC-2024 16:49
File : Road Stds-GuardRail.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	12	52

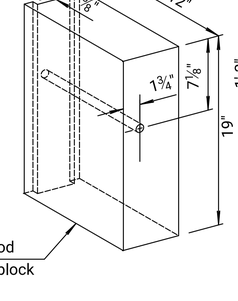




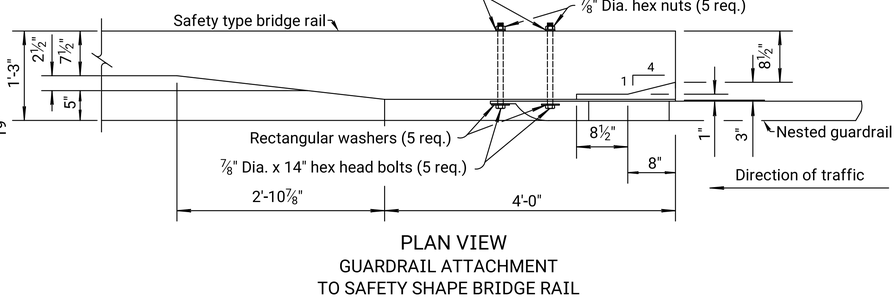
⊙ SECTION C-C (STEEL POST)



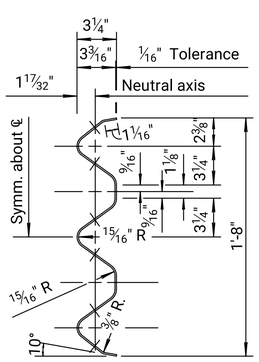
⊙ SECTION C-C (WOOD POST)



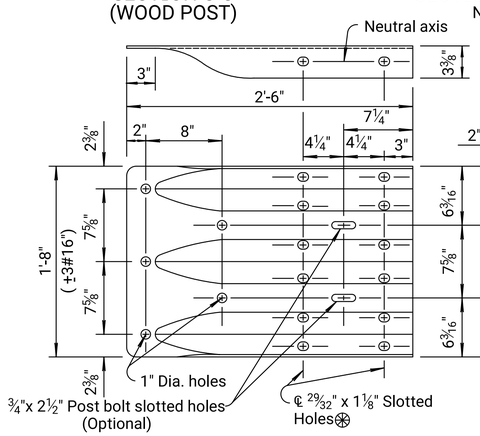
SECTION C-C (BLOCKOUTS)
Note: All holes ¾" dia.



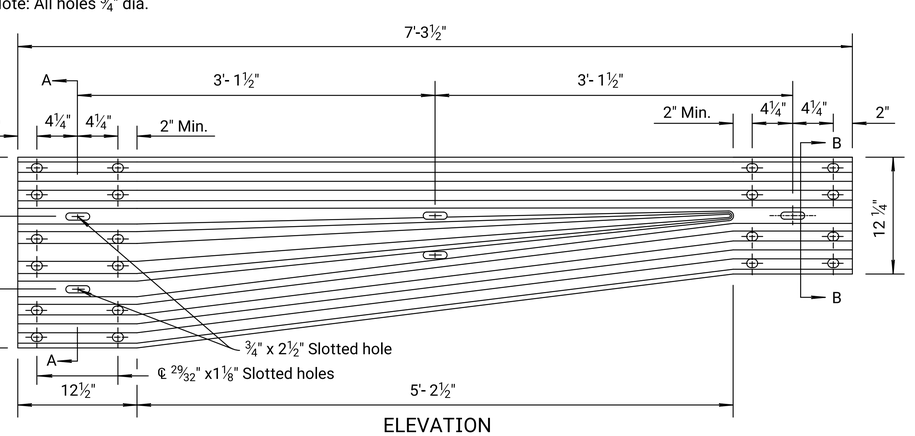
PLAN VIEW
GUARDRAIL ATTACHMENT
TO SAFETY SHAPE BRIDGE RAIL



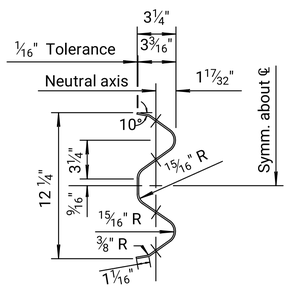
SECTION A-A
THRU RAIL ELEMENT
TYPICAL THRIE BEAM



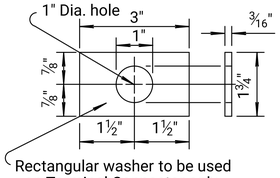
TERMINAL CONNECTOR
⊛ Optional 29/32" x 1¾" Slotted holes Rotated 50° (Typical) (12 req'd.)



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



SECTION B-B
THRU RAIL ELEMENT
TYPICAL W-BEAM



RECTANGULAR WASHER
(Other approved washer may be used.)

GENERAL NOTE

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

⊙ Use galvanized 12 gauge steel rail elements unless otherwise noted.

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

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

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

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

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

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

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

NO.	DATE	REVISIONS	BY	APP'D
2	2-10-16	Added Detail, Wood Post	T.T.R.	S.W.K.
1	1-25-12	Revised Details, Thrie-Beam	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS OF THRIE BEAM to (MGS) GUARDRAIL TRANSITION

RD613A

FHWA APPROVAL	4-21-16	APP'D.	SCOTT W. KING
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

Plotted by : CAM 9-DEC-2024 16:50
File : Road Stds-GuardRail.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	13	52

SUMMARY OF QUANTITIES

Item / Location	Class I Excavation Cu. Yds.	Concrete Grade 4.0 (AE) Cu. Yds.	Concrete Grade 4.0 (AE)(SW) Cu. Yds.	Reinforcing Steel Grade 60 Lbs.	Reinforcing Steel Grade 60 (Epoxy Coated) Lbs.	Bridge Deck Grooving Sq. Yds.	◔ Piles (Steel) (HP10x42) Lin. Ft.	Cast Steel Pile Points Each	Drilled Shaft (48") (Cased) Lin. Ft.	Sonic Test (Drilled Shaft) (Set Price) Each	Core Hole (Investigative) Lin. Ft.	Abutment Strip Drain Sq. Yds.	Bridge Backwall Protection System Sq. Yds.	Slope Protection (Riprap Stone) Cu. Yds.	Geotextile Fabric Sq. Yds.
Abutment No. 1	55	--	**	--	**	--	168	4	--	--	--	18	22	238	72
Pier No. 1	--	4.7	--	3,100	--	--	--	--	73	--	42	--	--	--	--
Pier No. 2	--	4.7	--	3,100	--	--	--	--	73	--	42	--	--	--	--
Abutment No. 2	55	--	**	--	**	--	172	4	--	--	--	18	22	341	72
Substr. Total	110	9.4	--	6,200	--	--	340	8	146	--	84	36	44	579	124
Superstr. Total	--	--	307.2	--	90,250	380	--	--	--	--	--	--	--	--	--
Total	110	9.4	307.2	6,200	90,250	380	† 340	8	146	1	84	36	44	579	124

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

** Quantities are included in the Superstructure Total Quantity.

† Summary of Piling
Abutment No. 1- 4 @ 42'
Abutment No. 2- 4 @ 43'

◔ NOTE: Only Gr. 50 steel HP10x42 piling shall be used.

LFD & LRFR RATING FACTORS		
Truck / Rating Level	Inventory	Operating
HS-20 (36T)	1.69	2.83
Type HET (110T)	X	1.54
2002 LFD Rating. 17th Edition AASHTO		
HL-93 Loading	1.44	1.86
2018 Manual for Bridge Evaluation		

INDEX TO BRIDGE DRAWINGS	
Sheet No.	Drawing
13	General Notes and Quantities
14	General Notes
15	Contour Map
16	Construction Layout
17	Engineering Geology
18-19	Abutment Details
20	Abutment Strip Drain
21-22	Pier Details
23-24	Superstructure Details
25	Corral Rail Details
26	Auxiliary Superstructure Details
27	Slab Elevations
Standards	
28	Bridge Excavation
29	Standard Pile Details
30	Supports and Spacers for Reinforcing Steel

GENERAL NOTES

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

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

EXISTING STRUCTURE: Plans of the existing structure are on file and available for inspection by qualified bidders at Jefferson County Road and Bridge Office, 14991 94th Street, Oskaloosa, KS.

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

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

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

BRIDGE EXCAVATION: Elevation 961.7 shall designate the Excavation Boundary Plane of Class I and Class II Excavation. Class I shall be above the plane, Class II below the plane. See the Bridge Excavation sheet for the limits of pay excavation.

BACKFILL COMPACTION: Compact backfill at the abutments.

PILING: Drive all piling to penetrate or bear in the Avoca limestone of the Lecompton Formation. Once the required resistance within the limstone of the Avoca limestone is achieved, driving should cease to avoid damage to the pile. Final pile tip elevations should be determined in the field based on observed blow counts and bearing formula calculations. Drive all piling to the Pile Driving Formula Load of:

Abutment No. 1 & 2 56 tons

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

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

ABUTMENT STRIP DRAIN: See General Notes on the "Abutment Strip Drain" sheet.

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

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. Spiral bars may meet the requirements of either ASTM A615 (Gr. 40 or 60) or AASHTO M32, and are included in the bid item "Reinforcing Steel (Gr. 60)". Where non-coated bars come in contact with epoxy coated bars, they need not be coated.

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

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

FALSEWORK: Leave the falsework in place for the entire unit until 15 days after the last concrete pour for the unit or longer as directed by the Engineer. Notify the Engineer a minimum of two days prior to removal of the falsework.

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

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

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

CAMBER: Provide camber as shown on the Camber Diagram unless the Contractor uses either long span steel beam falsework (concrete dead load deflection greater than ¼") or timber falsework with greater than 12'-0" clear span. If either case exists, submit falsework plans that show the additional required camber.

DECK FINISHING: Set the finishing machine normal to the centerline of the structure for striking off and screeding the concrete.

DESIGN DATA

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

DESIGN LOADING:
HL-93. Design dead load allowance of 15 psf for future wearing surface.

UNIT STRESSES:

Concrete Grade 4.0 (AE)	f'c = 4,000 psi
Concrete Grade 4.0 (AE)(SW)	f'c = 4,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi
Steel Piling (Grade 50)	fy = 50,000 psi

LRFD DESIGN PILE LOAD:

Design Loading (tons/pile)	Strength I	Service I	Phi
Abutment No. 1 & 2	54.8	37.9	0.45

LRFD DESIGN DRILLED SHAFT PRESSURES:

Design Loading (tons/shaft)	Strength I	Service I	Phi
Pier No. 1 & 2	291.5	206.7	0.45 End Bearing 0.55 Side Friction

SLAB ELEVATIONS: The Contractor shall record elevation readings on the "Slab Elevations" sheet in the table at locations designated by a "(2)", and submit the sheet to the Engineer.

CORRAL RAIL: Build the corral rail after the falsework is struck.

SLOPE PROTECTION (RIPRAP STONE): Place Slope Protection (Riprap Stone) to the limits and thicknesses shown on the plans or as directed by the Engineer. Riprap size shall be Light 200 lb. stone. Place a 10 foot wide mat of geotextile under the rock embankment on the berm and centered on the drip line of the slab. Minimum thickness shall be 2'-6".

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

BR. NO. 000441035904040 STA. 15 + 95

GENERAL NOTES AND QUANTITIES

McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

FINNEY & TURNIPSEED
TRANSPORTATION & CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	14	52

GENERAL NOTES

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

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

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

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

PAINT SYSTEM ON EXISTING STRUCTURE: The structural steel has a paint history of:
1) Original paint system: Unknown Date: 1946
2) TCLP value is 3,385 mg/L Report Date: 23 August 2024 LEAD BASED
3) Tons of Steel: 210.8
4) Paint Area: Unknown

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

BR. NO. 000441035904040 STA. 15 + 95

GENERAL NOTES

McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

FINNEY & TURNIPSEED
TRANSPORTATION & CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

℄ P.O.T. Sta. 10+00.00
N 652,042.164, E 11,482,185.723
1. Not Set, Office Location.

℄ P.C. Sta. 11+04.80
N 652,131.307, E 11,482,130.618
1. Not Set, Office Location.

℄ P.I. Sta. 12+22.49
N 652,231.413, E 11,482,068.735
1. Not Set, Office Location.

℄ P.T. Sta. 13+33.57
N 652,349.065, E 11,482,071.700
1. Not Set, Office Location.

℄ P.I. Sta. 18+32.57
N 652,847.907, E 11,482,084.270
1. Found ½" bar, flush with asphalt
2. "⊡" cut in top headwall, BM 3 — 26.3' SW
3. Power pole — 57.6' SE
4. ℄ travelled way McCall Dr. — 2.5' E

℄ P.I. Sta. 20+98.80
N 653,113.097, E 11,482,107.783
1. Not Set, Office Location.

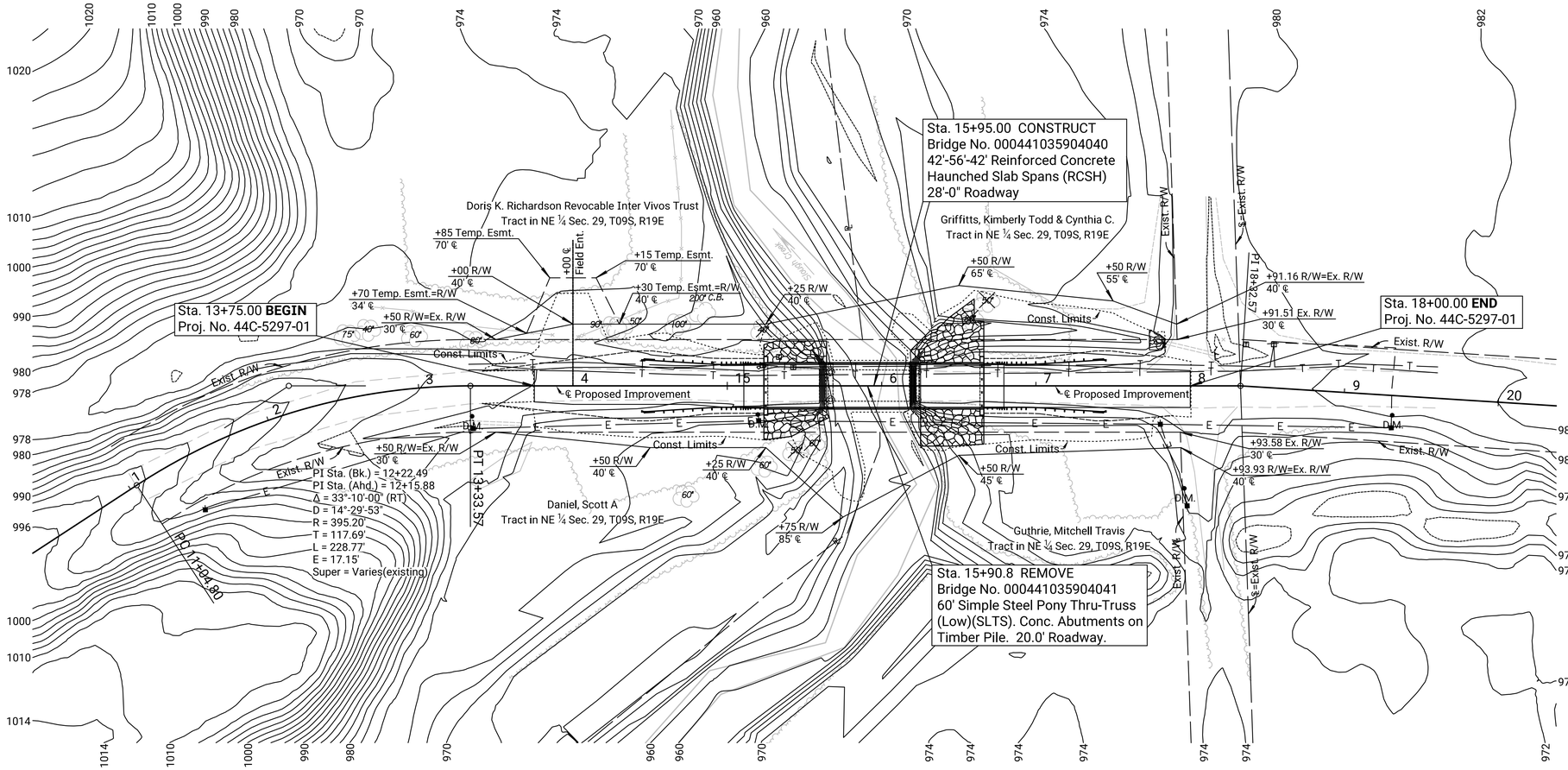
℄ P.I. Sta. 23+89.76
N 653,398.306, E 11,482,165.343
1. Not Set, Office Location.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	15	52

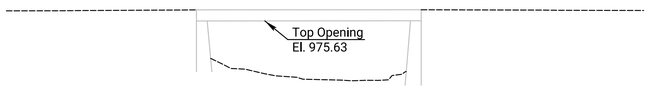
Reference Point #1
N 652,409.072, E 11,482,085.408
1. Set ½"x24" bar, 3" below ground
2. Top, north end 24" CMP — 30.1' SSE
3. North gatepost — 44.85' WNW
4. ℄ travelled way McCall Dr. — 12' W

Reference Point #2
N 652,800.898, E 11,481,567.032
1. Set ½"x24" bar, 2" below ground.
2. In bottom of south ditch.
3. Telephone marker post directly north.
4. ℄ travelled way 110th St. — 15' N

Scale: 1"=40"



PLAN



EXISTING BRIDGE OPENING
(Not to Scale)
Existing Waterway Area=848 sq. ft.

LEGEND
Aggregate Ditch Lining(6")
Slope Protection(Riprap Stone)

BM #1 Railroad spike in west face power pole.
Sta. 11+36.2, 36.5' Rt. Elev. 991.56

BM #2 USGS disc on east end north bridge seat.
Sta. 16+20.5, 13.5' Rt. Elev. 975.64

BM #3 "⊡" cut in top center of the north headwall of a 24" RCP. Sta. 18+15.3, 19.9' Lt. Elev. 979.00

BM #4 Railroad spike in west face power pole.
Sta. 22+16.4, 27.4' Rt. Elev. 988.86

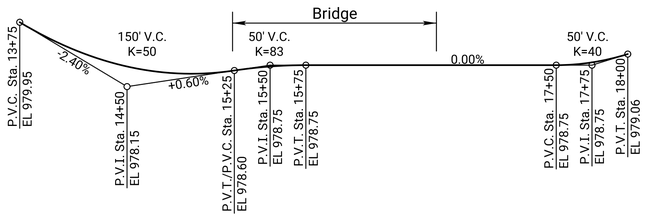
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
BR. NO. 000441035904040 STA. 15+95
CONTOUR MAP
McCALL DR. OVER SLOUGH CREEK
PROJ. NO. 44 C-5297-01 JEFFERSON CO.

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

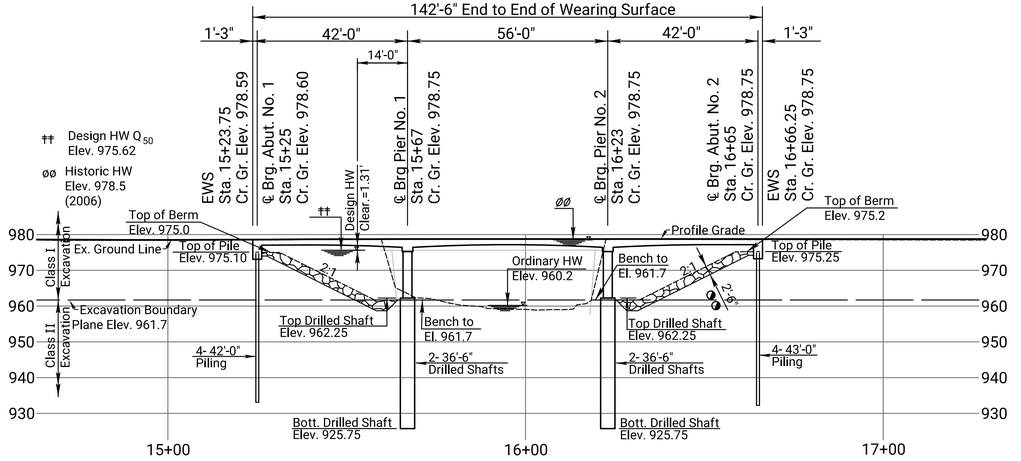
Plot Location:
Plotted By: CAM
File: Contour Map McCallSlough.dgn
Plot Date: 9-DEC-2024 16:50

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	16	52



PROPOSED PROFILE GRADE
(not to scale)

NOTE: Profile Grade = Crown Grade



ELEVATION
42'-56'-42' Reinforced Concrete Haunched Slab Spans (RCSH)
Pile Bent Abutments, Column Bent Piers on Drilled Shafts,
28'-0" Roadway

Slope Protection (Riprap Stone)(Typ.)

DRAINAGE DATA

Drainage Area	25.6 Sq. Mi.
Design Frequency	50 Yr.
Design Discharge (Q_{50})	10,600 cfs
Design High Water Elevation	975.62 Ft.
Change in Design Backwater	-3.38 Ft.
Design Backwater Elevation	976.30 Ft.
Overtopping Elevation (Sta. 14+95)	978.51 Ft.
Overtopping Discharge	11,750 cfs
Overtopping Frequency	50+ Yr.
Discharge at Q_{100}	12,700 cfs
Change in Backwater @ Q_{100}	-1.46 Ft.
Backwater Elevation @ Q_{100}	978.97 Ft.
Historic Highwater Elevation (2006)	978.5 Ft.
Ordinary Highwater Elevation	960.2 Ft.
Estimated Ordinary Highwater Discharge	25 cfs
Total Waterway Provided	1,599 Sq. Ft.
Design Waterway Provided	1,418 Sq. Ft.
Average Velocity at Q_{100}	7.9 fps
Average Velocity at Q_{50}	7.5 fps

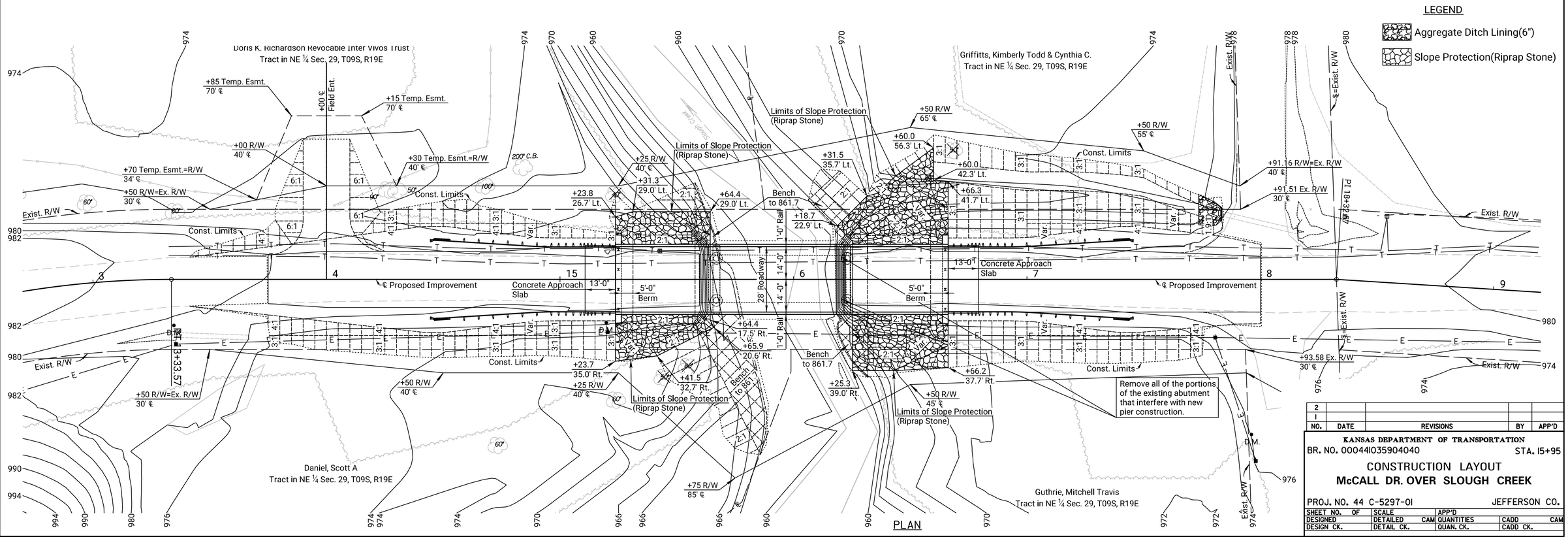
Scale: 1"=20"

BM #1 Railroad spike in west face power pole.
Sta. 11+36.2, 36.5' Rt. Elev. 991.56

BM #2 USGS disc on east end north bridge seat.
Sta. 16+20.5, 13.5' Rt. Elev. 975.64

BM #3 "□" cut in top center of the north headwall of a 24" RCP. Sta. 18+15.3, 19.9' Lt. Elev. 979.00

LEGEND
- Aggregate Ditch Lining(6")
- Slope Protection(Riprap Stone)



PLAN

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
BR. NO. 0004410359040 STA. 15+95

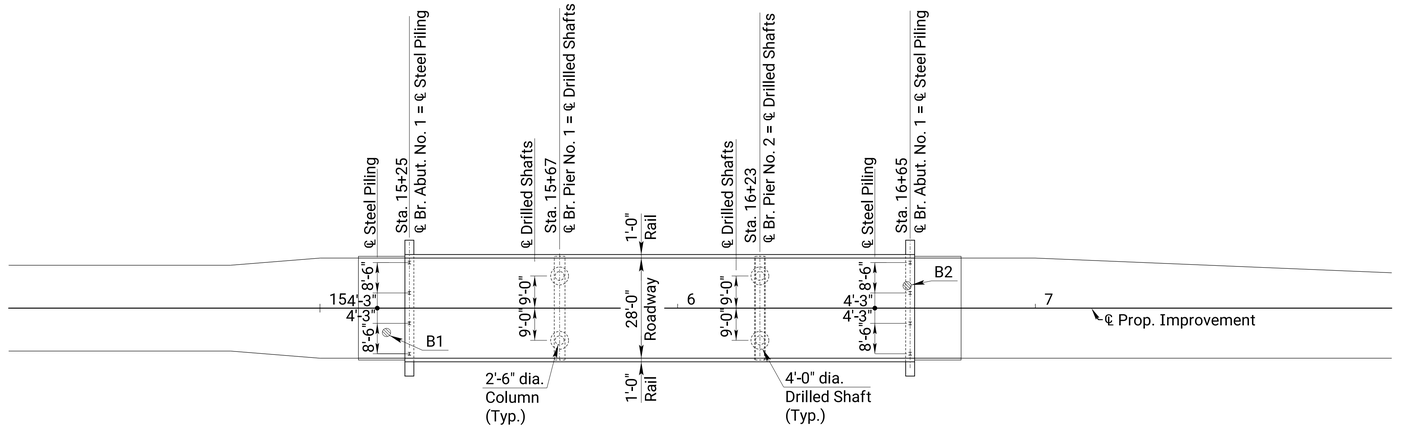
CONSTRUCTION LAYOUT
McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

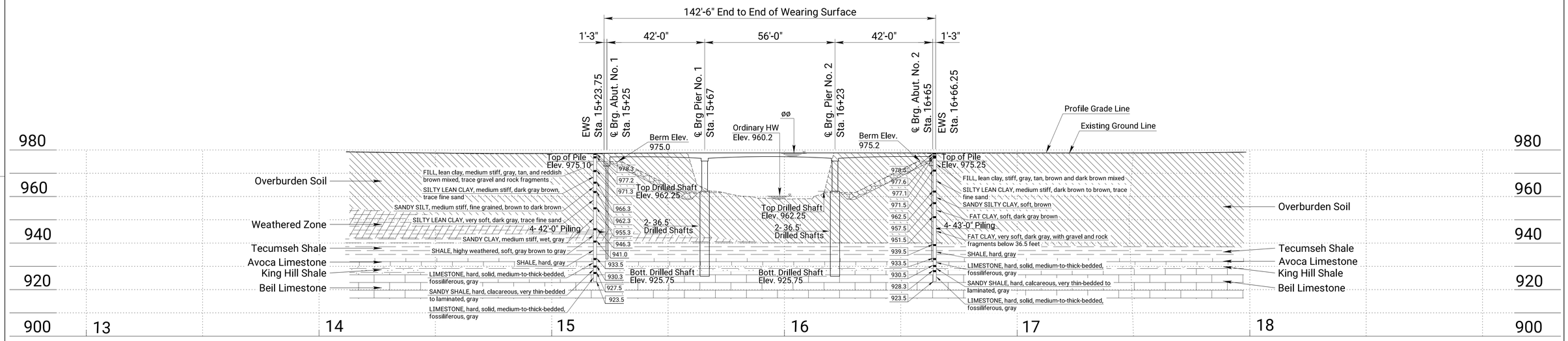
SHEET NO. OF	SCALE	APP'D		
DESIGNED	DETAILED CAM	QUANTITIES	CADD	CAM
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.	

Plot Location:
Plotted By: CAM
File: Const Layout McCallSlough.dgn
Plot Date: 9-DEC-2024 16:50

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	17	53



SCALE: 1"=20'



STANDARD GEOLOGIC SYMBOLS

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

SOUNDINGS

Core drill
Power auger
Hand tools
Air hammer
Cone (CPT) penetrometer
Shelby tube
Water level

GEOLOGIC PROFILE

000.0 Elevation interpolated or from adjacent soundings
000.0 Actual sounding elevation

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

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

AIR HAMMER DRIVE TEST
Scale: 1"= 100 Seconds Horiz.
1"= 10' Vert.
Graphic representation of Drive Test in seconds per foot penetration
0 100 200 300

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

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

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

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

BR. NO. 0004410359040404 STA. 15 + 95

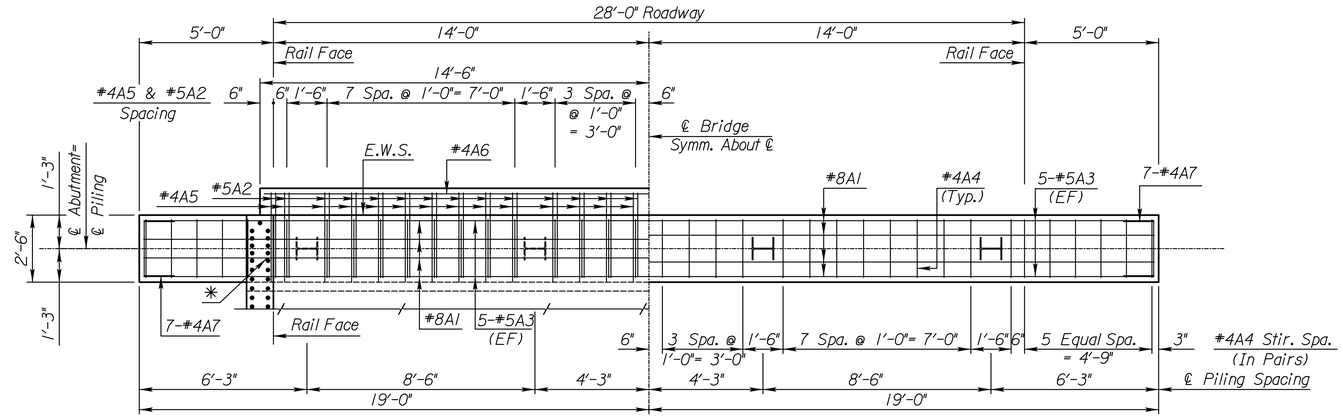
ENGINEERING GEOLOGY
McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

FINNEY & TURNIPSEED
TRANSPORTATION & CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

Plotted By: CAM
File: Geology McCallSlough.dgn
Plot Date: 12/9/2024 4:50:06 PM
Plot Location: $UNIT$

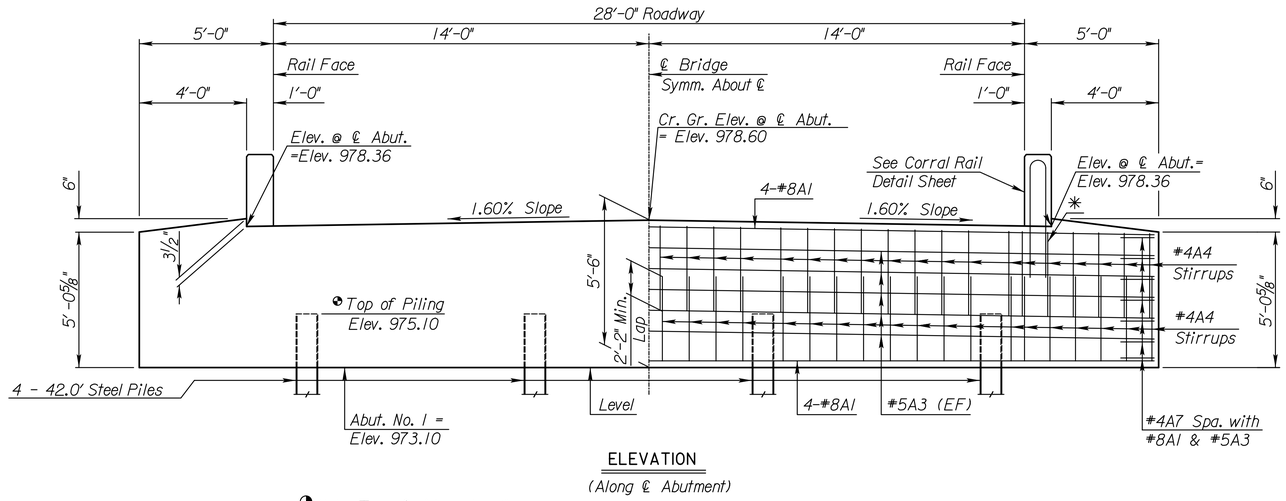
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	18	52



Reinforcing Steel in Top of Abutment

Reinforcing Steel in Bottom of Abutment

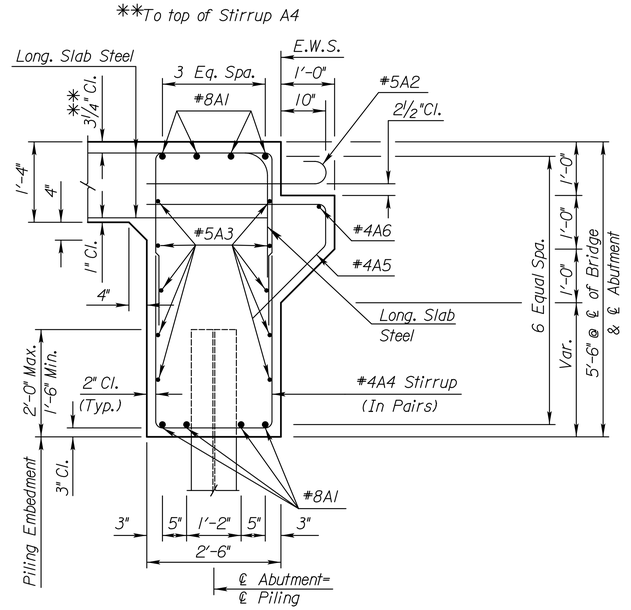
PLAN



ELEVATION

(Along ℄ Abutment)

Note: Top of piling elevations are based on 2'-0" maximum embedment.



TYPICAL SECTION

SUMMARY OF QUANTITIES – ABUTMENT NO. 1	
Class I Excavation - Cu. Yds.	55
Steel Pile (HP10x42) - Lin. Ft.	168
Cast Steel Pile Point - each	4

*Adjust stirrup to avoid conflict with rail bars.

Legend
EF = Each Face

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

BR. NO. 000441035904040 STA. 15 + 95

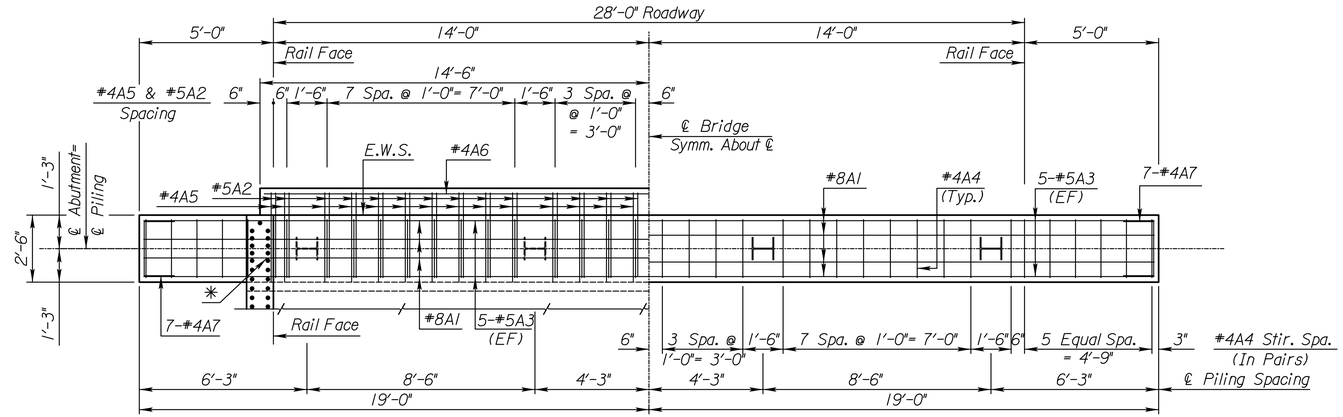
ABUTMENT NO. 1 DETAILS
McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

TINNEY & TURNIPSEED
TRANSPORTATION & CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

Plotted By: CAM
File: abutmentdetails.dgn
Plot Date: 9-DEC-2024 16:50
Plot Location:

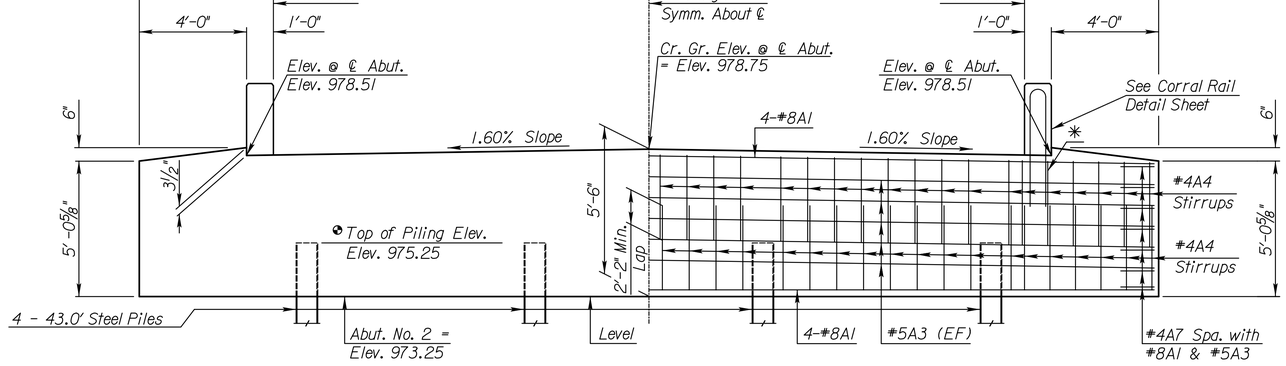
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	19	52



Reinforcing Steel in Top of Abutment

Reinforcing Steel in Bottom of Abutment

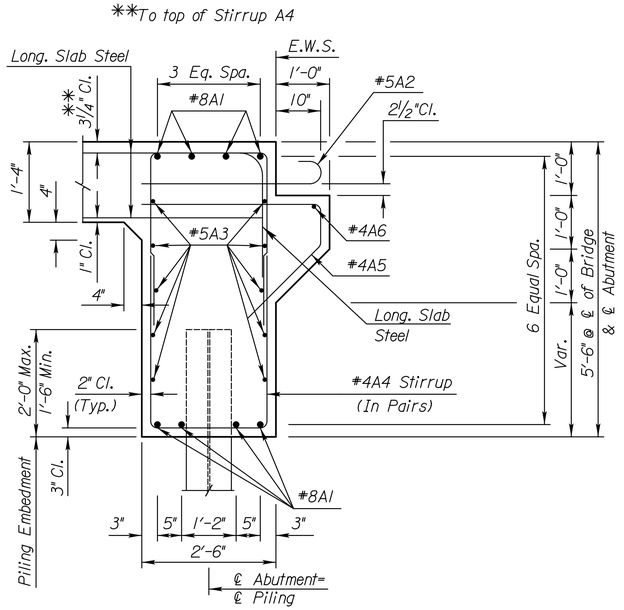
PLAN



ELEVATION

(Along ℄ Abutment)

Note: Top of piling elevations are based on 2'-0" maximum embedment.



TYPICAL SECTION

**To top of Stirrup A4

*Adjust stirrup to avoid conflict with rail bars.

SUMMARY OF QUANTITIES – ABUTMENT NO. 2	
Class I Excavation - Cu. Yds.	55
Steel Pile (HP10x42) - Lin. Ft.	172
Cast Steel Pile Point - each	4

Legend

EF = Each Face

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

BR. NO. 000441035904040 STA. 15 + 95

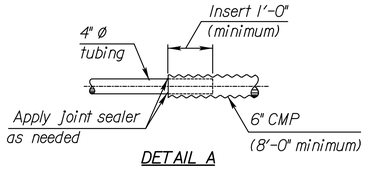
ABUTMENT NO. 2 DETAILS
McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

TINNEY & TURNIPSEED
TRANSPORTATION & CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

Plotted By: CAM
File: abutmentdetails.dgn
Plot Date: 9-DEC-2024 16:50
Plot Location:

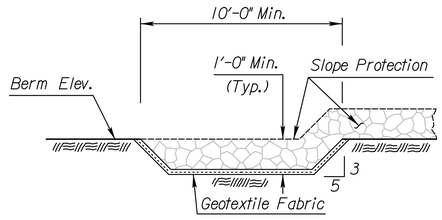
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	20	52



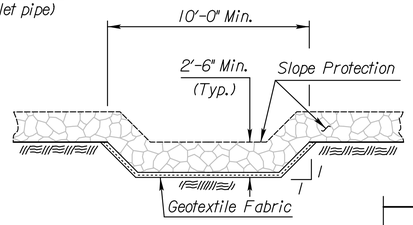
DETAIL A

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

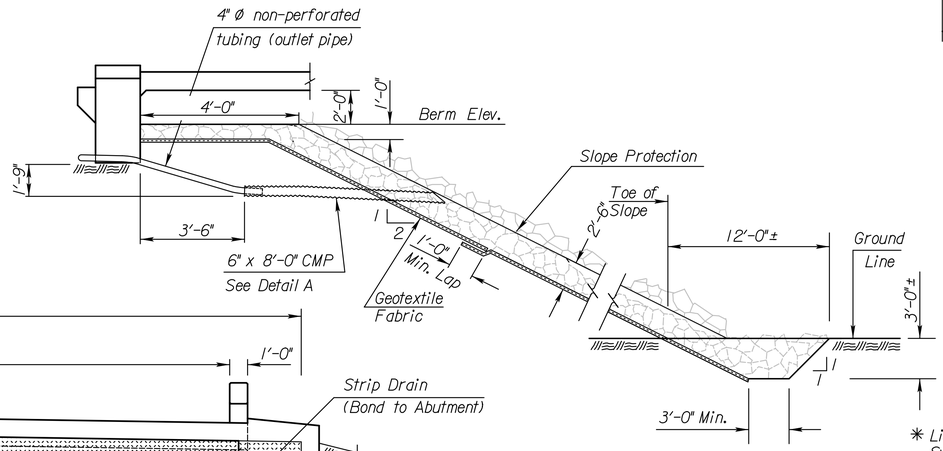
PLAN



SECTION B-B

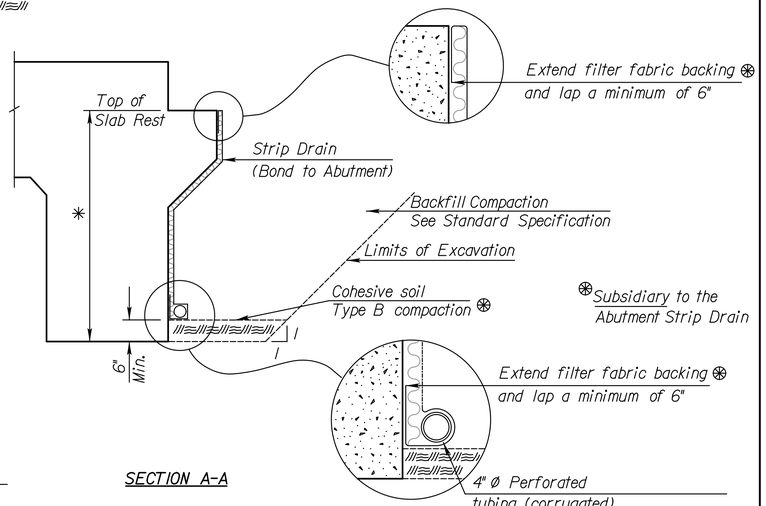


SECTION D-D



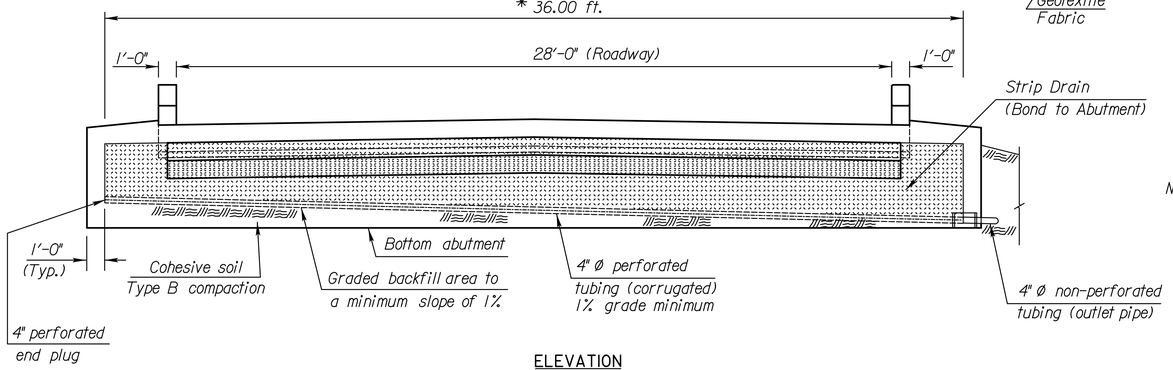
SECTION C-C

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



SECTION A-A

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



ELEVATION

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.

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

SUMMARY OF QUANTITIES (2 Abutments)	
Abutment Strip Drain	36 Sq. Yds.
Bridge Backwall Protection System	44 Sq. Yds.
Geotextile Fabric	124 Sq. Yds.
Items subsidiary to Strip Drain	
4" Ø Perforated Pipe	84 Lin. Ft.
4" Ø Outlet Pipe	20 Lin. Ft.
6" Ø CMP	16 Lin. Ft.

NO.	DATE	REVISIONS	BY	APP'D
5	4/7/14	Current Release	JPJ	CER
4	2/12/14	Added Benchmark	JPJ	CER
3	8/3/10	Geotextile In Drip-line Only	JPJ	TLF
2	7/14/08	Change Type 'C' Compaction to 'B'	JPJ	KFH
1	4-01-04	Current release		

KANSAS DEPARTMENT OF TRANSPORTATION

BR. NO. 000441035904040 STA. 15+95

ABUTMENT STRIP DRAIN

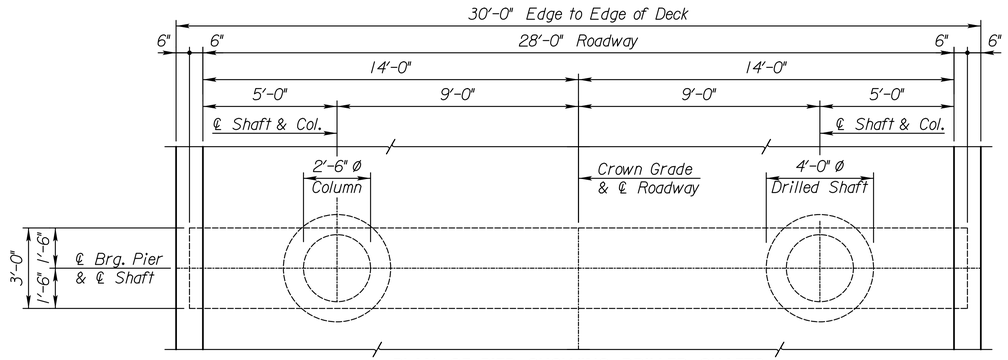
McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

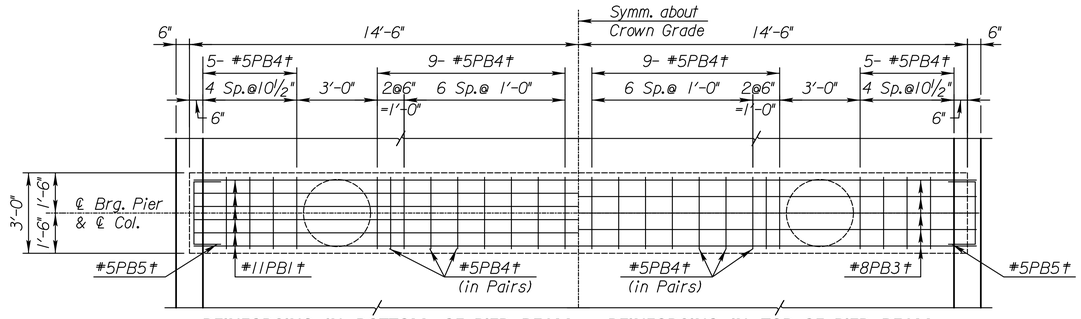
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED LRR	QUANTITIES	CADD BAF
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

Std. Base File: br104c.dgn | Plot Location:
Plotted By: CAM
File: bss104c-01.dgn
Plot Date: 9-DEC-2024 16:50

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	21	52

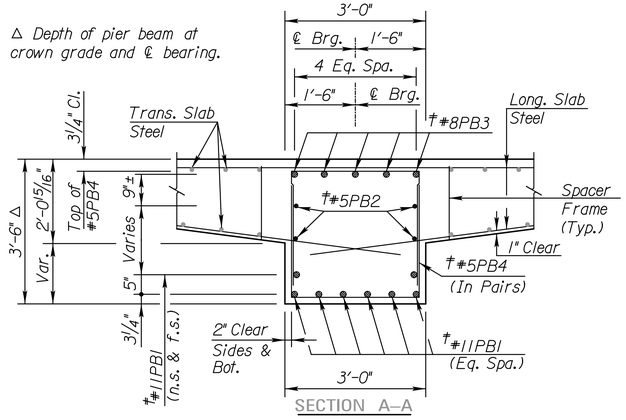


PLAN OF PIER SHOWING DRILLED SHAFTS



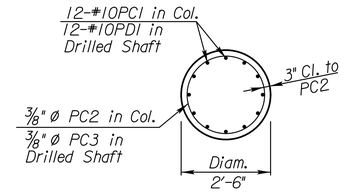
REINFORCING IN BOTTOM OF PIER BEAM

REINFORCING IN TOP OF PIER BEAM

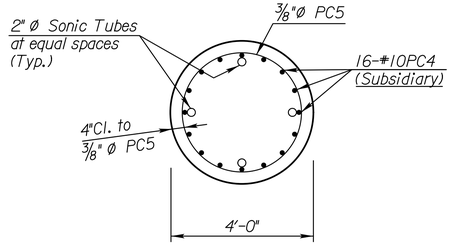


SECTION A–A

Reinforcing shown thus † shall be epoxy coated. See Auxiliary Superstructure Details for Reinforcing



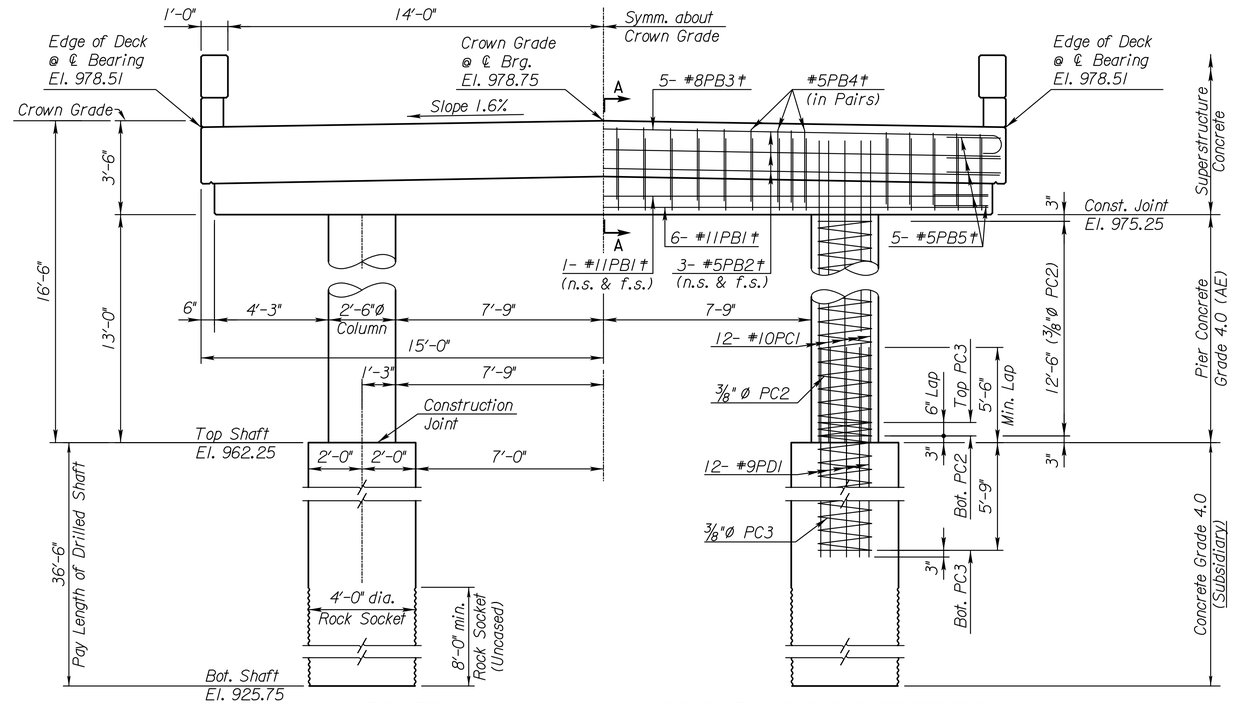
SECTION THRU COLUMN SHOWING REINFORCING



SECTION THRU DRILLED SHAFT

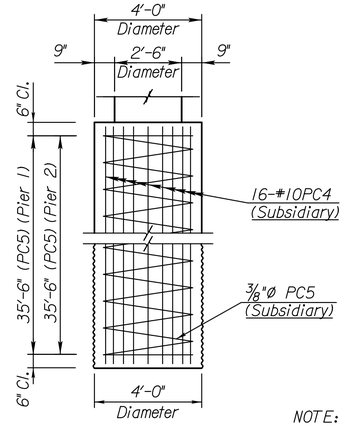
NOTE: Tubes for sonic testing shall extend 1'-0" above the top of shaft.

NOTE: The Casing Method shall be used for construction of drilled shafts. Extend temporary casing at least 1'-0" into shale or rock. Permanent casings are required. See Standard Specifications. The minimum uncased rock socket length shall be 8'-0".



HALF ELEVATION

HALF ELEVATION SHOWING REINFORCING



ELEVATION OF DRILLED SHAFT SHOWING REINFORCING

NOTE: See "Auxiliary Pier Details" sheet for additional information.

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

BR. NO. 000441035904040 STA. 15 + 95

PIER DETAILS

McCALL DR. OVER SLOUGH CREEK

PROJ. NO. 44 C-5297-01 JEFFERSON CO.

FINNEY & TURNIPSEED
TRANSPORTATION & CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	22	52

FOR INFORMATION ONLY

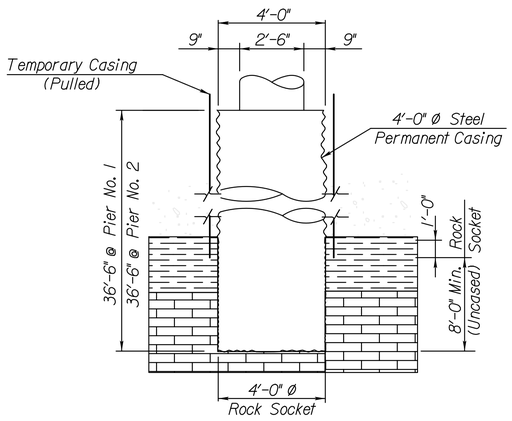
PIER #1 - DRILLED SHAFT SUBSIDIARY REINFORCING Non-Epoxy - Grade 60			
Bar	1PC4	1PC5	
Number	32	2	
Size	#10	3/8"Ø	
Length	36'-0"	*	
Wt.(lbs.)	4,957	*	

*See diagram below

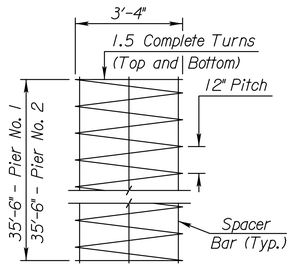
FOR INFORMATION ONLY

PIER #2 - DRILLED SHAFT SUBSIDIARY REINFORCING Non-Epoxy - Grade 60			
Bar	2PC4	2PC5	
Number	32	2	
Size	#10	3/8"Ø	
Length	36'-0"	*	
Wt.(lbs.)	4,957	*	

*See diagram below



ELEVATION OF DRILLED SHAFT SHOWING TEMPORARY & PERMANENT CASING (Reinforcing Steel Not Shown)



3/8"Ø PC5

Weight per Spiral: 257.3 lbs. (incl. spa. bars)
Pier 1 = 514.6 lbs. (2 req'd)
Pier 2 = 514.6 lbs. (2 req'd)

(3/8"Ø smooth or deformed bar)

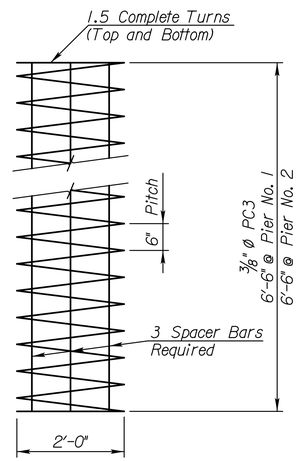
Spiral reinforcing shall meet the requirements of ASTM A615 Grade (60 or 40) or ASTM A82.

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

FOR INFORMATION ONLY

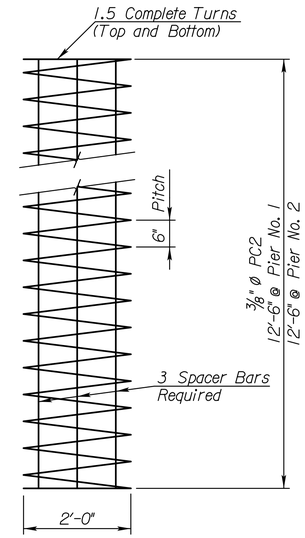
DRILLED SHAFT SUBSIDIARY CONCRETE Grade 4.0	
Pier No. 1	34.0 Cu. Yds.
Pier No. 2	34.0 Cu. Yds.

See Auxiliary Superstructure Details for Pier Beam Reinforcing



3/8"Ø PC3

Pier 1 Weight each = 51.9 Lbs.
Pier 2 Weight each = 51.9 Lbs.



3/8"Ø PC2

Pier 1 Weight each = 93.4 Lbs.
Pier 2 Weight each = 93.4 Lbs.

BENDING DIAGRAMS

(All dimensions are out to out of bars.)

SCHEDULE OF REINFORCING STEEL PIER NO. 1				
Bar	PC1	PC2	PC3	PD1
Number	24	2	2	24
Size	#10	3/8"Ø	3/8"Ø	#10
Length	15'-9"	*	*	11'-6"

*See Bending Diagrams

SCHEDULE OF REINFORCING STEEL PIER NO. 2				
Bar	PC1	PC2	PC3	PD1
Number	24	2	2	24
Size	#10	3/8"Ø	3/8"Ø	#10
Length	15'-9"	*	*	11'-6"

*See Bending Diagrams

SUMMARY OF QUANTITIES		
	Pier 1	Pier 2
Concrete Grade 4.0(AE) - Cu. Yds.	4.7	4.7
Reinforcing Steel (Gr. 60) - Lbs.	3,100	3,100
Drilled Shaft (48")(Cased) - Lin. Ft.	73	73
Investigative Core Hole	42	42

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

BR. NO. 000441035904040 STA. 15 + 95

AUXILIARY PIER DETAILS
McCALL DR. OVER SLOUGH CREEK

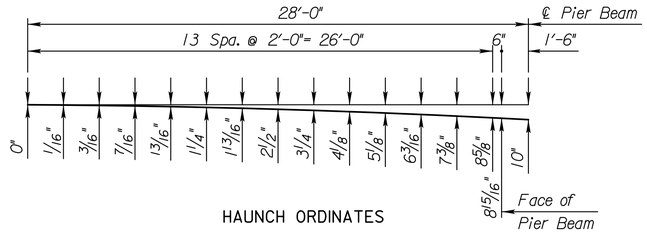
PROJ. NO. 44 C-5297-01 JEFFERSON CO.

FINNEY & TURNIPSEED
TRANSPORTATION & CIVIL ENGINEERING, L.L.C.
TOPEKA, KANSAS

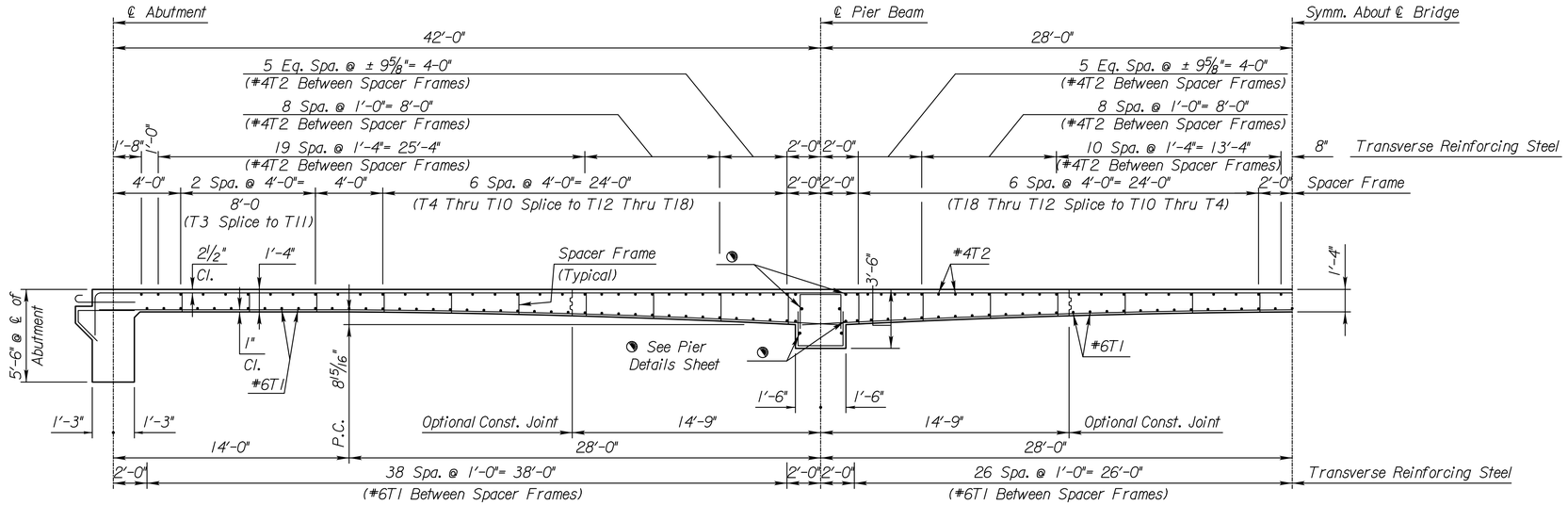
Design KEM
Details CAM
Quant.

Chk. CAM 12/9/2024
Chk. DIB 4:50:09 PM
Chk. $FILE$

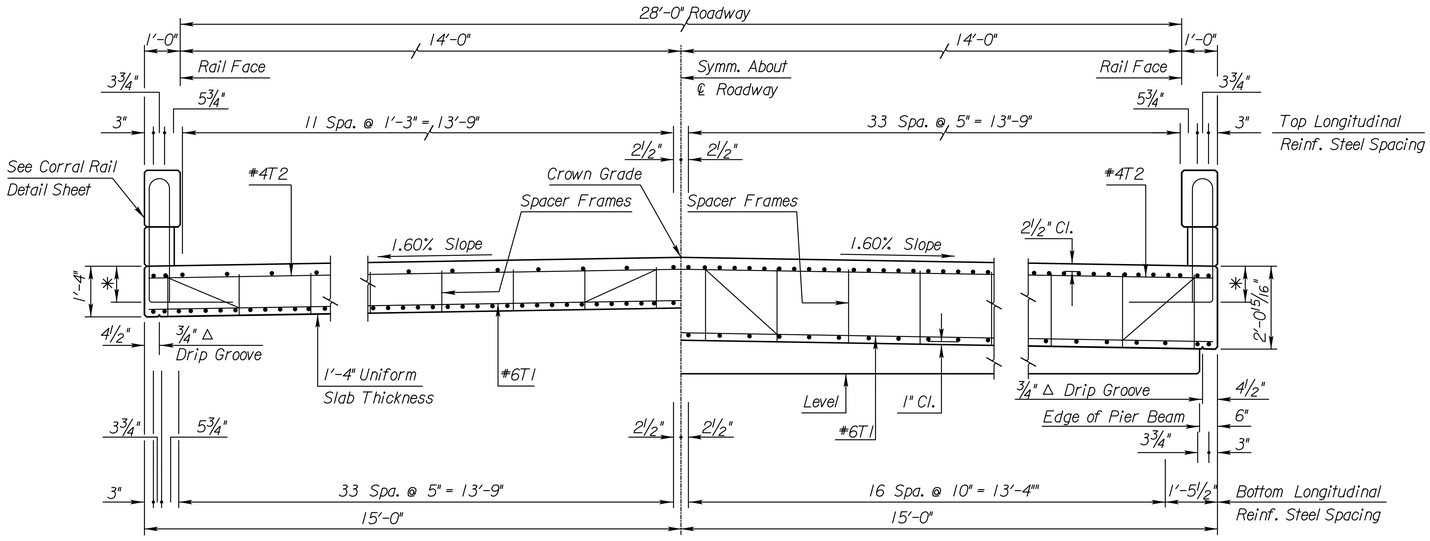
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	23	52



HAUNCH ORDINATES



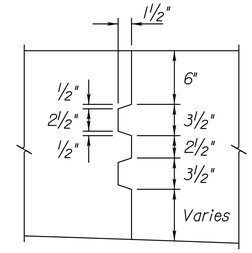
HALF LONGITUDINAL SECTION ALONG ℄ BRIDGE



Half Section Near Mid-Span — Half Section at Face of Pier Beam

TYPICAL SECTION OF SLAB
(End Span Shown)

* See Corral Rail Detail Sheet.



TRANSVERSE SLAB CONSTRUCTION JOINT
(Optional)

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

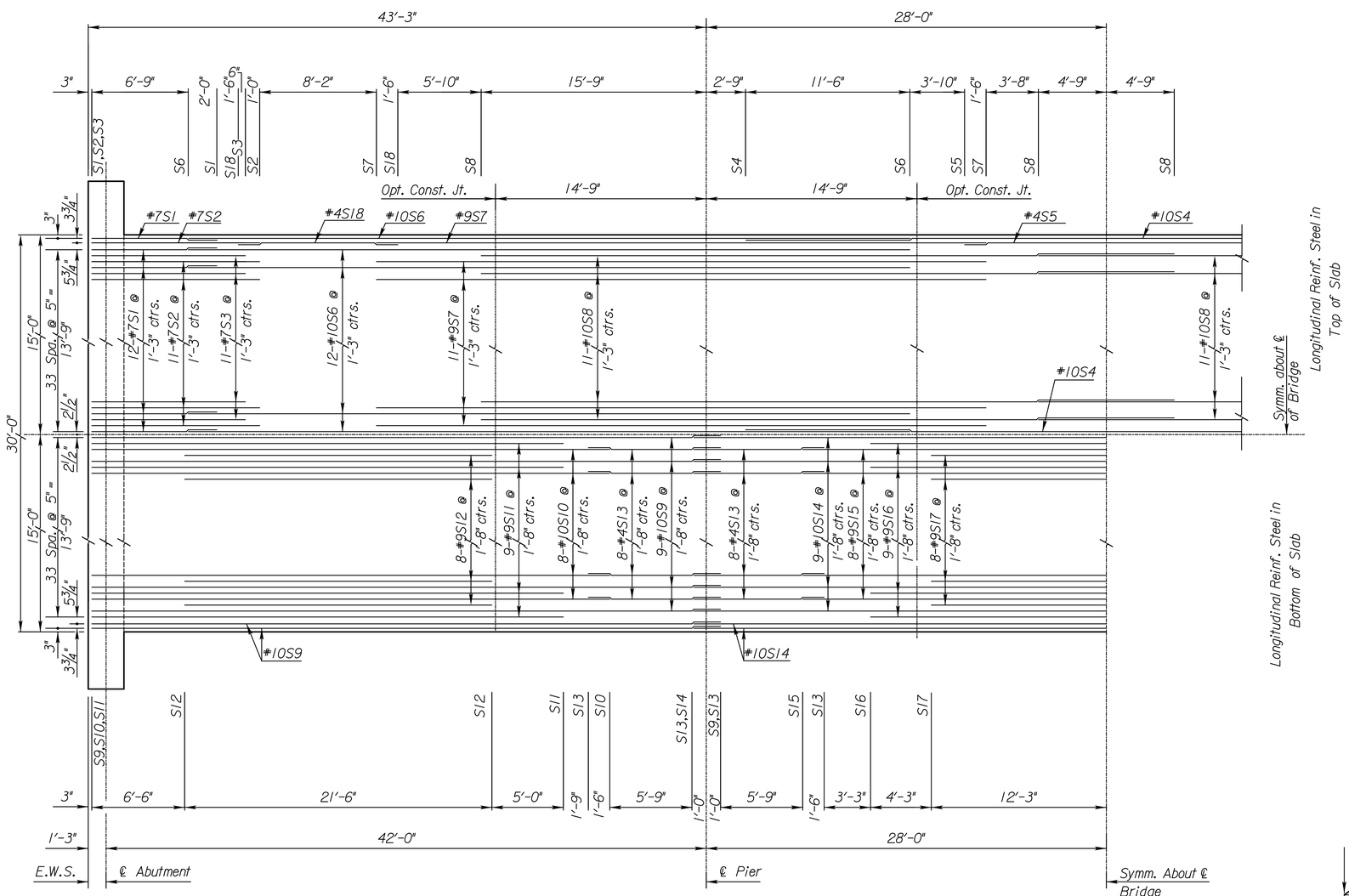
BR. NO. 000441035904040 STA. 15+95

SUPERSTRUCTURE DETAILS
McCALL DR. OVER SLOUGH CREEK

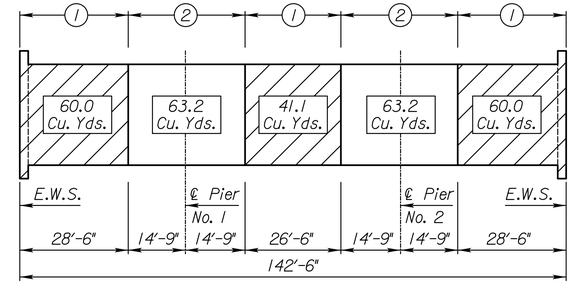
PROJ. NO. 44 C-5297-01 JEFFERSON CO.

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

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	24	52



HALF PLAN



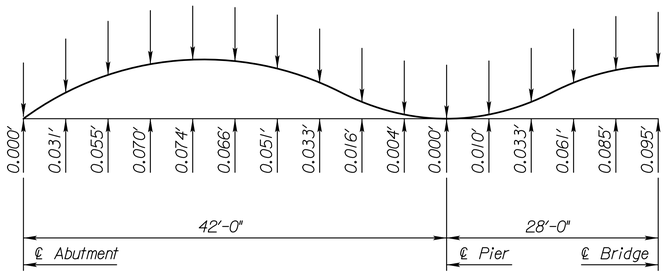
CONCRETE PLACING SEQUENCE DIAGRAM

CONCRETE PLACING SEQUENCE

When long span steel beams having a concrete dead load deflection greater than 1/4" are used or when timber falsework with greater than 12'-0" clear span is used, follow the placing sequence shown. Segmental, combined or continuous pours are allowed, but stop a discontinuous pour at a construction joint short of a pier.

When timber falsework with 12'-0" or less clear span is used, the Contractor, subject to the approval of the Engineer, may use a continuous pour or may discontinue the pour at any construction joint shown.

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



DEAD LOAD CAMBER DIAGRAM AT TENTH POINTS

Long Term Deflections = Initial Deflections x 3.5
(Initial Deflections Based on $E_c = 3.950 \times 10^6$ p.s.i.)
(camber values in feet)

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

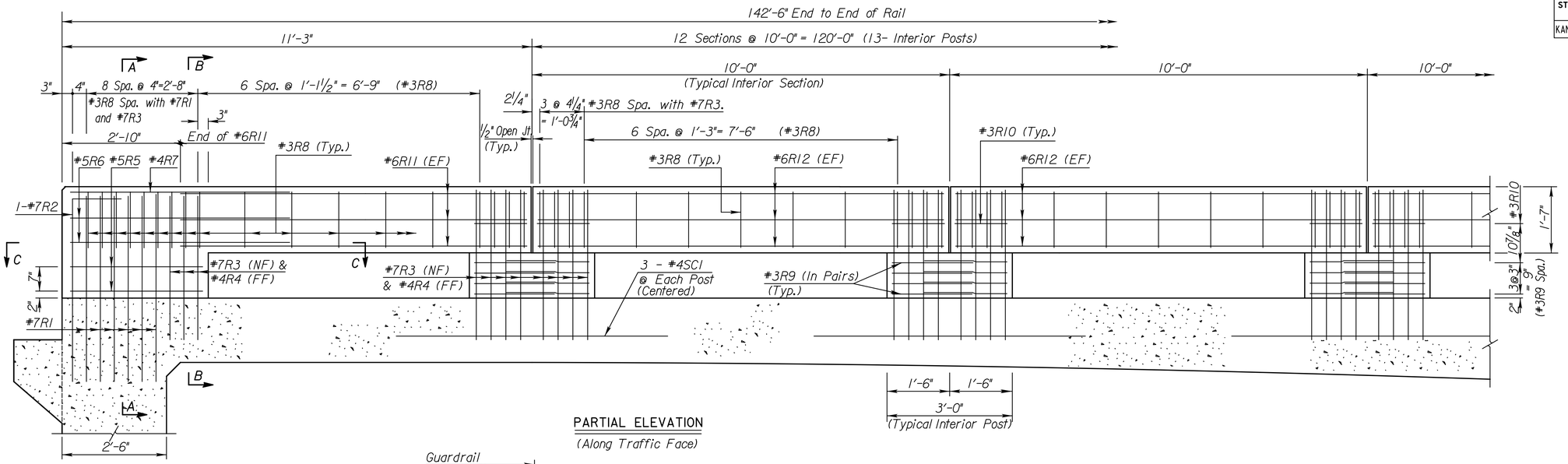
BR. NO. 000441035904040 STA. 15+95

SUPERSTRUCTURE DETAILS
McCALL DR. OVER SLOUGH CREEK

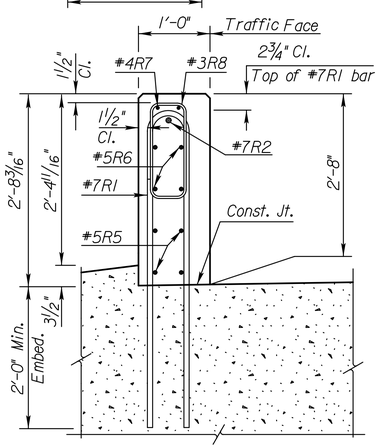
PROJ. NO. 44 C-5297-01 JEFFERSON CO.

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

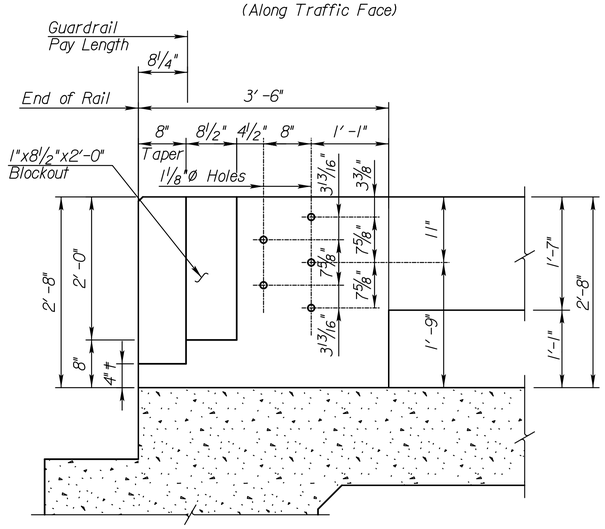
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	25	52



PARTIAL ELEVATION
(Along Traffic Face)



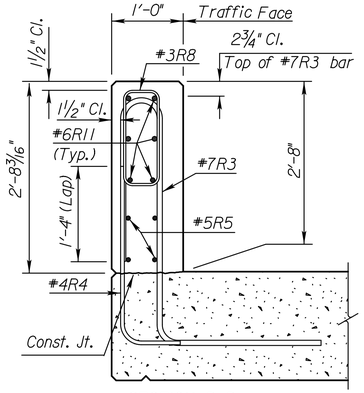
SECTION A-A



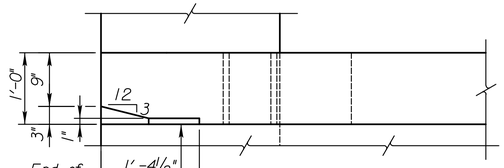
ELEVATION
(Dimensions at traffic face of rail.)

TYPICAL INTERIOR POST

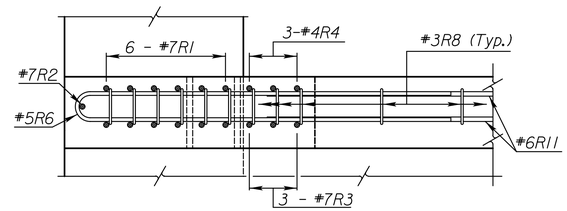
SECTION THRU POST



SECTION B-B



PLAN



SECTION C-C

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

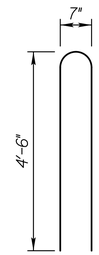
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
BR. NO. 000441035904040 STA. 15+95
CORRAL RAIL DETAILS
McCALL DR. OVER SLOUGH CREEK
PROJ. NO. 44 C-5297-01 JEFFERSON CO.

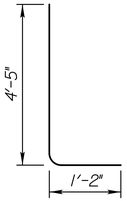
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

Std. Base File:
Plotted By: CAM
Plot Location:
File: superstructure details.dgn
Plot Date: 9-DEC-2024 16:50

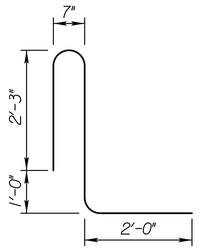
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	26	52



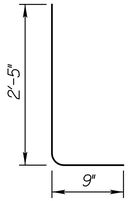
R1



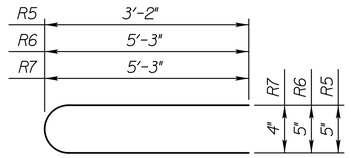
R2



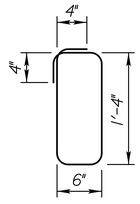
R3



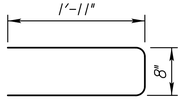
R4



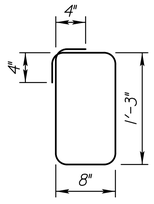
R5, R6 & R7



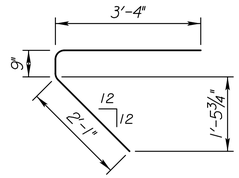
R8



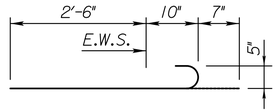
R9



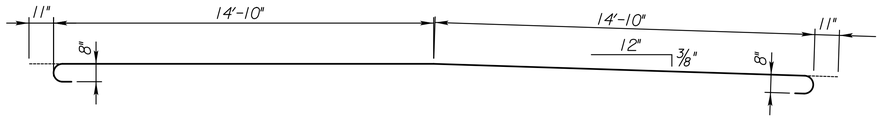
R10



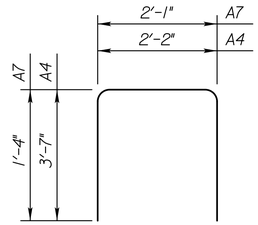
A5



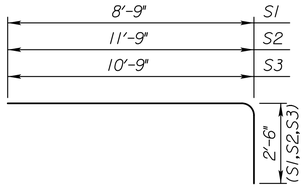
A2



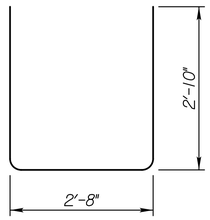
PB3



A4 & A7



S1, S2 & S3



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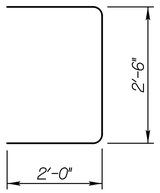

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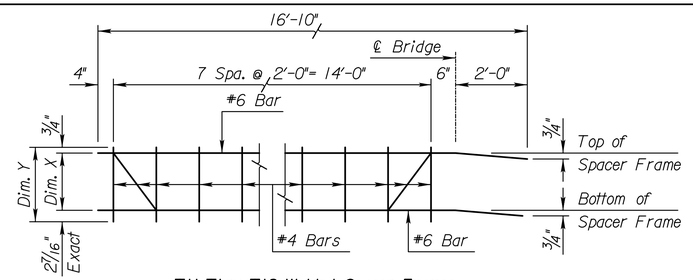
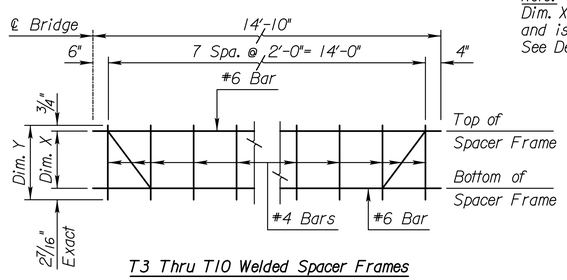


T11 Thru T18 Welded Spacer Frames

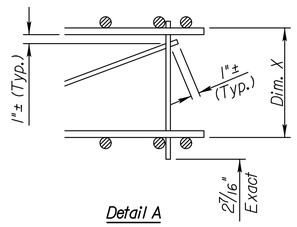


T3 Thru T10 Welded Spacer Frames

Note:
Dim. X is out to out and is an exact dim. See Detail A.

⊗ SPACER FRAMES (Epoxy Coated)			
Mark	No. Ea.	Dim. X	Dim. Y
T3, T11	6	9 5/8"	1'-0 13/16"
T4, T12	4	9 11/16"	1'-0 7/8"
T5, T13	4	10 1/16"	1'-1 1/4"
T6, T14	4	10 1/8"	1'-2 1/16"
T7, T15	4	1-0 1/8"	1'-3 5/16"
T8, T16	4	1'-1 3/4"	1'-4 15/16"
T9, T17	4	1'-3 13/16"	1'-7"
T10, T18	4	1'-6 1/4"	1'-9 7/16"

Weight of spacer frames included in the weight of reinforcing steel.



Detail A

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

BILL OF REINFORCING STEEL
Epoxy Coated - Grade 60

	Straight Bars				Bent Bars			
	Mark	Size	Number	Length	Mark	Size	Number	Length
Superstructure	S4	#10	4	50'-6"	R1	#7	24	9'-3"
	S6	#10	52	50'-6"	R2	#7	4	5'-7"
	S8	#10	44	48'-6"	R3	#7	220	7'-9"
	S9	#10	44	44'-0"	S1	#7	52	11'-3"
	S10	#10	32	36'-3"	S2	#7	48	14'-3"
	S14	#10	22	58'-0"	S3	#7	44	13'-3"
	S7	#9	48	42'-8"	A2	#5	56	3'-11"
	S11	#9	36	33'-0"	R5	#5	8	6'-6"
	S12	#9	32	21'-6"	R6	#5	8	10'-8"
	S15	#9	16	42'-6"				
	S16	#9	18	33'-0"	A4	#4	152	9'-4"
	S17	#9	16	24'-6"	A5	#4	56	6'-2"
					A7	#4	28	4'-9"
	A1	#8	16	37'-8"	R4	#4	220	3'-2"
					R7	#4	4	10'-8"
	R11	#6	24	8'-3"				
	R12	#6	144	9'-8"				
	T1	#6	97	29'-8"	R8	#3	384	4'-4"
					R9	#3	208	4'-6"
	A3	#5	20	37'-8"	R10	#3	52	4'-6"
	A6	#4	2	28'-8"	T3-T18			⊗
	S5	#4	2	19'-10"				
	S13	#4	64	9'-3"				
	S18	#4	4	11'-2"				
	SC1	#4	78	6'-6"				
	T2	#4	82	29'-8"				
Pier Beam	PB1	#11	16	28'-8"	PB3	#8	10	31'-6"
	PB2	#5	8	29'-8"	PB4	#5	112	8'-4"
					PB5	#5	20	6'-6"

⊗ See Bending Diagram

SUMMARY OF QUANTITIES - SUPERSTRUCTURE

Concrete Grade 4.0 (AE) (SW) †	307.2 Cu. Yds.
Reinforcing Steel Grade 60 (Epoxy)	90,250 Lbs.

† Includes 37.4 Cu. Yds for Abutments

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
BR. NO. 0004410359040 40 STA. 15+95
BILL OF REINFORCING STEEL
& BENDING DIAGRAMS
McCALL DR. OVER SLOUGH CREEK
PROJ. NO. 44 C-5297-01 JEFFERSON CO.

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

SLAB ELEVATIONS

				Formwork				Screed			Thickness			Deck Profile	
								9	10	11	12	13	14	15	16
Survey	Station (1)(16)	† Location (13)	Transverse Location (13)	Estimated Falsework Crush (inch) (1)(4)	Target Elevation TOF (1)(6)	Actual Elevation TOF (2)	TOF Variance (QA/QC) (± inch) (2)(5)	Target Screed El. = TOC El. (1)(6)	Actual Bottom of Screed Elevation Prior to Pour (2)	Screed Variance (QA/QC) (± inch) (2)(7)	Plan Deck Thickness (inch) (1)	Measured Deck Thickness (inch) (2)(8)	Deck Thickness Variance (QA/QC) (± inch) (2)(9)	Plan TOC El. (1)	Actual TOC El. Optional Survey Date: (3)
A	15+25.00	℄ Brg. of Abut. #1	Left Fascia					978.36						978.36	
			Crown Gr. ℄					978.60						978.60	
			Right Fascia					978.36						978.36	
B	15+26.25	Interior Face of Abut. #1	Left Fascia		977.03						16			978.37	
			Crown Gr. ℄		977.27						16			978.61	
			Right Fascia		977.03						16			978.37	
C	15+41.80	4/10 Point from Abut. #1	Left Fascia	1/4	977.20			978.54			16 1/8			978.44	
			Crown Gr. ℄	1/4	977.44			978.78			16 1/8			978.68	
			Right Fascia	1/4	977.20			978.54			16 1/8			978.44	
D	15+65.50	Span #1 Face of Pier Beam	Left Fascia	1/4	976.45						24 5/16			978.50	
			Crown Gr. ℄	1/4	976.69						24 5/16			978.74	
			Right Fascia	1/4	976.45						24 5/16			978.50	
E	15+67.00	℄ Brg. of Pier #1	Left Fascia					978.51						978.51	
			Crown Gr. ℄					978.75						978.75	
			Right Fascia					978.51						978.51	
F	15+68.50	Span #2 Face of Pier Beam	Left Fascia	1/4	976.45						24 5/16			978.51	
			Crown Gr. ℄	1/4	976.69						24 5/16			978.75	
			Right Fascia	1/4	976.45						24 5/16			978.51	
G	15+95.00	Midpoint of Span #2	Left Fascia	1/4	977.29			978.63			16			978.51	
			Crown Gr. ℄	1/4	977.53			978.87			16			978.75	
			Right Fascia	1/4	977.29			978.63			16			978.51	
H	16+21.50	Span #2 Face of Pier Beam	Left Fascia	1/4	976.45						24 5/16			978.51	
			Crown Gr. ℄	1/4	976.69						24 5/16			978.75	
			Right Fascia	1/4	976.45						24 5/16			978.51	
I	16+23.00	℄ Brg. of Pier #2	Left Fascia					978.51						978.51	
			Crown Gr. ℄					978.75						978.75	
			Right Fascia					978.51						978.51	
J	16+24.50	Span #3 Face of Pier Beam	Left Fascia	1/4	976.45						24 5/16			978.51	
			Crown Gr. ℄	1/4	976.69						24 5/16			978.75	
			Right Fascia	1/4	976.45						24 5/16			978.51	
K	16+48.20	4/10 Point from Abut. #2	Left Fascia	1/4	977.26			978.60			16 1/8			978.51	
			Crown Gr. ℄	1/4	977.50			978.84			16 1/8			978.75	
			Right Fascia	1/4	977.26			978.60			16 1/8			978.51	
L	16+63.75	Interior Face of Abut. #2	Left Fascia		977.18						16			978.51	
			Crown Gr. ℄		977.42						16			978.75	
			Right Fascia		977.18						16			978.51	
M	16+65.00	℄ Brg. of Abut. #2	Left Fascia					978.51						978.51	
			Crown Gr. ℄					978.75						978.75	
			Right Fascia					978.51						978.51	

† Stationing shown from south to north

NOTE: The Contractor will turn in a completed copy of this table to the Engineer. The Engineer will submit this table on a half size sheet to the State Bridge Office, KDOT, Bureau of Design, Topeka, KS.

* It is assumed that piling have been driven to design bearing and checked by ENR formula (QA/QC). No allowance for pile settlement is included in crush.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	27	52

Pour Dates (2)	
	Deck
	Left Rail (13)
	Right Rail(13)

Survey Data (1)(11)	
Bench Mark No.	Elevation
#1	991.56
#2	975.64
#3	979.00

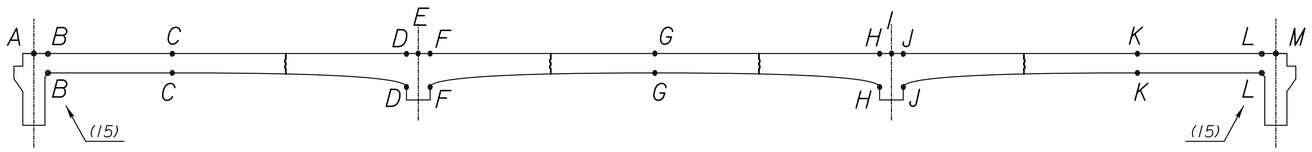
Crown Grade Profile (1)(12)	
15+50	VPI Station
978.60	VPI Elevation
0.60%	G1 %
0.00%	G2 %
0.5	L in Station's

Slab Thickness (1)		Span Data (1)	
16	Uniform Depth (inch)	HL-93	Design Loading
8 15/16	Haunch Depth @ Face of PB (inch)	42	Span #1 (ft)
		56	Span #2 (ft)
1/8	Haunch Depth @ 0.4 Point (inch)	2.5"	Clear Cover (inch)

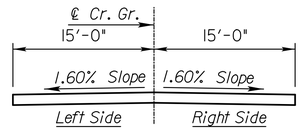
Roadway Data (1)(10)(13)	
30	Deck Width (ft) (14)
-1.6%	% Slope Left (±)
-1.6%	% Slope Right (±)
0	Skew (dd:mm:ss)

Camber (1)(17)	
0.074	Span #1 0.4 Point (ft)
0.095	Span #2 Midspan (ft)

(1) By the Design Engineer
(2) By the Contractor
(3) By Request
*(4) Estimated crush for typical falsework. Revise estimate if/when more accurate information becomes available.
(5) (col 7 - col 6)x12
(6) Crush (Take Up) and camber must be included
(7) (col 10 - col 9)x12
(8) (col 10 - col 7)x12
(9) (col 13 - col 12)
(10) If transition falls on the bridge, then enter "Varies" for the % Slope
(11) From "Construction Layout" sheet
(12) If bridge is not on the vertical curve, enter Abutment #1 ℄ bearing elevation from the "Construction Layout" sheet. Represent a change in grade with G1 only.
(13) Looking Up-Station
(14) Out-to-Out
(15) Ignore Fillet
(16) Non-skewed bridges only require ℄ stations.
(17) Ignore theoretical camber at face of pier beams.



ELEVATION OF SLAB



TYPICAL SECTION
(Looking Up-Station)

Legend
TOF = Top of Formwork
TOC = Top of Concete
QA = Quality Assurance
QC = Quality Control

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

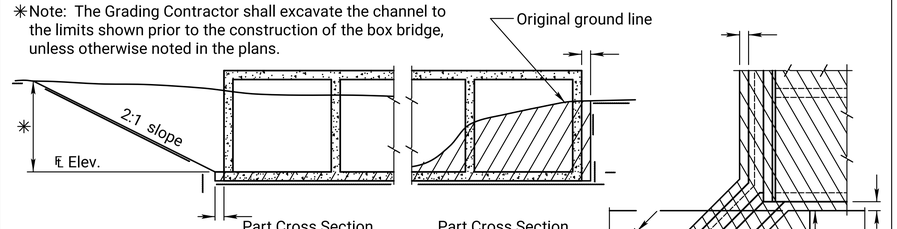
KANSAS DEPARTMENT OF TRANSPORTATION
BR. NO. 000441035904040 STA. 15+95
SLAB ELEVATIONS
PROJ. NO. 44 C-5297-01 JEFFERSON CO.

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

Plot Location:
Plotted By: CAM
File: slabelevations.dgn
Plot Date: 9-DEC-2024 16:50

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	28	52

✳Note: The Grading Contractor shall excavate the channel to the limits shown prior to the construction of the box bridge, unless otherwise noted in the plans.

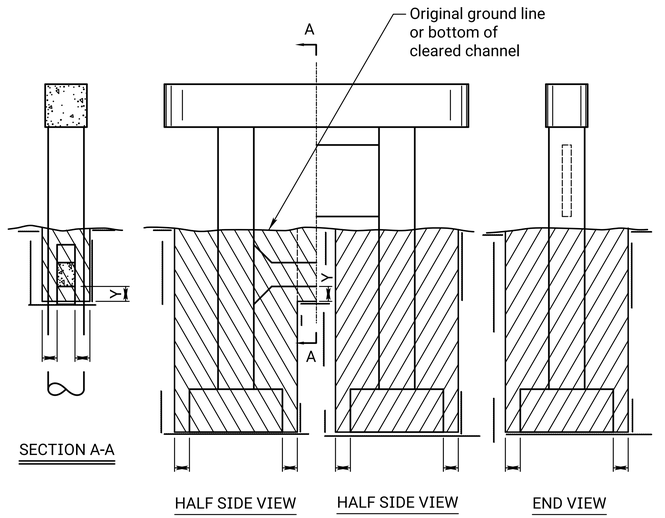


Note: Typical Class III Excavation for box bridges shall be below the "cleared" channel unless otherwise noted on the plans.

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

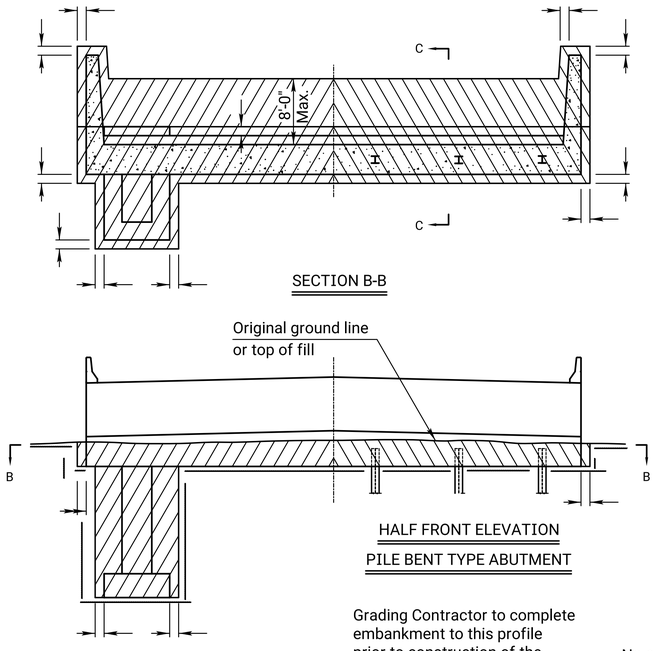
EXCAVATION DETAILS FOR REINFORCED CONCRETE BOX CULVERT

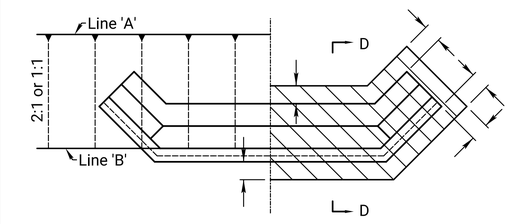
Note: Excavation for culverts less than bridge length and the additional excavation for "Embedded Structures" shall not be paid for as Class III Excavation, but shall be subsidiary to Grade 4.0 Concrete.

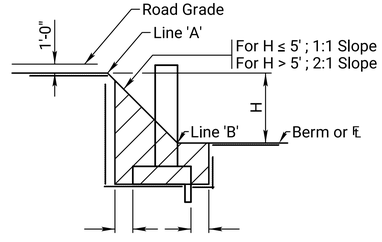


EXCAVATION DETAILS FOR TYPICAL PIERS

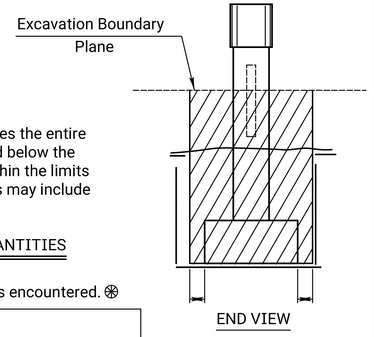
See detail when rock or shale (rock) is encountered. ❀







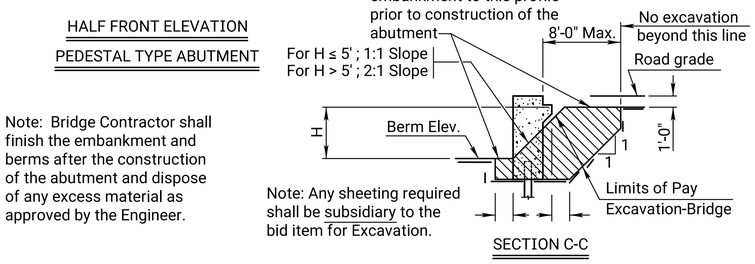
EXCAVATION DETAILS FOR ABUTMENTS WITH FLARED WINGWALLS



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

CLASS II EXCAVATION QUANTITIES

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



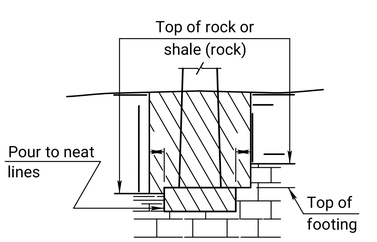
HALF FRONT ELEVATION
PEDESTAL TYPE ABUTMENT

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

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

EXCAVATION DETAILS FOR TYPICAL ABUTMENTS

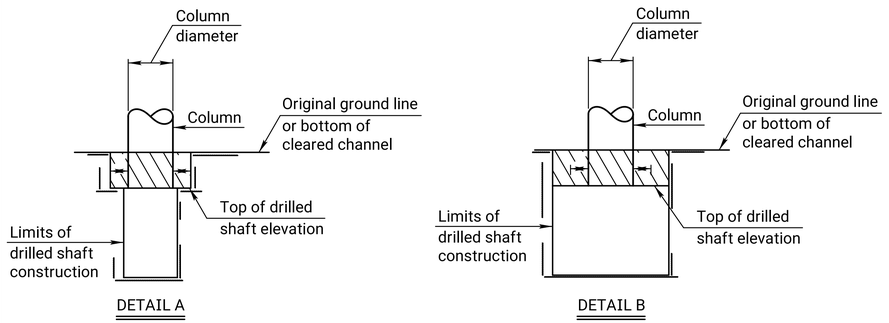
See detail when rock or shale (rock) is encountered. ❀



❀ EXCAVATION DETAIL FOR FOOTINGS IN ROCK OR SHALE (ROCK)

(Piers and Abutments)

Note: Excavation below top of rock, hard shale or below top of footing, whichever is lower, shall be to neat lines of the concrete construction.



DRILLED SHAFT DETAILS

Note: Whenever the limits of the drilled shaft construction are greater than the Column Diameter + 2X, the limits of Class I, II or III Excavation shall be the limits of the drilled shaft construction. (See Detail B)

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

Sides of trenches in hard or compacted soil including embankments shall be shored, sheeted, braced or otherwise supported when the trench is more than 5 feet in depth and 8 feet or more in length. In lieu of the shoring, the sides of the trench above the 5 foot level may be sloped to preclude collapse. The slope for average soils shall be 1:1. If the angle of repose of the soil is less, flatter slopes shall be required.

Dimension "X" shall be 2'-0" unless indicated otherwise on the general plans.

Dimension "Y" shall be 1'-6" unless indicated otherwise on the general plans.

NO.	DATE	REVISIONS	BY	APP'D
06	08-15-12	Embedment Excavation Subsidiary	J.P.J.	T.L.F.
05	05-15-12	Revised Wing Excavation	J.P.J.	T.L.F.
04	03-03-10	Revised Wing Excavation	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

BRIDGE EXCAVATION (LRFD)

BR100B

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

Plotted by : CAM 9-DEC-2024 16:50
File : bss100b-01.dgn

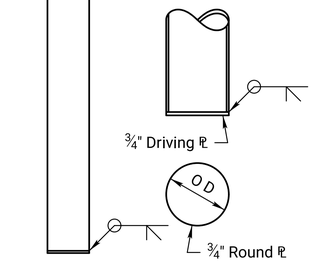
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	29	52

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

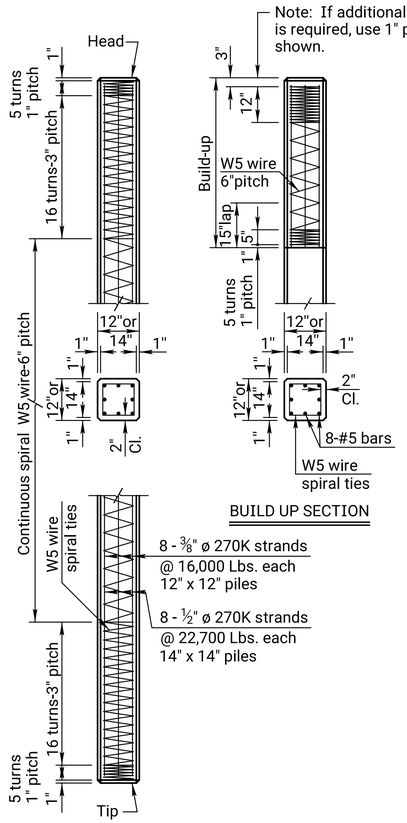
†† See the Geology Report or "Summary of Quanities" for Pipe Pile wall thickness

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

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

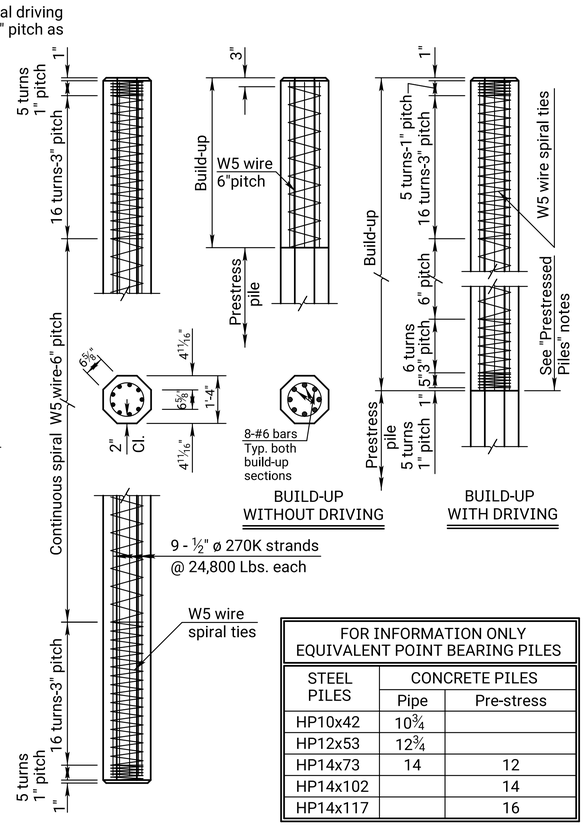


PLAIN ROUND
CAST-IN-PLACE CONCRETE PILES



12" OR 14"
PRESTRESSED
CONCRETE PILES

BUILD UP SECTION



16" PRESTRESSED
CONCRETE PILES

BUILD-UP
WITHOUT DRIVING

BUILD-UP
WITH DRIVING

FOR INFORMATION ONLY EQUIVALENT POINT BEARING PILES		
STEEL PILES	CONCRETE PILES	
	Pipe	Pre-stress
HP10x42	10¾	
HP12x53	12¾	
HP14x73	14	12
HP14x102		14
HP14x117		16

GENERAL NOTES

PRESTRESSED PILES: Fabricate prestressed concrete pile splices in accordance with the Manufacturer's recommendations subject to the approval of the Engineer.

Method of attachment of pile to build-up may be by any of the methods given in the notes on "Alternate Methods." If mild reinforcing steel is used for attachment, the area shall be no less than that used in the build-up.

ALTERNATE METHODS: Method of attachment of a pile to build-up may be by any of the following methods:
1. Cut off at least 2'-0" of pile and expose a minimum of 2'-0" of strands.
2. Cast 8-#6, or 8-#5 bars (equally spaced) into pile head. All bars shall extend into pile head and project from pile head a minimum of 2'-0".
3. Drill 8 holes in pile head (equally spaced) for installation of 8 grouted dowel bars of same size and length as in 2.
4. Provide cored holes for bars as in 3.

No bars or strands are to extend from head of pile or build-up into footing or pile cap unless approved by the Engineer.

TEST PILES: Drive test piles where called for on the bridge plans. The test piles located within the limits of the substructure will become a part of the bridge pile system.

DRIVING FORMULA: Driving formula shall conform to the Standard Specifications.

MEASUREMENT AND PAYMENT: Measurement and payment for all piles shall comply with the Standard Specifications.

REINFORCEMENT: Use reinforcing steel conforming to ASTM A615, Grade 60. Hoops and spirals may be either plain or deformed bars.

PRESTRESSING STEEL: Use uncoated seven-wire low relaxation prestressing strand conforming to ASTM A416, Gr. 270.

STEEL PILE: Steel pile shall conform to the requirements of the Standard Specifications.

PILE POINTS: Pile points shall conform to the dimensions shown and to requirements of the Standard Specifications.

SPECIFICATIONS: Standard Specifications for State Road and Bridge Construction as currently used by the Kansas Department of Transportation.

CONCRETE: Concrete for cast-in-place shall be f'c = 3,500 PSI. Concrete for prestressed shall be f'c = 5,000 PSI.

WELDING: All field welding shall meet the requirements of the Standard Specifications.

Use only Shielded Metal Arch Welding SMAW (stick welding) for pile splices.

Use only low hydrogen E7018, 7016, or 7015 series welding rod (electrode) for all welding applications during pile splicing.

New electrodes are to be purchased for each KDOT project. The electrodes shall arrive on the project in factory hermetically sealed containers, opened and labeled with indelible ink in front of the engineer. The label shall include the current date and the project number. If the container seal is questionable or shows signs of damage the electrode is to be dried in an oven at least one hour at a temperature of 700°F to 800°F.

Upon removal from intact hermetically sealed factory packaging or the drying oven the electrode is to be placed in a storage oven with a minimum temperature of 250°F.

When electrodes are removed from the hermetically sealed container or storage oven and exposed to the atmosphere for less than 4 hours place into the storage oven for at least 4 hours before removing for use.

If electrode is exposed to the atmosphere for 4 hours or more (or 9 hours for moisture resistant electrodes designated with an R in their labeling) then electrode can be dried in a drying oven at a temperature of 450°F to 550°F.

If the electrode is exposed to the atmosphere for 4 hours or more a second time or the rod becomes wet discard rod.

CAST-IN-PLACE SHELLS: Steel shells for cast-in-place concrete piles shall conform to the requirements of the Standard Specifications.

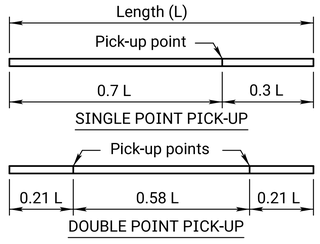
All piles driven without a mandrel shall be of the minimum thicknesses shown. Piles driven with a mandrel shall be of sufficient strength and thickness to withstand driving without injury and to resist harmful distortion and/or buckling due to soil pressure after the mandrel is removed.

Remove, replace or correct to the satisfaction of the Engineer improperly driven, broken or otherwise defective pipe piles. Otherwise drive an additional pile at no extra cost.

The Contractor shall maintain a light suitable for visual inspection of the pile on the job at all times prior to and during the filling of the pipe.

PAINT: All paint shall comply with the Standard Specifications, or as specified on the plans.

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



PICK-UP POINTS FOR PRESTRESSED PILING

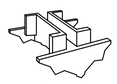
Max. length - 55' single point pick-up
Max. length - 80' double point pick-up

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

Outside Flange

Inside Flange

SHELL PILE POINT



H-Pile Point

CAST STEEL PILE POINT

The pile point shall be a one-piece unit of cast steel. Weld pile points in accordance with manufacturer's recommendations to each steel pile before driving.

Weld Symbology Definition

Use grinder to bevel edges of splice as shown in weld symbology and drawing. In addition to bevels, produce clean, bare, and shiny surfaces at and around the splice welding location.

Lay full penetration root weld from beveled side of splice.

Back gouge root weld from side opposite of root welding application making sure to remove all foreign materials, porous steel, and inclusions from root weld. Finish welding the non beveled side of the splice.

Finish welding beveled side of the splice while removing slag, foreign materials, porous steel, and inclusions in between welding passes, use of a grinder may be needed.

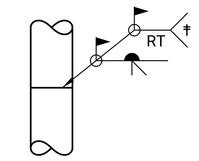
Verify that enough filler metal has been correctly placed in all weld locations to obtain a flush or convex surface with no concavity produced upon completion of the final welds.

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

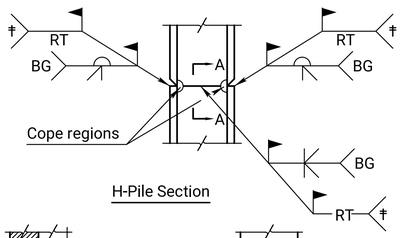
For integral pile bent abutments and piers, if a pile splice is required, do not locate the pile splice within a region extending 2'-0" above and 10'-0" below the bottom of the concrete web wall. For abutments, locate the pile splice at least 10'-0" below top of fill.

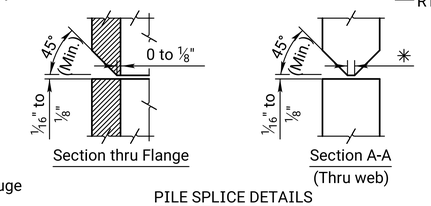
With the approval of the Engineer, one splice per bent may be allowed in the region described above without testing. If additional splices are anticipated, based on the geology, the Contractor prior to driving, will locate the splice so that the splice will not fall within the regions described above.

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



Pipe Section





✳ Minimum as required by welding process.

BG = Backgouge

PILE SPLICE DETAILS

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

KANSAS DEPARTMENT OF TRANSPORTATION

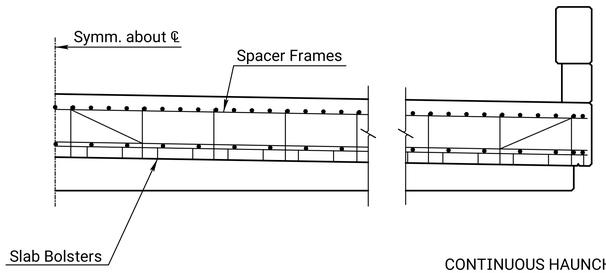
STANDARD PILE DETAILS

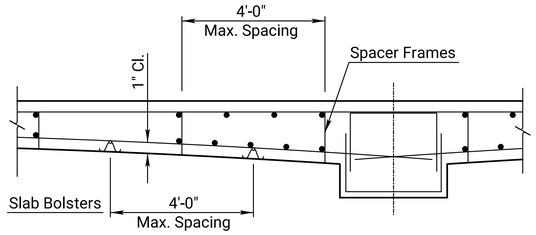
BR110

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

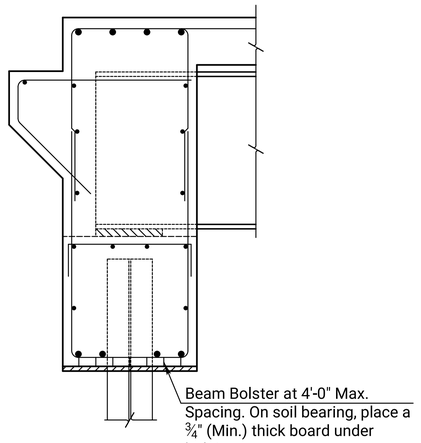
Plotted by : CAM 9-DEC-2024 16:50
File : bss110-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	30	52

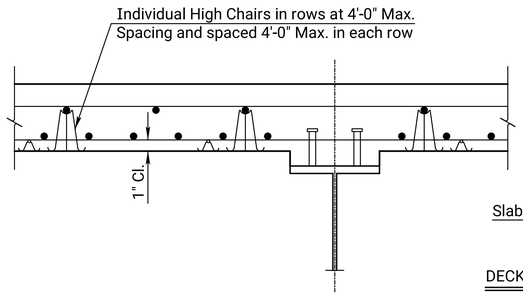


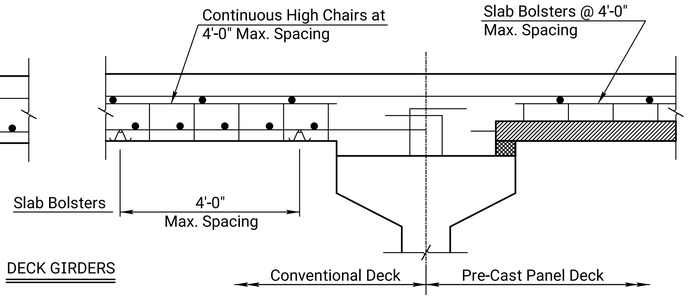


CONTINUOUS HAUNCHED SLAB

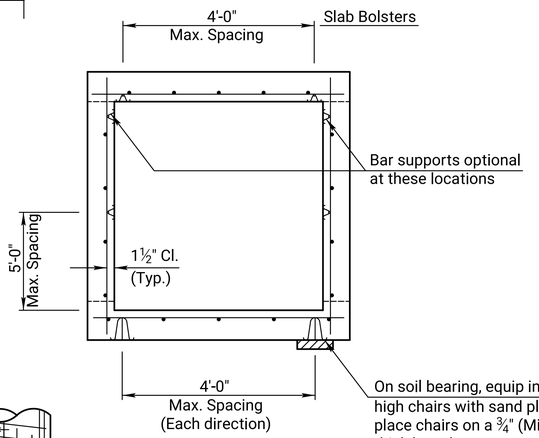


ABUTMENT

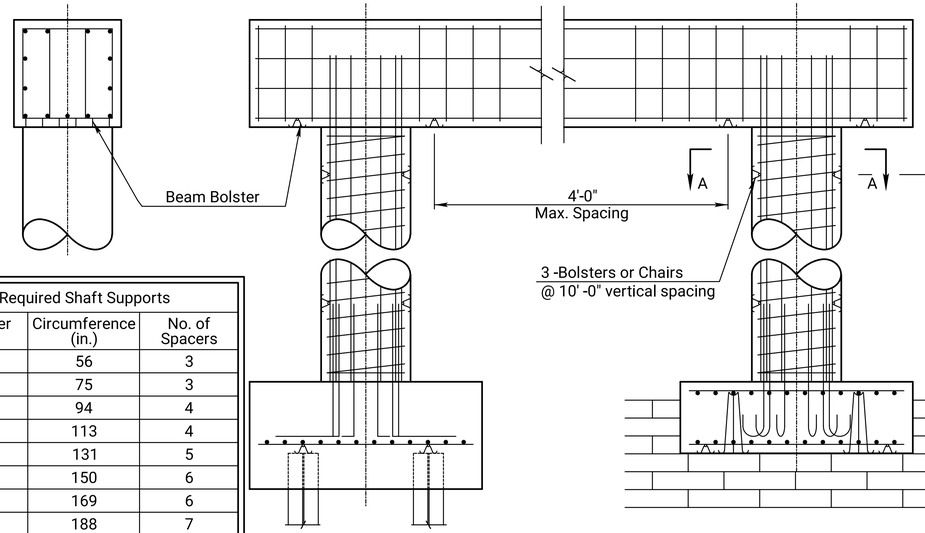




DECK GIRDERS

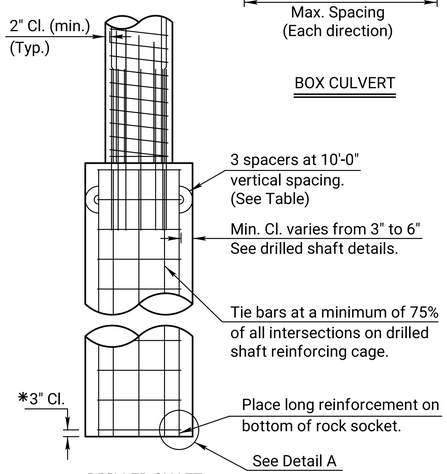


BOX CULVERT

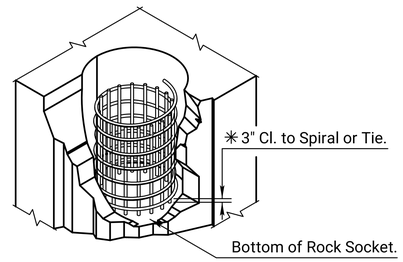


PIER

Required Shaft Supports		
Diameter (in.)	Circumference (in.)	No. of Spacers
18	56	3
24	75	3
30	94	4
36	113	4
42	131	5
48	150	6
54	169	6
60	188	7
66	207	7
72	226	8
78	244	9
84	263	9
90	282	10
96	301	11
102	320	11
108	339	12

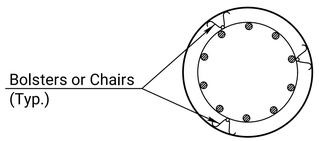


DRILLED SHAFT



DETAIL A

✳Note: Longitudinal reinforcing steel is placed on the bottom of the rock socket. Maintain 3" clearance from the bottom of rock socket to the first spiral or tie bar.



SECTION A-A

GENERAL NOTES

Reference is made to the latest edition of the CRSI "Manual of Standard Practice" for recommended industry practices concerning reinforcing steel.

Use only the following types of bar supports:

1) Wire Bar Supports:

   a) Epoxy coated reinforcing: Class 1 Protection
   b) Non-epoxy coated reinforcing: Class 1, 2, or 3 Protection

2) Plastic Bar Supports

3) Supplementary bars

When securing epoxy coated reinforcement, use tie wires or metal clips that are epoxy or plastic coated.

Do not weld reinforcing steel to bar supports or to other reinforcing steel. Shop weld spacer frames for haunched slabs.

Tie bars at all intersections around the perimeter of each mat and at not less than 2'-0" centers or at every intersection, whichever is greater.

Where more than one length of bar support is required, lap the end legs so they are locked or tied together.

Use proper height supports to maintain the distance between the reinforcing and the formed surface or the top surface of deck slabs within ¼" of that indicated on the plans.

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

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

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

NO.	DATE	REVISIONS	BY	APP'D
05	11-10-10	Column Bar Supports Required	J.P.J.	T.L.F.
04	12-01-05	Drilled Shaft Spiral Steel Placement	J.P.J.	K.F.H.
03	08-21-00	Added Pre-Cast Panel Detail	R.A.M.	K.F.H.

KANSAS DEPARTMENT OF TRANSPORTATION

SUPPORTS AND SPACERS FOR REINFORCING STEEL

BR120

FHWA APPROVAL			11-17-10	APP'D.		Terry L. Fleck	
DESIGNED	R.A.M.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	L.R.R.	DETAIL CK.	R.A.M.	QUAN.CK.		TRACE CK.	R.A.M.

Plotted by : CAM 9-DEC-2024 16:50
File : bss120-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	31	52

Removal of Existing Structure (For Information Only)

Sta. 13+70 to Sta. 14+25, Lt., Remove existing barbed wire fence and gate.

Sta. 15+21 to Sta. 15+63, Lt. & Rt. Remove existing guardrail.

Sta. 15+90.8 REMOVE Bridge No. 000441035904041 60' Simple Steel Pony Thru-Truss (Low)(SLTS). Conc. Abutments on Timber Pile. 20.0' Roadway.

Sta. 16+22 to Sta. 16+61, Lt. & Rt. Remove existing guardrail.

†† Any structure or item not specifically listed that interferes with new construction shall be removed. This work is subsidiary to the bid item Removal of Existing Structures.

RECAPITULATION OF ROAD QUANTITIES

ITEM	QUANTITY	UNIT
Contractor Construction Staking	L.S.	Lump Sum
Field Office and Laboratory (Type A)	1	Each
Curing Environment	1	Each
Mobilization	L.S.	Lump Sum
Mobilization (DBE)	L.S.	Lump Sum
Removal of Existing Structure	L.S.	Lump Sum
Foundation Stabilization (Set Price)	1	Cu. Yd.
Concrete for Seal Course (Set Price)	1	Cu. Yd.
Temporary Surfacing Material (Aggregate)(Set Price)	1	Cu. Yd.
Clearing & Grubbing	L.S.	Lump Sum
Rock Excavation	106	Cu. Yds.
Common Excavation (Rural Small)	1,750	Cu. Yds.
Compaction of Earthwork (Type A)(MR 5-5)	540	Cu. Yds.
Water (Grading) (Set Price)	1	MGal
Aggregate Ditch Lining (6")	12	Tons
Guardrail, Steel Plate (MGS)	150	Lin. Ft.
Guardrail, End Terminal (MGS-SRT)Alt. #1	4	Each
Guardrail, End Terminal (MGS-FLEAT)Alt. #2	4	Each
Signing Object Marker (Type 3)	4	Each
Concrete Pavement (10" Unif.)(AE)(Br. App.)	84	Sq. Yd.

CONCRETE PAVEMENT (10" UNIF.)(AE)(Br. App.)

Sta. to Sta.	Quantity (Sq. Yds.)
Sta. 15+10.75 to 15+23.75	41.9
Sta. 16+66.25 to 16+79.25	41.9
Total	83.8

AGGREGATE DITCH LINING (6")

Sta. to Sta.	Quantity (Tons)
Sta. 17+73.5 to 17+83.5 Lt.	12
Total	12

Computed at a rate of 120 lbs./cu. ft.

GUARDRAIL, STEEL PLATE(MGS)

STATION	SIDE	QUANTITY (Lin. Ft.)	End Terminal (MGS-SRT) (Each)	End Terminal (MGS-FLEAT) (Each)
Sta. 14+46.40 to 15+24.44	Rt.	37.5	1	1
Sta. 14+46.40 to 15+24.44	Lt.	37.5	1	1
Sta. 16+65.56 to 17+43.06	Rt.	37.5	1	1
Sta. 16+65.56 to 17+43.06	Lt.	37.5	1	1
TOTAL		150	4	4

For Signing Object Marker Quantities See Sheet No. 2
For Bridge Quantities See Sheet No. 13
For Surfacing Quantities See Sheet No. 32
For Temporary Project Water Pollution Control Quantities See Sheet No. 33
For Seeding Quantities See Sheet No. 42
For Traffic Control See Sheet No. 48

EARTHWORK

STATION to STATION	EXCAVATION COMMON CU.YDS.	EXCAVATION COMMON VMF	EXCAVATION ROCK ◔ CU.YDS.	EXCAVATION ROCK ◔ VMF	CONTR. FURN. CU.YDS.	COMPACTION TYPE AA MR-5-5 CU.YDS.	COMPACTION TYPE A MR-5-5 CU.YDS.		THROUGH CUTS NOT SUBGRADED COMM. CU.YDS.	THROUGH CUTS NOT SUBGRADED TYPE AA CU.YDS.	THROUGH CUTS NOT SUBGRADED TYPE A CU.YDS.	⚹ EMBANKMENT (CU.YDS.) INITIAL CONSOL.	⚹ EMBANKMENT (CU.YDS.) SETTLE-MENT	⚠ PLACE. SELECT SOIL CU.YDS.
13+75 to 18+00	249	0.75	106				473							
Abut. No. 1 Berm	699	0.75												
Abut. No. 2 Berm	802	0.75					10							
Ent. Sta. 14+00, Lt.							57							
TOTALS	†1,750		◔106				540							

†Includes 1,030 yd³ to be wasted.
◔Ex. asphaltic pavement, to be wasted

⚹ Subsidiary (see General Note).

⚠ See General note.

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

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

~~RD050~~

FHWA APPROVAL 5-28-08		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES JEH	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK. MEM	TRACE CK. S.W.K.

Plotted by : CAM 9-DEC-2024 16:50
File : Summary Quantities - Road McCallSlough.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	**32**	52

GENERAL NOTE:

On surfacing projects, the 6" of Compaction Type AA, shown for the center portion on the roadbed, is for the purpose of restoring the original Compaction Type AA which may have been lost since grading operations. The exact locations of this Compaction Type AA, which will be required, is to be determined by the Engineer at the time of construction. This work shall be paid under the bid item "Compaction of Earthwork (Type AA)(MR-)".

Over all structures, unless otherwise directed by the Engineer, where the top of the hubguard is level with or above the finished shoulder grade, the earth cover over the structure slab shall be removed and backfilled with _____ material as directed by the Engineer. The removal of this material will be subsidiary.

The _____ material used to backfill over the structure shall be paid for at the prices shown in the contract.

The earth shoulders shall be compacted full depth (Type -MR) except, when ordered by the Engineer, the top 3" shall be left uncompacted for seeding.

All side roads and house entrances shall be surfaced with _____ to the R/W line as indicated on the detail. All side roads and house entrances with existing asphalt surface shall be surfaced with _____ at least to the R/W line or to the end of construction, as directed by the Engineer. Each mailbox turnout (ON PROJECTS WHERE STABILIZED SHOULDERS ARE NOT SPECIFIED) shall be surfaced with _____ to the limits shown on the detail.

Surfacing material (SA-_____) shall be used for surfacing house entrances and side roads (_____ C.Y./SQ. YD.) beyond the limits of the asphalt surface to the limits of construction as determined by the Engineer.

The thickness of side road and entrance surfacing may be increased to the same thickness as the stabilized shoulder within the approximate limits of the shoulder.

On projects which specify both asphalt base and surface course materials, side roads, house entrances and mailbox turnouts may be surfaced with both materials at the contractors option, with the approval of the Engineer.

Quantities for aggregate for shoulders, AS-1, are calculated on the basis of 150 lbs. per cu. ft. Quantities for stabilized base course, AB-3, are calculated on the basis of 1 56 lbs. per cu. ft. Weight/cu. ft. includes moisture allowed by specification.

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

Thicknesses indicated for all construction which is paid for on a weight or volume basis are approximate and may vary to correct for unevenness in the foundations or for other normal unevenness encountered in placement operations.

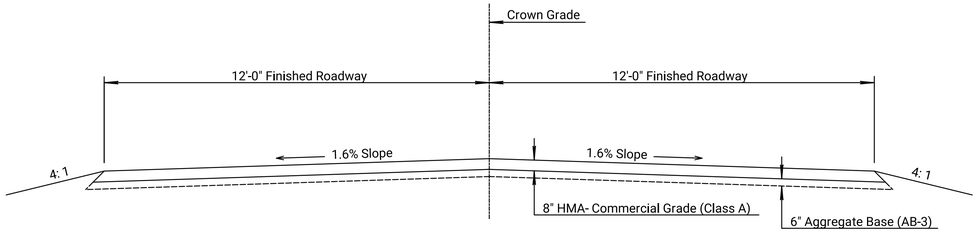
A tack coat of SS-1HP shall be provided between each lift of all base courses and surface courses and under the first lift of base or surface courses when they are placed on an existing asphalt, brick, or concrete surface, when so ordered by the Engineer and at the rate designated by him. Quantities are included for these tacks calculated at the rate of 0.06 gal. /sq. yd.

Asphalt Material quantities are calculated on the basis of 8.328 lbs. per gal.

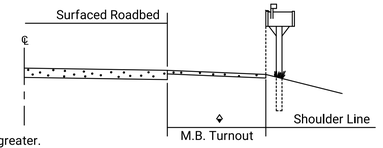
Shoulder rumble strips will not be constructed as part of this project.

SUMMARY OF QUANTITIES

ITEM	Tons	Tons	Sq. Yds.
8" HMA- Commercial Grade (Class A)			
Sta. 13+75.00 to Sta. 15+10.75	164.5		
Sta. 16+79.25 to Sta. 18+00.00	157.4		
6" Aggregate Base (AB-3)			
Sta. 13+25.00 to Sta. 14+77.75			378.1
Sta. 16+46.25 to Sta. 18+25.00			361.8
Surfacing Material (AB-3)(6") - (Side Roads)			
Sta. 17+63.7 to Sta. 18+00, Lt.		6.3	
Sta. 17+73.5 to Sta. 18+00, Rt.		3.2	
TOTALS	321.9	9.5	739.9



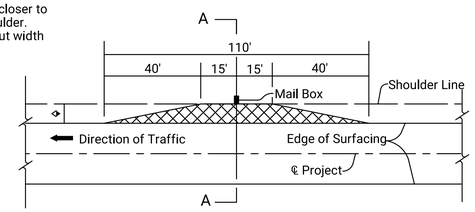
TYPICAL SECTION SURFACING



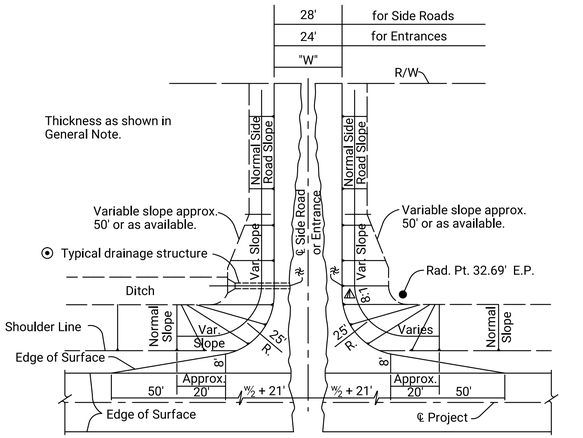
♦ Width shall be 8' or shoulder width, whichever is greater.

SECTION A-A

Note: The face of Mail Box should be no closer to the roadway than the edge of the shoulder. Align with edge of turnout when turnout width is greater than shoulder width.

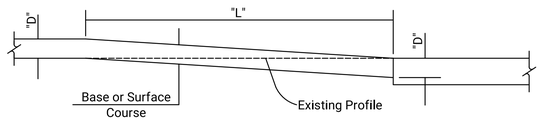


DETAIL FOR SURFACING OF MAIL BOX TURNOUTS



WITH DRAINAGE STRUCTURE — MOUND ENTRANCE OR SIDE ROAD

DETAIL FOR SURFACING OF SIDE ROADS & HOUSE ENTRANCES



TYPICAL PROFILE AT GRADE CONTROL POINTS

The Contractor shall cut the subgrade in accordance with this profile at all grade control points, i.e. ; existing pavements, grade bridges and R.R. crossings, also at changes in thickness of base or surface courses. Corresponding dimensions of "D" and "L" shall be as given in the table below.

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

TABLE OF DIMENSIONS

D	L	D	L	D	L	D	L	D	L	D	L
1"	25'	3"	75'	5"	125'	7"	175'	9"	225'	11"	275'
2"	50'	4"	100'	6"	150'	8"	200'	10"	250'	12"	300'

RATES OF APPLICATION

RATE	UNIT	ITEM
145	lb/ft³	HMA- Commercial Grade (Class A)
156	lb/ft³	Aggregate Base (AB-3)
156	lb/ft³	Surfacing Material (AB-3)

† Computed at the rate of

†† Computed at the rate of

RECAPITULATION OF QUANTITIES

ITEM	TOTAL	UNIT
HMA- Commercial Grade (Class A)	322	Tons
6" Aggregate Base (AB-3)	740	Sq. Yds.
Surfacing Material (AB-3)	10	Tons
Water (Aggregate Base)(Set Price)	1	MGal

⚠ 8:1 Slope at the appropriate clear zone shall apply to all mound entrances and mound side roads to 10' fill height. Normal Slope (but not steeper than 6:1) for over 10' fill height.

⊙ Normal Slope (but not steeper than appropriate clear zone width. 6:1) at approximate ℄ Structure or

⊹ On side roads and entrances which slope toward the highway, a low point approx. 6" deep shall be constructed to divert surface drainage into the highway ditch, unless otherwise shown on the plans.

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

KANSAS DEPARTMENT OF TRANSPORTATION

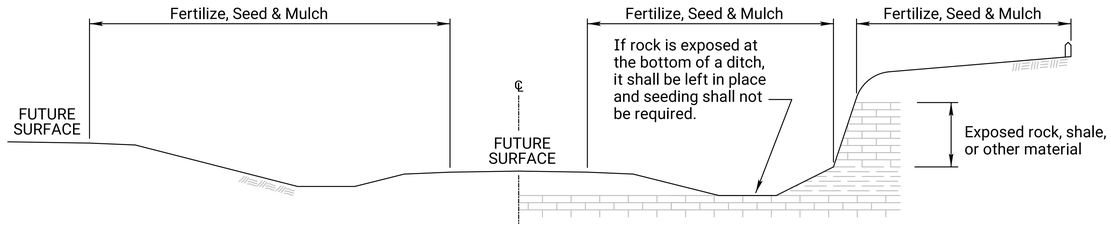
SUMMARY OF QUANTITIES (Surfacing)

RD051

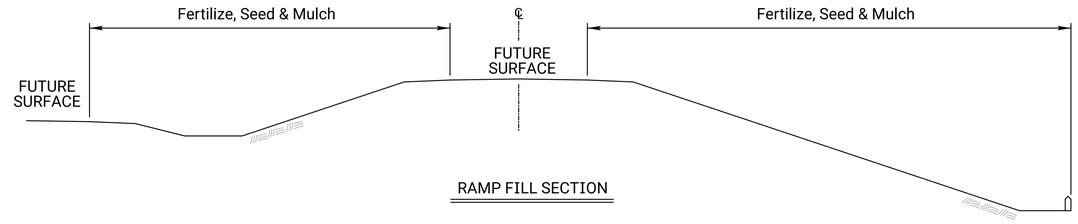
FHWA APPROVAL	9-06-06	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Hecht

Plotted by : CAM 9-DEC-2024 16:50
File : Summ Quant - Surfacing McCallSlough.dgn

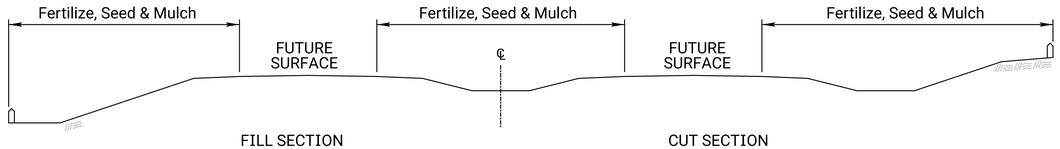
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	33	52



RAMP CUT SECTION



RAMP FILL SECTION



FILL SECTION CUT SECTION

TYPICAL SECTION - DUAL PAVEMENT

FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P_2O_5, K_2O listed in Summary of Quantities will be acceptable.

* - N = Nitrogen Rate of Application
** - P_2O_5 = Phosphorous Rate of Application
*** - K_2O = Potassium Rate of Application

The Contractor will be required to finish areas of excavation, borrow and embankment in accordance with the specifications. Areas that require installation or construction of temporary water pollution control items will be finished in reasonable close conformity to the alignment, grade and cross section shown on the plans or as established by the Engineer.

CLT = Construction Limit Tract. This area is defined by the entire disturbed area of the project that requires seeding and erosion control measures to be placed. Any impervious areas (i.e. pavement, gravel, riprap, etc.) shall not be included in this measurement.

Slope = Defined by the area of the project that requires Class 1 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

Channel = Defined by the area of the project that requires Class 2 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded, and mulched. Soil preparation shall conform to the Standard Specifications.

Temporary seeding shall be done during any time of the year that the soil can be cultivated. After the temporary seeding has been completed on the entire project, permanent seeding shall be done during the normal seeding season.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching materials is generally as follows:

1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

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

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

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

SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES

P.L.S. RATE/ ACRE		ACRES		BID ITEM	QUANTITY	UNIT
CLT	SL/CH	CLT	SL/CH			
150	150	0.37	0.044	Temporary Fertilizer (15 -30-15)	7	LB
20		0.37		Temporary Seed (Canada Wildrye)		LB
45		0.37		Temporary Seed (Grain Oats)		LB
45		0.37		Temporary Seed (Sterile Wheatgrass)		LB
	109.9		0.044	Soil Erosion Mix	4.8	LB
				Erosion Control (Class 1, Type C)	210	SQ YD
				Erosion Control (Class 2, Type Y)		SQ YD
				Sediment Removal (Set Price)	1	CU YD
				Synthetic Sediment Barrier		LF
				Temporary Berm (Set Price)	1	LF
				Temporary Ditch Check (Rock)	28	CU YD
				Temporary Inlet Sediment Barrier		EACH
				Temporary Sediment Basin		CU YD
				Temporary Slope Drain		LF
				Temporary Stream Crossing		EACH
				Biodegradable Log (9")		LF
				Biodegradable Log (12")		LF
				Biodegradable Log (20")	600	LF
				Filter Sock (18")	600	LF
				Geotextile (Erosion Control)	750	SQ YD
				Silt Fence	600	LF
				SWPPP Design †		LS
				SWPPP Inspection †		EACH
				Water Pollution Control Manager †		EACH
900 lbs / acre		0.37		Mulch Tacking Slurry		LB
2 tons / acre		0.37		Mulching		TON
				Water (Erosion Control) (Set Price)	1	MGAL

NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. See Permanent Seeding Summary of Seeding Quantities sheet LA850 for further details.

Geotextile (Erosion Control) shall be removed prior to placement of permanent slope protection.

Regreen and Quick Guard are the approved sterile wheatgrass products.

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

**** List size of material.

The amount of mulch and mulch tacking slurry in the bid quantities is estimated. Mulch and Slurry Mulch estimated calculations are as follows:

Mulch = Acres of Seeding X 1.5 X 2 Tons/Acre
Mulch Tacking Slurry = Acres of Seeding X 1.5 X 900 lbs./Acre

The estimated quantity includes mulching associated with both temporary and permanent seeding operations. The total mulch and mulch tacking slurry required shall be determined in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

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

SOIL EROSION MIX

PLS RATE	NAME	QTY (lb)
0.5	Blue Grama Grass Seed (Lovington)	0.02
4.5	Buffalograss Seed (Treated)	0.20
45	Perennial Ryegrass Seed	1.96
2.6	Prairie Junegrass Seed	0.11
6.3	Side Oats Grama Grass Seed (El Reno)	0.28
45	Tall Fescue (Endophyte Free)	1.96
6	Western Wheatgrass Seed (Barton)	0.26
109.9	Total (lb)	4.79

The Soil Erosion Mix is to be placed under the Class 1 and/or Class 2 erosion control material.

The Soil Erosion Mix consists of the Shoulder Area of the Permanent Seed Mix used on the project.

NO.	DATE	REVISIONS	BY	APP'D
03	08-03-20	Added Note	M.R.D.	M.L.
02	12-01-17	Revised Standard	M.R.D.	S.H.S.
01	06-01-17	Revised Standard	M.R.D.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

~~LA852A~~

FHWA APPROVAL			01-26-18	APP'D.	Scott H. Shields
DESIGNED	M.R.D.	DETAILED	M.R.D.	QUANTITIES	TRACED
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.	TRACE CK.

Plotted by : CAM 9-DEC-2024 16:50
File : la852a.dgn

EROSION CONTROL- CLASS I, TYPE C

STATION TO STATION	SIDE	LENGTH	WIDTH	SQ YARD
15+31.4 to 15+59.5	Lt.	28.1	Var.	21.7
15+41.5 to 15+87.4	Rt.	45.9	Var.	124.5
16+06.0 to 16+60.2	Lt.	54.2	Var.	63.7
TOTAL EROSION CONTROL (CLASS I, TYPE C) = 210 SQ. YDS.				

Plotted by : CAM 9-DEC-2024 16:50
File : la852a-ec.dgn

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

EROSION CONTROL
SEEDING-SODDING

LA852A-EC

FHWA APPROVAL		APP'D.	Scott H. Shields
DESIGNED M.R.M.	DETAILED M.R.M.	QUANTITIES	TRACED M.R.M.
DESIGN CK. S.H.S.	DETAIL CK. S.H.S.	QUAN.CK.	TRACE CK. S.H.S.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	35	52

Total Disturbed Area= 0.69 acres

Total Area in Right of Way= 0.96 acres

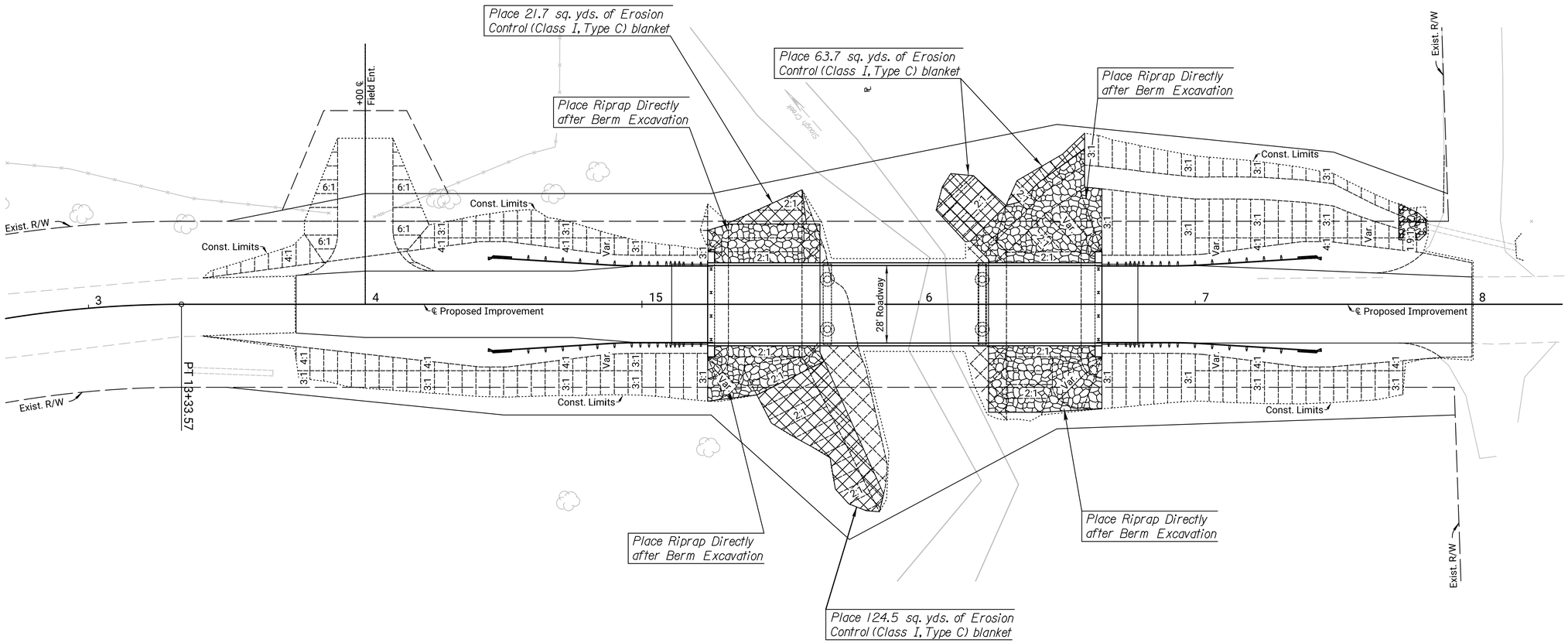
Seeding Area= 0.37 acres

Place Temporary Seed and Mulch whenever an area is disturbed and not to be addressed again for 14 days.

Scale: 1"=20"

LEGEND

- Aggregate Ditch Lining(6")
- Slope Protection(Riprap Stone)
- Erosion Control (Class 1, Type C)



PLAN

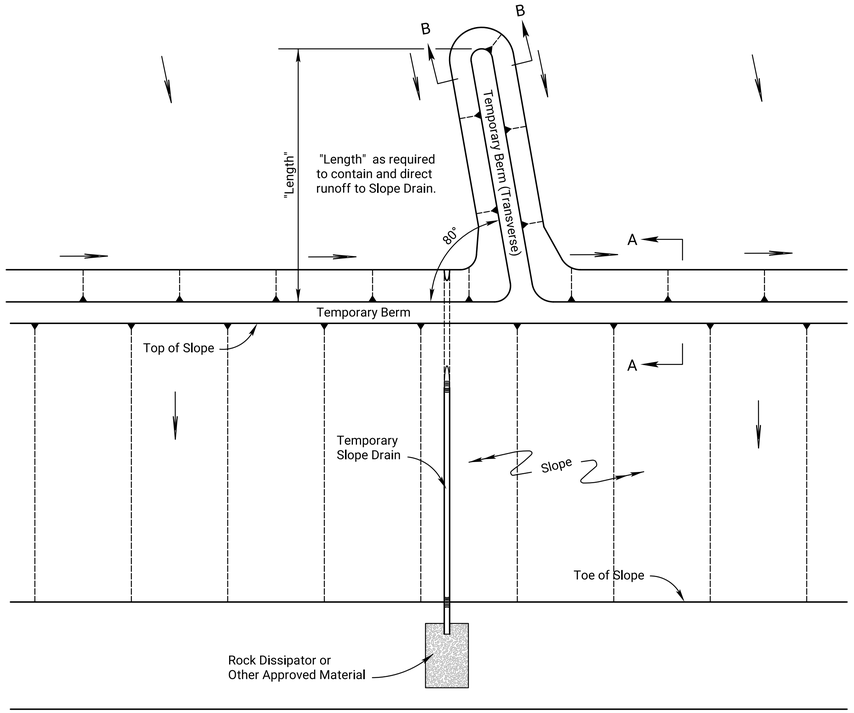
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

PROPOSED EROSION CONTROL PLAN
STA. 13 + 75 TO STA. 18 + 00

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

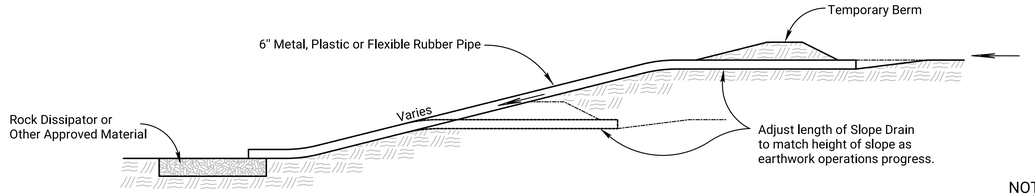
Plotted By: CAM
File: SWPP Plan.dgn
Plot Date: 9-DEC-2024 16:50
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	36	52



TYPICAL PLAN VIEW OF TEMPORARY BERM AND TEMPORARY SLOPE DRAIN

NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN

NO SCALE

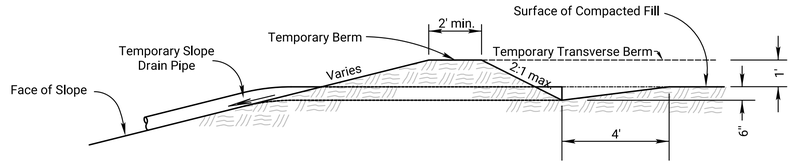
NOTES:

1) Temporary Slope Drain and Temporary Berm may be used on either project foreslopes or project backslopes.

2) Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.

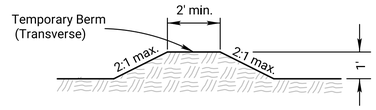
3) Pipe shall be secured in place as approved by Engineer.

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



SECTION A-A

NO SCALE

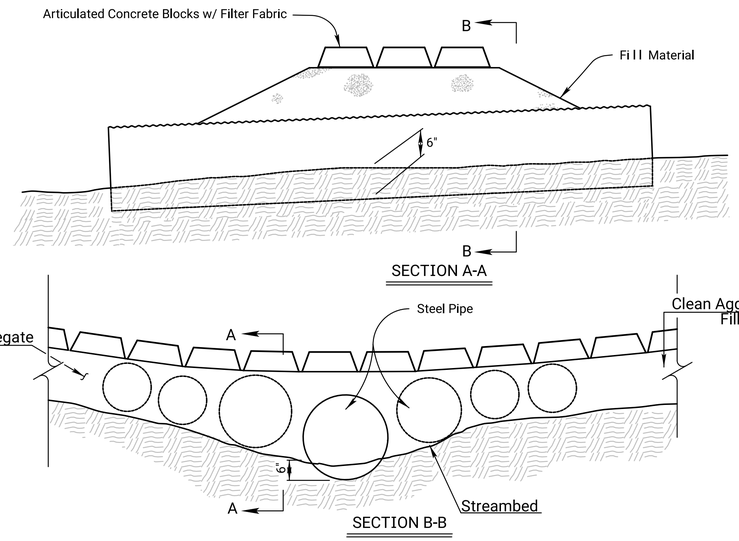


SECTION B-B

NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM

NO SCALE



Pipe size may vary.

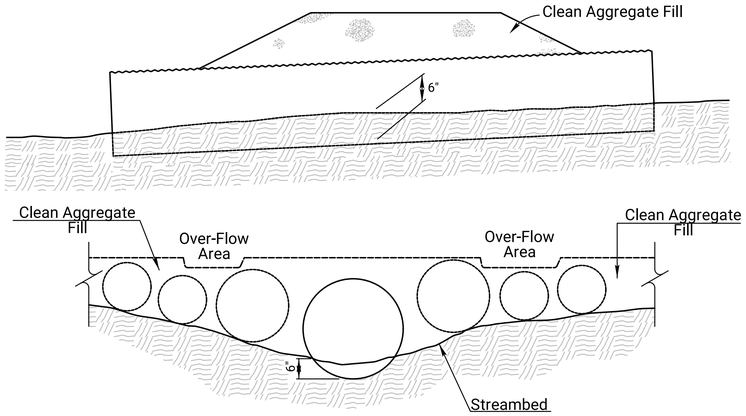
Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

See KDOT Specifications for more information.

TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)

NO SCALE



SECTION B-B

TEMPORARY STREAM CROSSING (AGGREGATE)

NO SCALE

Pipe size may vary.

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

See KDOT Specifications for more information.

NO.	DATE	REVISIONS	BY	APP'D
03	01-21-22	Temp Stream Crossing - Clean Aggregate Fill Note Added	M.R.D.	M.L.
02	08-24-21	Temp Stream Crossing - Clean Aggregate Fill Note Added	M.R.D.	M.L.
01	06-11-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

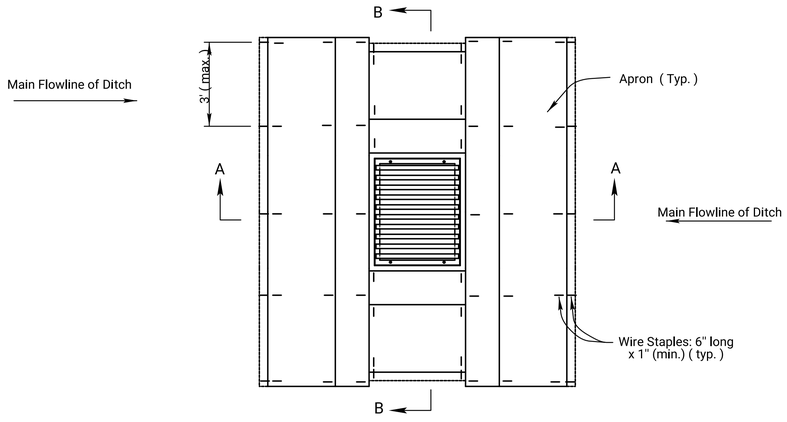
TEMPORARY EROSION AND POLLUTION CONTROL TEMPORARY SLOPE DRAIN, TEMPORARY STREAM CROSSING (AGGREGATE)

LA852B

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

Plotted by : CAM 9-DEC-2024 16:50
File : la852b.dgn

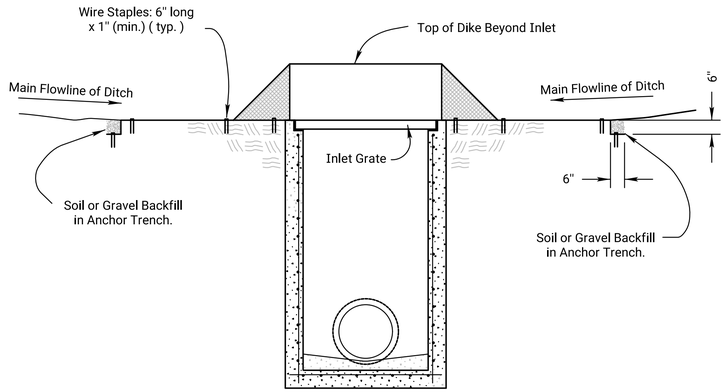
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	37	52



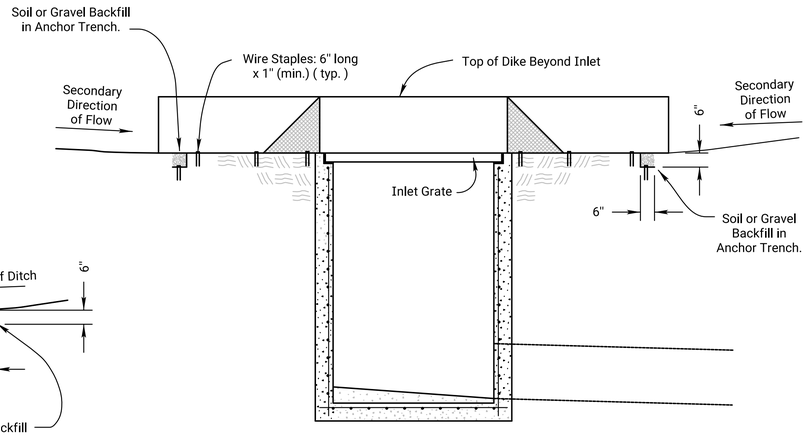
PLAN

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

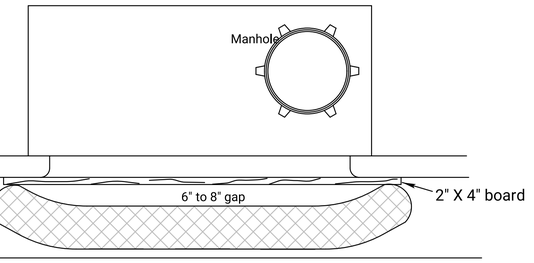
NO SCALE



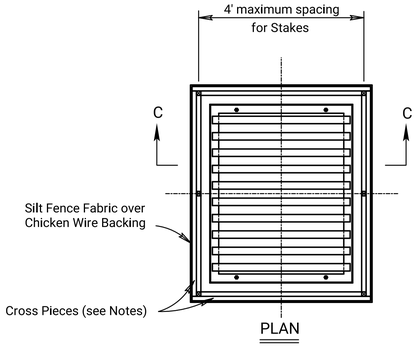
SECTION A - A



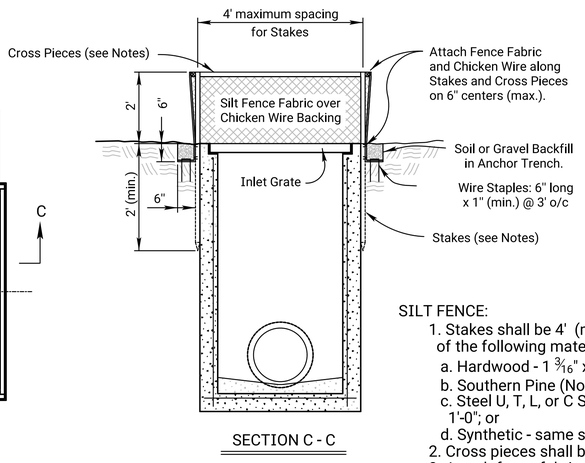
SECTION B - B



CURB INLET PROTECTION



PLAN



SECTION C - C

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

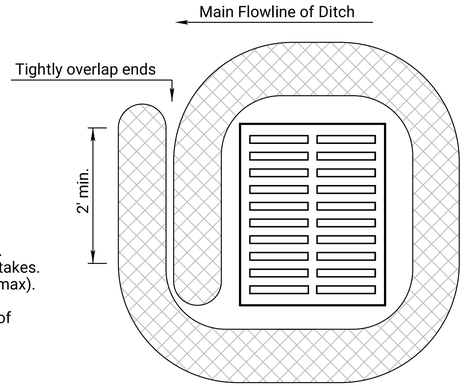
NO SCALE

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16",
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.

Bags = synthetic net (3mm mesh) or burlap bags

Rock = approximately 1" to 2" diameter



Drop inlet use
1'-6" TO 1'-8" diameter log

BIODEGRADABLE LOG/FILTER SOCK
DROP INLET PROTECTION

Note: 25% of log shall be keyed into ground during installation.

Stake every 4'

1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (8" minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter Sock.

Material Requirements
Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.
No compost or fines.
No hay or straw.
Do not use material which prohibits water infiltration.
Log Mesh: Use mesh with ¼" openings or larger. Mesh must allow water infiltration but also hold fill material in place.

NO.	DATE	REVISIONS	BY	APP'D
03	09-26-19	Changed Direction of Main Flowline of Ditch Arrow	M.R.D.	S.H.S.
02	03-10-15	Revised Standard	R.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

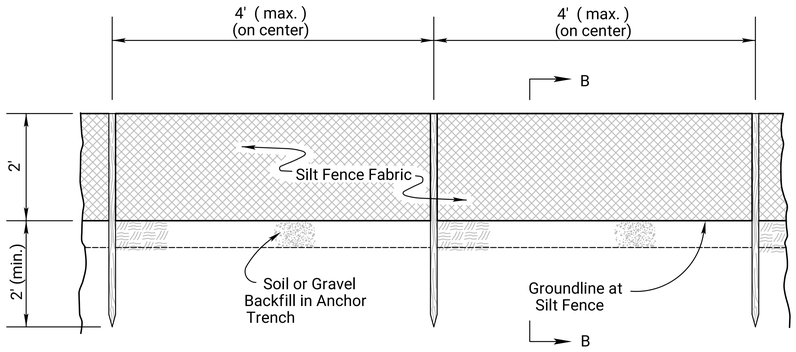
TEMPORARY EROSION AND POLLUTION CONTROL, TEMPORARY INLET SEDIMENT BARRIER (SILT FENCE) TEMP. INLET SEDIMENT BARRIER (T.S.D.)

LA852C

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

Plotted by : CAM 9-DEC-2024 16:50
File : la852c.dgn

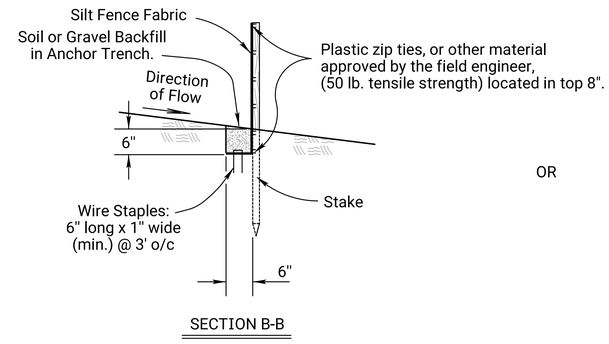
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	38	52



TYPICAL ELEVATION

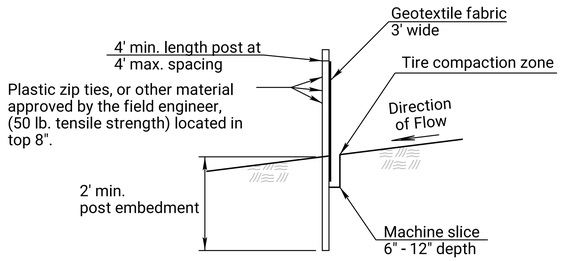
SILT FENCE BARRIER

NO SCALE

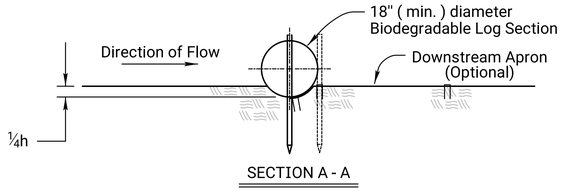


SECTION B-B

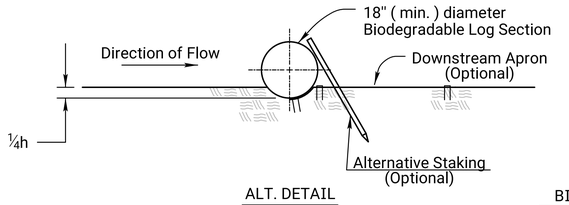
OR



SECTION B-B

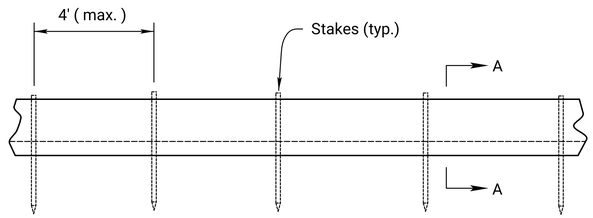


SECTION A - A



ALT. DETAIL

OPTIONAL



TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS

OR Filter Sock

INSTALLATION NOTES

SILT FENCE:

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

BIODEGRADABLE LOG OR FILTER SOCK

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

Biodegradable Log or Filter Sock Slope Interruptions

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

Deviations should be approved by the Field Engineer.

BIODEGRADABLE LOG MATERIAL		
	LOW FLOW	HIGH FLOW
9"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
12"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
18"-20"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber

GENERAL NOTES

1) Slope interruptions shall be placed along contour lines, with a short section turned upgrade at each end of the barrier.
2) The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
3) Interruptions damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
4) Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

NO.	DATE	REVISIONS	BY	APP'D
03	06-28-16	Revised Standard	R.A.	S.H.S.
02	03-01-15	Revised Standard	R.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL SLOPE INTERRUPTIONS BIODEGRADABLE LOG / SILT FENCE

LA852D

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

Plotted by : CAM 9-DEC-2024 16:50
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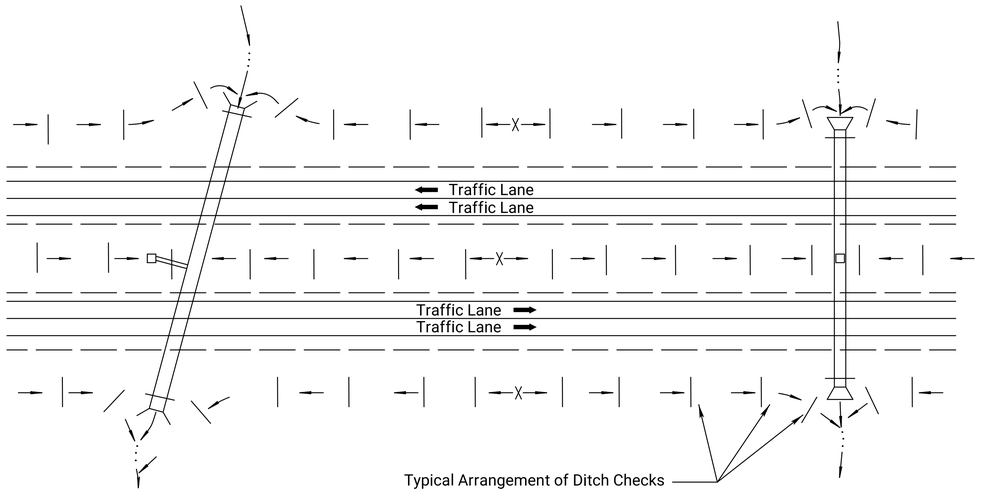
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	39	52



TYPICAL DITCH CHECK LAYOUT PLAN

NO SCALE

20" BIOLOG CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	125
2.0	60
3.0	40
4.0	30
5.0	25
NOTE: Use this spacing for all except Rock Ditch Checks.	

18" FILTER SOCK CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	110
2.0	55
3.0	35
4.0	25
5.0	20
NOTE: Use this spacing for all except Rock Ditch Checks.	

GENERAL NOTES

1) The choice of ditch check methods is at the option of the Contractor.

2) Use only rock checks in situations where the ditch slope is 6 percent or greater.

2) Ditch checks damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired by Contractor at no extra cost to KDOT.

NO.	DATE	REVISIONS	BY	APP'D
03	08-10-16	Revised Standard	R.A.A.	S.H.S.
02	06-28-16	Revised Standard	R.A.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

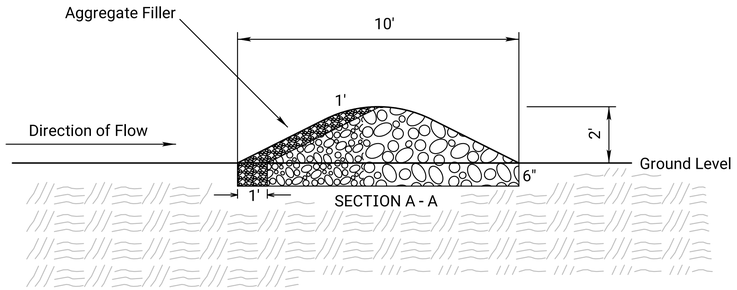
TEMPORARY EROSION AND POLLUTION CONTROL DITCH CHECKS

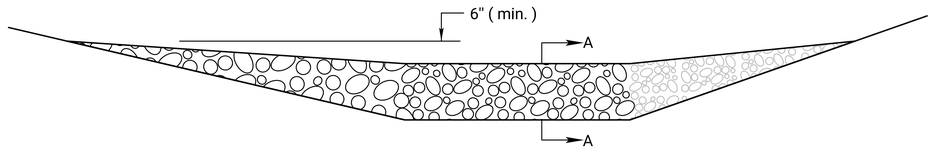
LA852E

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

Plotted by : CAM 9-DEC-2024 16:50
File : la852e.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	40	52





TYPICAL ELEVATION

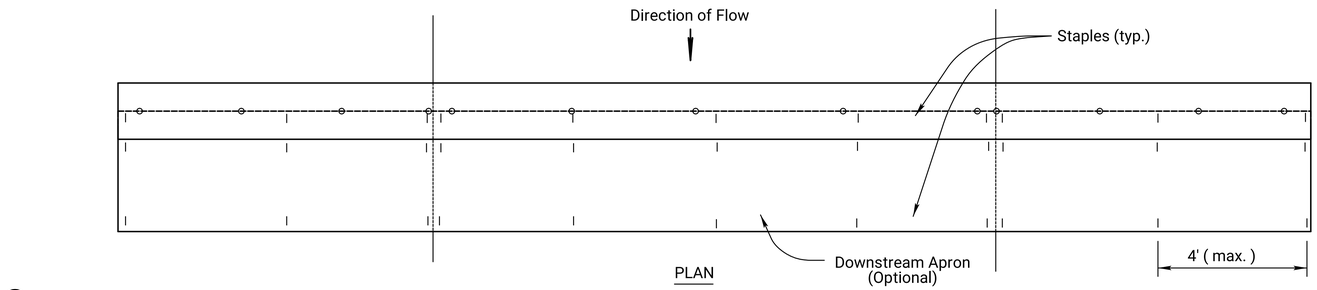
ROCK DITCH CHECK

NO SCALE

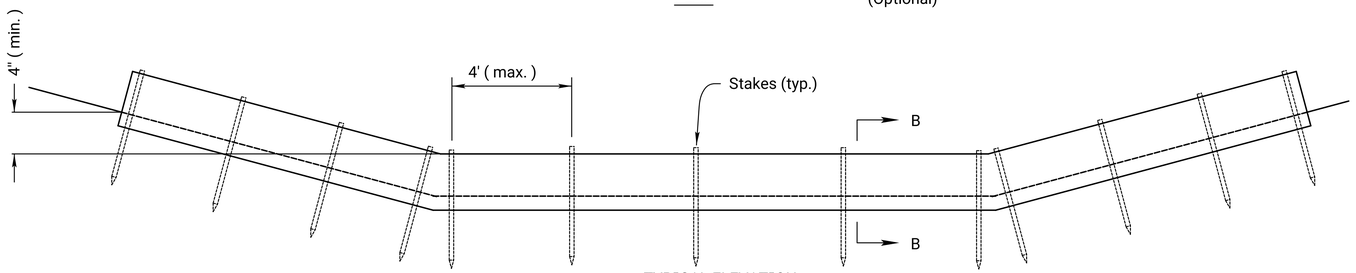
TEMPORARY ROCK DITCH CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
NOTE: Use this spacing for Rock Ditch Checks only.	

ROCK DITCH CHECK NOTES

1. Rock shall be clean aggregate, D50-6" and aggregate filler.
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch shall be excavated to the dimensions of the Rock Ditch Check and to a minimum depth of 6" (150mm). After placement of the rock, backfill and compact any over-excavated soil to ditch grade. This work shall be subsidiary to the bid item Temporary Ditch Check (Rock).
5. Aggregate excavated on site may be used as an alternate to the 6" rock, if approved by the Engineer.
6. The Engineer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.
7. When the use of larger rock is approved, D50-6" rock will be placed between the larger aggregate and the aggregate filler.
8. Aggregate filler will be placed on the upstream face of the ditch check. Aggregate filler will comply with Filter Course Type I, Division 1114.



PLAN

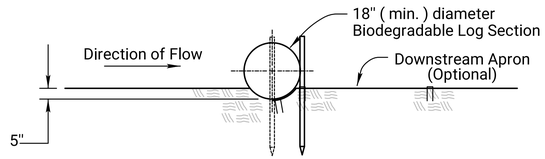


TYPICAL ELEVATION

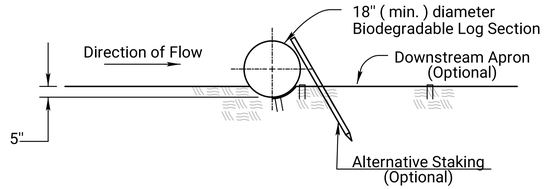
BIODEGRADABLE LOG DITCH CHECK

OR Filter Sock Ditch Check

NO SCALE



SECTION B - B



ALT. DETAIL OPTIONAL

BIODEGRADABLE LOG DITCH CHECK NOTES

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 18".
3. Stakes shall be wood or steel according to Section 2114 of the Standard Specifications. Length of stakes shall be a minimum of 2 x the diameter of the log.
4. Use Erosion Control (Class 1) (Type C) as the downstream apron when required.
5. A downstream apron is required when directed by the Engineer. Apron material will be paid at the contract unit price.
6. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.

NO.	DATE	REVISIONS	BY	APP'D
03	11-19-20	Revised Standard	M.R.D.	M.L.
02	08-10-16	Revised Standard	R.A.A.	S.H.S.
01	10-21-15	Revised Standard	R.A.A.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

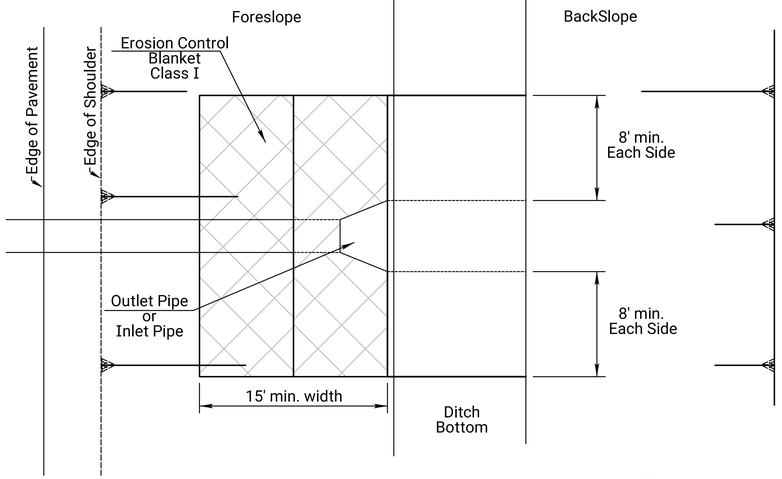
TEMPORARY EROSION AND POLLUTION CONTROL ROCK DITCH CHECKS BIODEGRADABLE LOG DITCH CHECKS

LA852G

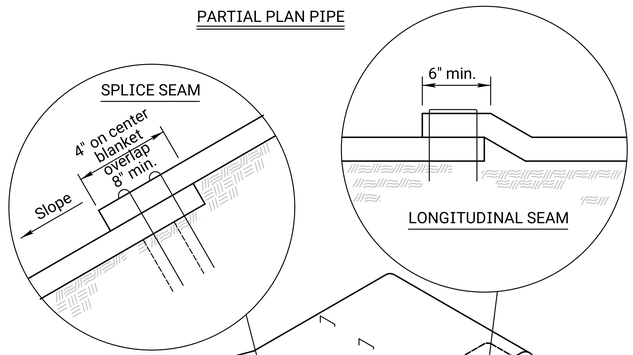
FHWA APPROVAL		11-19-20	APP'D.		Mervin Lare		
DESIGNED	M.L.	DETAILED	D.K.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	M.L.	DETAIL CK.	M.L.	QUAN.CK.		TRACE CK.	R.A.A.

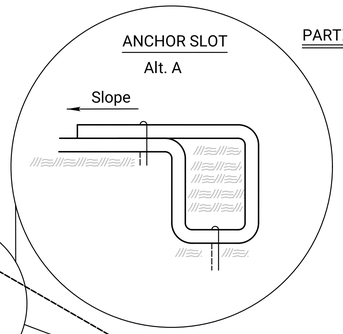
Plotted by : CAM 9-DEC-2024 16:50
File : la852g.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	41	52

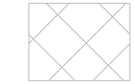


PARTIAL PLAN PIPE

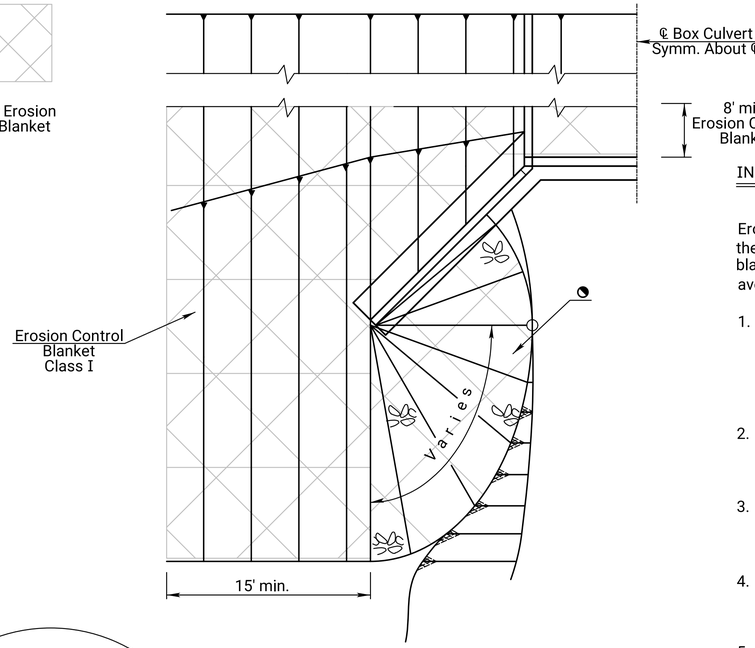




ISOMETRIC VIEW



Limits of Erosion Control Blanket



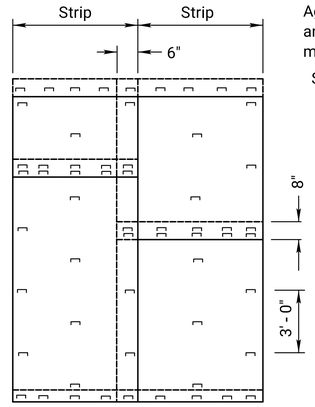
PARTIAL PLAN BOX CULVERT

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

INSTALLATION DETAILS FOR EROSION CONTROL CLASS 1

Erosion Control Blankets shall be laid loosely in the direction of the slope, beginning at the bottom of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.

1. ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
2. LONGITUDINAL SEAMS: The edges of the blanket should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.
3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 8 inches in direction of water flow. Stagger splice seams.
4. TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.
5. TYPICAL ANCHORS: Anchor design shall be as recommended by the manufacturer.
6. STAPLE CHECK: ‡Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.



PLAN VIEW - ANCHORING DIAGRAM

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

Single post ring and shank staple is acceptable.

NO.	DATE	REVISIONS	BY	APP'D
04	03-01-15	Revised Standard	R.A.A.	S.H.S.
03	02-23-15	Revised Standard	R.A.A.	S.H.S.
02	09-15-14	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

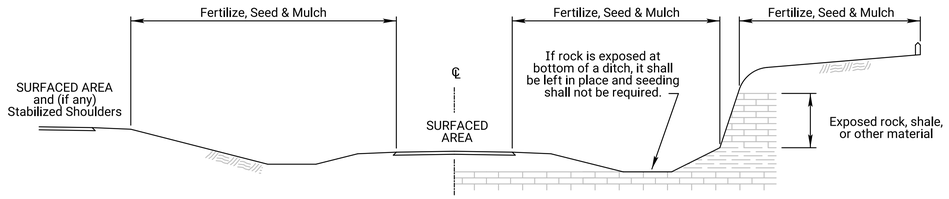
INSTALLATION DETAIL EROSION CONTROL CLASS 1 SLOPE PROTECTION

LA855

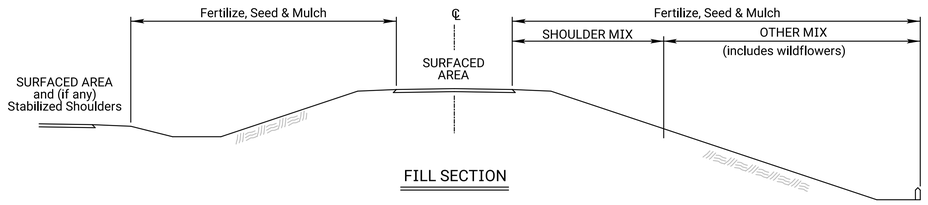
FHWA APPROVAL			03-10-15	APP'D.		Scott H. Shields	
DESIGNED	R.A.A.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	R.A.A.

Plotted by : CAM 9-DEC-2024 16:50
File : la855.dgn

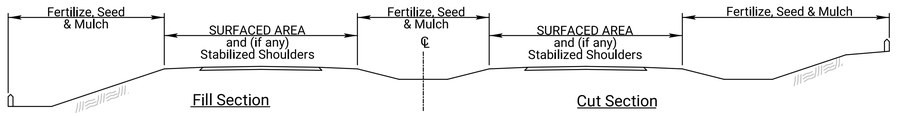
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	42	52



CUT SECTION



FILL SECTION



TYPICAL SECTION - DUAL PAVEMENT

GRASS & WILDFLOWER SEEDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES & WILDFLOWERS
February 15 thru April 20 August 15 thru September 30	November 15 thru June 1
SPECIES	SPECIES
Bluegrasses	Bermuda Grass
Brome Grasses	Big Bluestem
Canada Wildrye	Blue Grama
Fescues	Buffalo Grass
Prairie Junegrass	Indiangrass
Ryegrasses	Little Bluestem
Sterile Wheatgrass	Sand Bluestem
Tall Dropseed	Sand Dropseed
Western Wheatgrass	Sand Lovegrass
	Side Oats Grama
	Switchgrass
	Wildflower Mixes

When the area to be seeded is 1 acre or more, if Cool Season grasses are mixed with Warm Season grasses, seed the area during the Warm Season.

When the area to be seeded is less than 1 acre, seed the area any time of the year.

SODDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES
March 1 thru April 15 September 1 thru November 15	May 15 thru September 1
SPECIES	SPECIES
Bluegrass Sod	Buffalo Grass Sod
Fescue Sod	

If the soil is workable, the Engineer may allow placement of sod between November 15 and March 1. If sod is placed during this time, maintain the sod until 20 days after the beginning of the spring sodding season.

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded and mulched. Soil preparation shall conform to the Standard Specifications except as noted below.

All borrow areas shown on the plans are to be fertilized, seeded, and mulched. However, operation in borrow areas where crops are growing may be omitted when requested by the owner.

If temporary cover has provided stable slopes with no erosion, seed the permanent grasses into the existing cover. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area, resulting in bare ground.

FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P_2O_5 , K_2O listed in Summary of Seeding Quantities will be acceptable.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching material is generally as follows:

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

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

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

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

NATIVE WILDFLOWER MIX 1

PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	1.4
0.3	Common Milkweed	1.4
0.3	Black Eyed Susan	1.4
0.5	Blanket Flower	2.4
0.5	False Sunflower	2.4
0.5	Lance-Leaf Coreopsis	2.4
0.2	Maximilian Sunflower	0.9
0.1	New England Aster	0.5
0.2	Pinnate Prairie Coneflower	0.9
0.2	Plains Coreopsis	0.9
0.3	Purple Coneflower	1.4
0.3	Upright Prairie Coneflower	1.4
0.3	Dames Rocket	1.4
0.3	Lemon Mint	1.4
0.2	Pitcher Sage	0.9
0.2	Wild Bergamot	0.9
1.0	Illinois Bundleflower	4.7
0.2	Common Evening Primrose	0.9
0.1	Hoary Verbena	0.5
0.8	Purple Prairie Clover	3.8
0.3	Roundhead Lespedeza	1.4
3.0	Showy Partridge Pea	14.1
0.2	White Prairie Clover	0.9
10.3	Total (lb)	48.3

NATIVE WILDFLOWER MIX 2

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

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

OPTION: Broadcast Tall Drop Seed on the soil surface.

SUMMARY OF SEEDING QUANTITIES

P.L.S. RATE/ACRE SHLDR	P.L.S. RATE/ACRE OTHER	ACRES SHLDR	ACRES OTHER	BID ITEM	QUANTITY	UNIT
200		0.37		Fertilizer(13-13-13)		LB
0.5		0.37		Seed (Blue Grama Grass)(Lovington)		LB
4.5		0.37		Seed (Buffalograss)(Treated)		LB
45		0.37		Seed (Perennial Ryegrass)		LB
2.6		0.37		Seed (Prarie Junegrass)		LB
6.3		0.37		Seed (Side Oats Grama Grass)(El Reno)		LB
45		0.37		Seed ((Tall Fescue)(Endophyte-Free)		LB
6		0.37		Seed (Western Wheatgrass)(Barton)		LB
						LB
						LB
						LB
						LB
						LB
						LB
						LB
						LB
						LB
						LB
				Seeding	LUMP SUM	LS
				Mulching *		

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

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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

PERMANENT SEEDING SUMMARY OF SEEDING QUANTITIES

LA850

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

Plotted by : CAM 9-DEC-2024 16:50
File : la850.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	43	52

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.

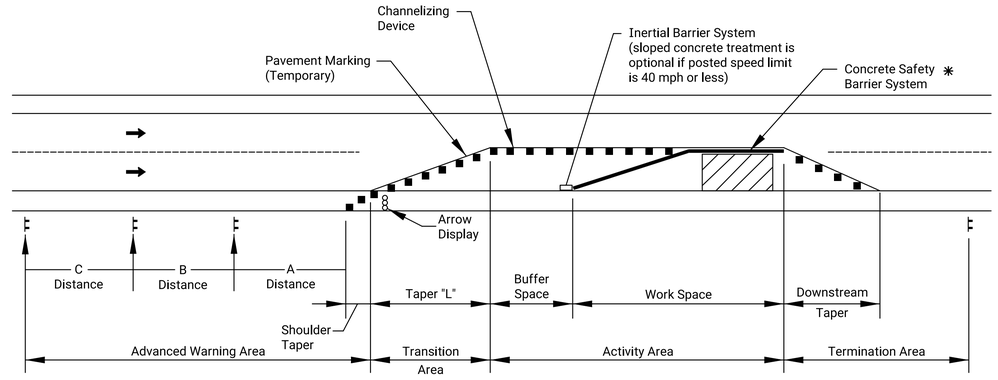
2) Minimum Lane Width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

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 = WS²/60 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

(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.

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.

(4) Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.

(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

Buffer Space

SPEED (MPH) ✳	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70*	*75*
LENGTH (ft)	*115*	*155*	*200*	*250*	*305*	*360*	*425*	*495*	*570*	*645*	*730*	*820*

✳ Posted speed prior to work starting

Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

If temporary concrete safety barrier system is used to separate approaching traffic from the work space, the barrier system shall be considered part of the activity area. A full lane width should be available throughout the length of the buffer space. See typical work zone components above.

NO.	DATE	REVISIONS	BY	APP'D
02	03-13-18	W8-15p usage changed to Shall	R.W.B.	E.K.G.
01	08-18-15	Channelizer spacing info	R.W.B.	K.E.

KANSAS DEPARTMENT OF TRANSPORTATION

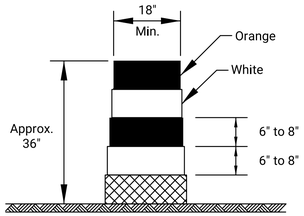
TRAFFIC CONTROL GENERAL NOTES

TE700

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

Plotted by : CAM 9-DEC-2024 16:50
File : TrafficControl.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	44	52



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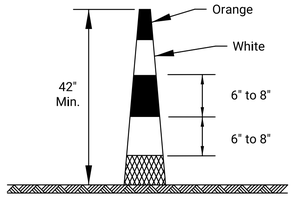
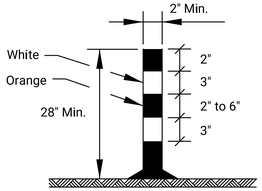
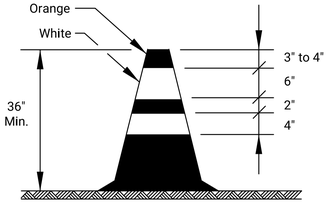


CONICAL
DELINEATOR

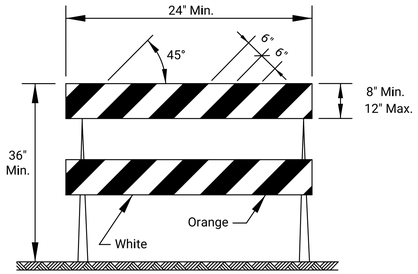


TUBULAR MARKER

Striping as shown for up to 42".

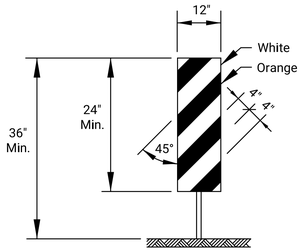


TRAFFIC CONE



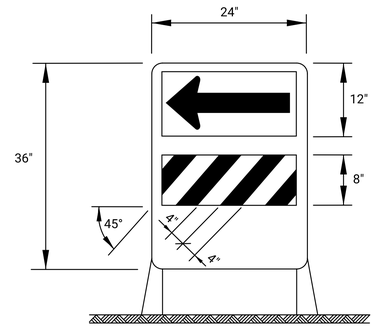
TYPE 2 BARRICADE

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



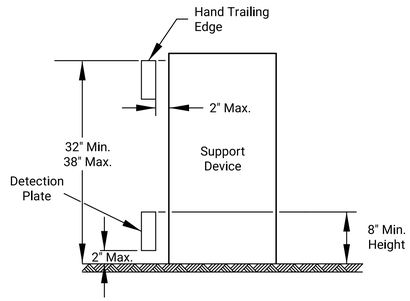
VERTICAL PANEL

The stripes shall slope downward to the traffic side for channelization.



DIRECTION INDICATOR BARRICADE

The stripes shall slope downward in the direction traffic is to pass. The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.



PEDESTRIAN CHANNELIZER

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

Item	Location	Cross-overs	Shoofly Diversions	Tangents	Tapers	Ramps	Head to Head	Object Identifier	Lead-in Devices	Gores
Portable										
	Drums	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Conical Delineators	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Vertical Panels	(2)	(2)	(2)	(2)	(2)	(1,2)	Yes	(2)	(2)
	Direction Indicator Barricade	No	No	No	Yes	No	No	No	No	No
	Type 2 Barricade	(2)	(2)	(2)	(2)	No	No	Yes	No	No
	Traffic Cones	No	No	(4)	(4)	(4)	No	(4)	(4)	(4)
Fixed										
	Tubular Markers	(3)	(3)	(3)	No	(3)	Yes	No	Yes	Yes
	Vertical Panels	(3)	(3)	(3)	(3)	(3)	(3)	Yes	(2,3)	(2)

(1) Not allowed on centerline delineation along freeways or expressways.
(2) The stripes shall slope downward to the traffic side for channelization.
(3) May be used upon the approval of the engineer.
(4) Daytime operations only.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CHANNELIZING DEVICES

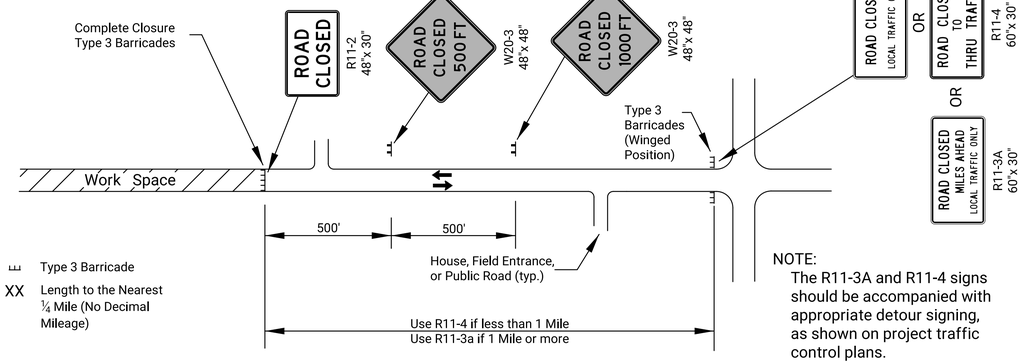
TE702

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

Plotted by : CAM 9-DEC-2024 16:50
File : TrafficControl.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	45	52

Note: Signs shown for one approach to work zone.



NOTE:
The R11-3A and R11-4 signs should be accompanied with appropriate detour signing, as shown on project traffic control plans.

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

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

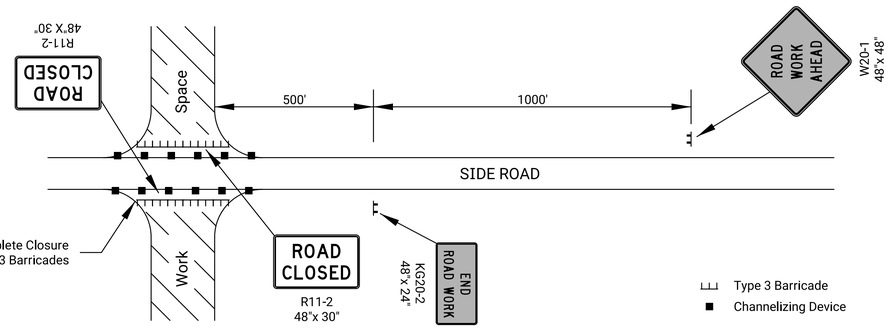


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

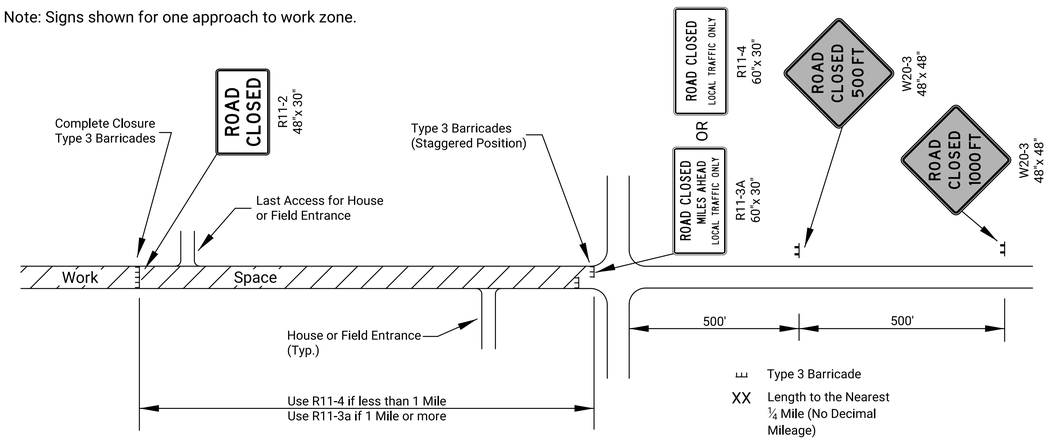


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

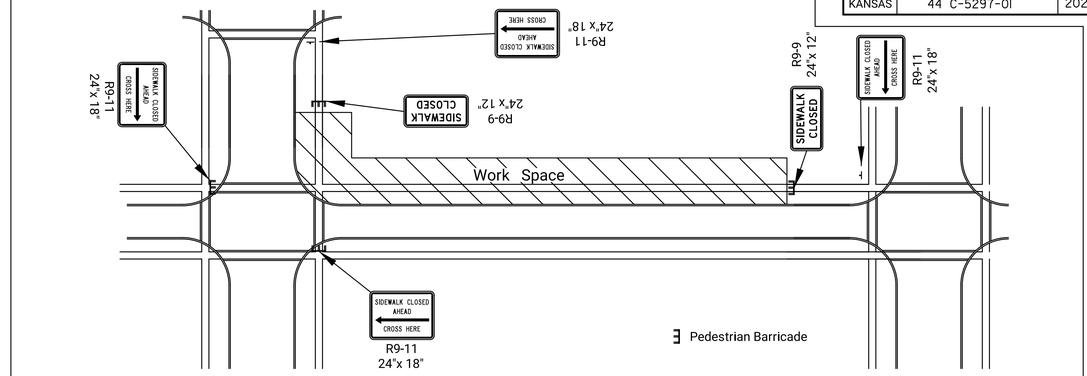
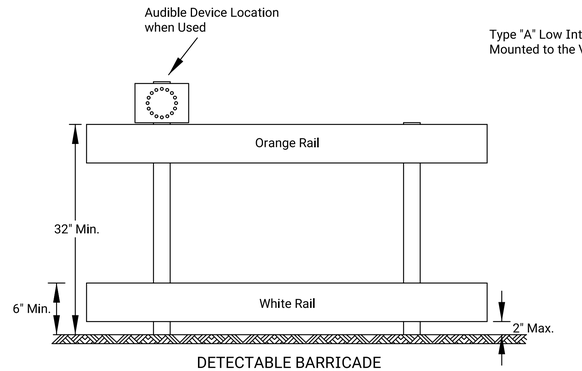
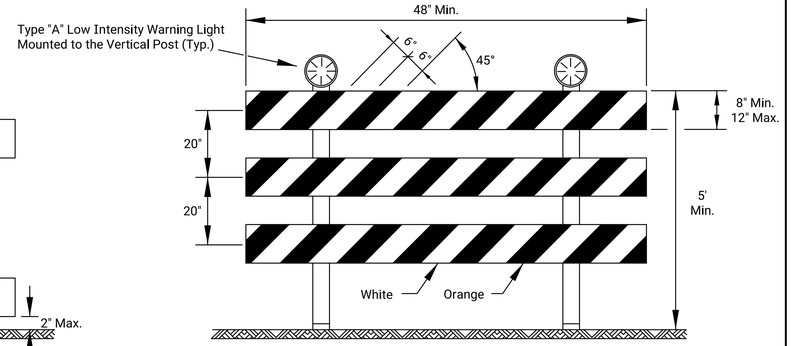


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE



DETECTABLE BARRICADE

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



TYPE 3 BARRICADE WITH LIGHTS

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

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

ROAD CLOSED GENERAL NOTES

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

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

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

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

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

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

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

Plotted by : CAM 9-DEC-2024 16:50
File : TrafficControl.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	46	52

SIGN LAYOUT INFORMATION

END ROAD WORK
KG20-2

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

WAIT FOR PILOT CAR
KG20-5

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

WORK ZONE
KM4-20

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

NE T MILES
W7-3a

Mileage to be Determined by the Engineer.


W8-17

Std. Size Expwy/Freeway
48"x 48"

SHOULDER DROP-OFF
W8-17P
(Optional)

Std. Size Expwy/Freeway
30"x 24"

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

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

US-75 CLOSED NORTH OF Topeka FOLLOW DETOUR
SP-02
(Special Sign)

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

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

GROOVED PAVEMENT
W8-15

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

LOOSE GRAVEL
W8-7

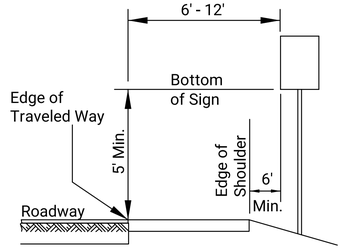
Std. Size Expwy/Freeway
8" D
48"x 48"


W8-15p

Std. Size Expwy/Freeway
30"x 24"

UNEVEN LANES
W8-11

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

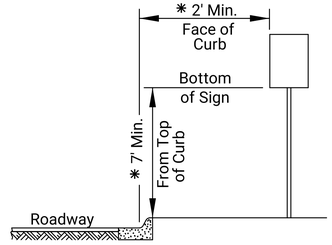


RURAL

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

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

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



URBAN

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

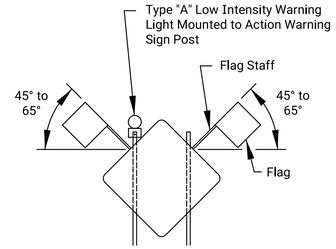
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

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

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

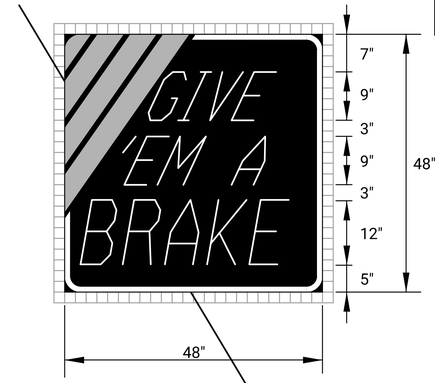
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

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



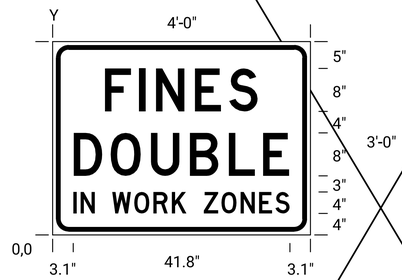
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

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



KI-104a

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



KI-105a

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

Dimensions in inches

Spacings are to start of next letter

Y FONT	LETTER SPACINGS															HT LEN
23.0 D		F	I	N	E	S										8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D		D	O	U	B	L	E									8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D		I	N		W	O	R	K		Z	O	N	E	S		4.0
	3.1	1.6	2.7	3.2	4.3	3.8	3.6	2.8	3.2	3.4	3.8	3.6	3.2	2.7	3.1	41.8

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' in advance of the road work ahead sign. The engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN INFORMATION

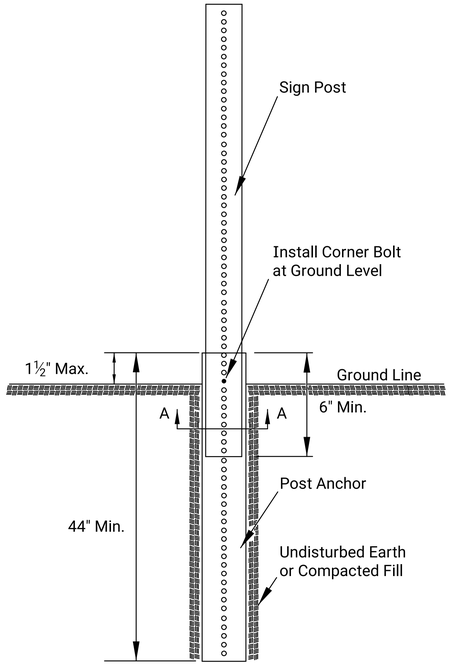
TE710

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

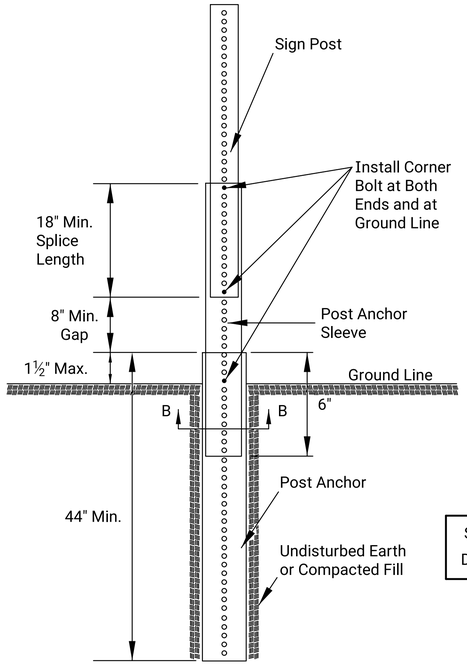
Plotted by : CAM 9-DEC-2024 16:50
File : TrafficControl.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	47	52

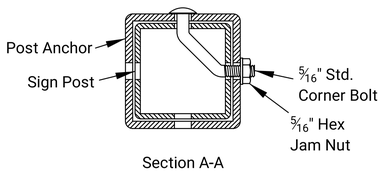
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



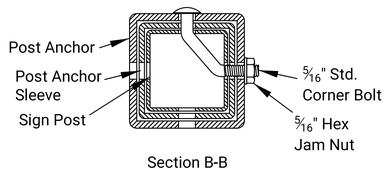
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

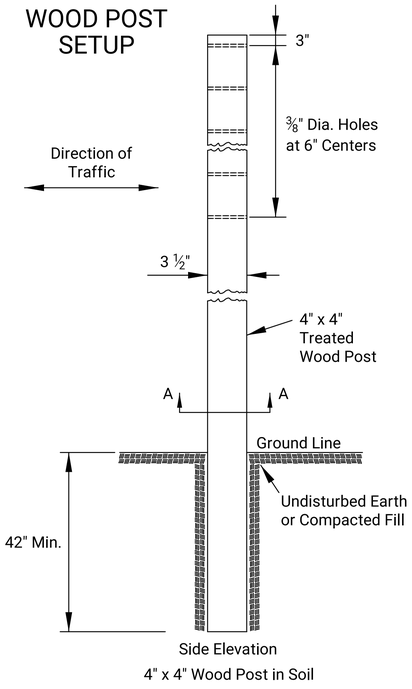


Section B-B

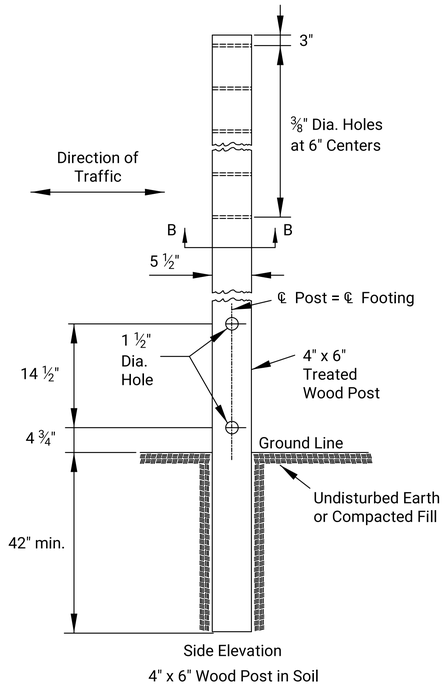
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

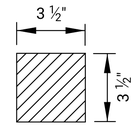
WOOD POST SETUP



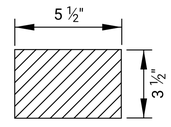
Side Elevation
4" x 4" Wood Post in Soil



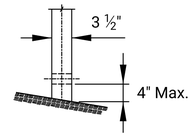
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



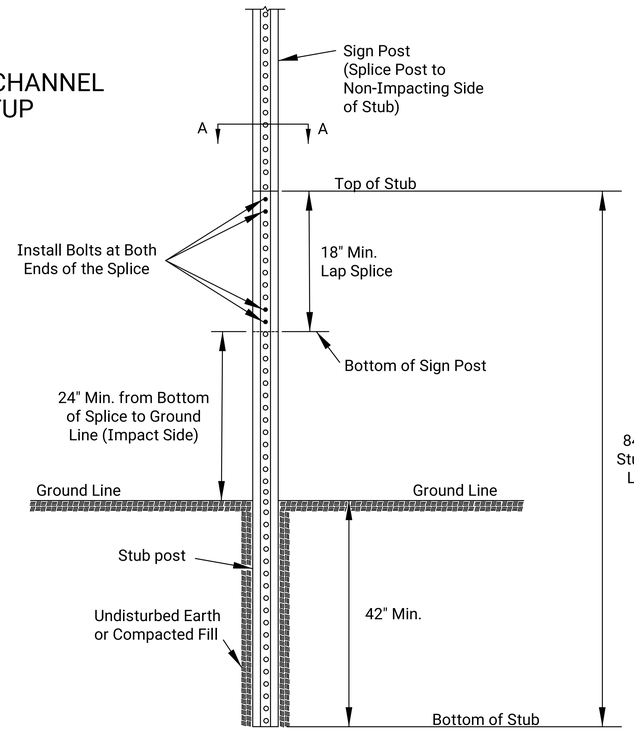
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

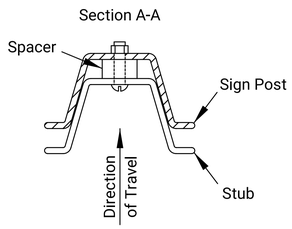
3 LB/F U-CHANNEL SETUP



Notes:

Place two bolts at both ends of the splice through the holes nearest the ends of the splice.

Use manufacturer recommended spacers over the bolts between the spliced pieces of U-Channel.



NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

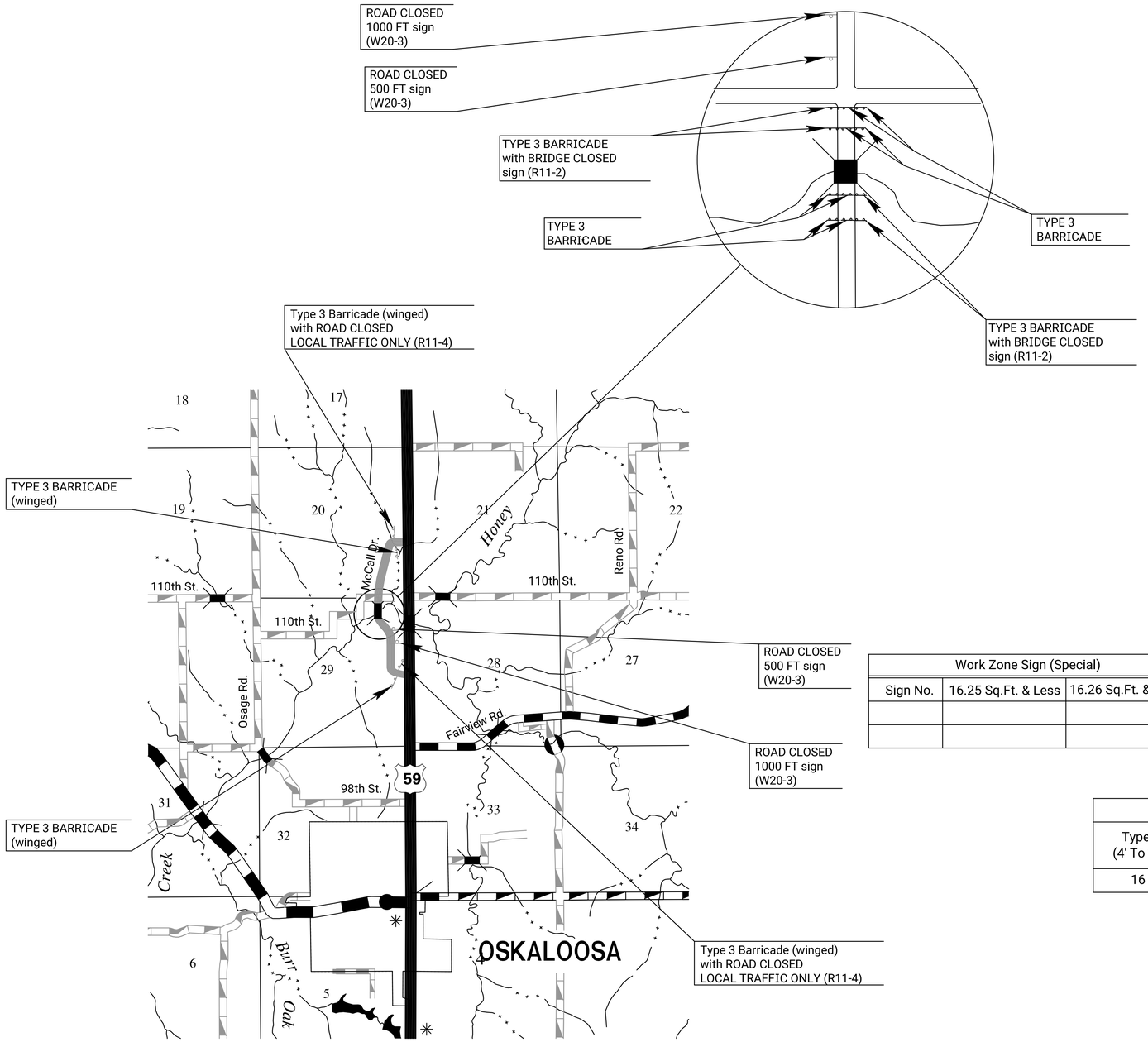
TRAFFIC CONTROL SIGN POSTS

TE712

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

Plotted by: CAM 9-DEC-2024 16:50
File: TrafficControl.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	48	52



LOCATION MAP

Recapitulation of Quantities		
Item	Quantity	Unit
Work Zone Signs (0 to 9.25 Sq.Ft.)		Each Per Day
Work Zone Signs (9.26 to 16.25 Sq.Ft.)		Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)		Each Per Day
Work Zone Barricades (Type 3 - 4' to 12')		Each Per Day
Work Zone Barricades (Pedestrian)		Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)		Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)		Each Per Day
Work Zone Warning Light (Red Type "B" High Intensity)		Each Per Day
Arrow Display		Each Per Day
Portable Changeable Message Sign		Each Per Day
Pavement Marking (Temporary)		
4" Solid (Type I)		Sta./Line
4" Solid (Type II)		Sta./Line
4" Broken (8.0') (Type I)		Sta./Line
4" Broken (8.0') (Type II)		Sta./Line
4" Broken (3.0') (Type I)		Sta./Line
4" Broken (3.0') (Type II)		Sta./Line
4" Dotted Extension (Type I)		Sta./Line
4" Dotted Extension (Type II)		Sta./Line
Solid (Line Masking Tape)		Sta./Line
Broken (Line Masking Tape)		Sta./Line
Symbol (Type I)		Each
Symbol (Type II)		Each
Flexible Raised Pavement Marker (4" Broken (8.0'))		Sta./Line
Flexible Raised Pavement Marker (4" Broken (3.0'))		Sta./Line
Pavement Marking Removal		Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)		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
Traffic Control	Lump Sum	Lump Sum
Flagger (Set Price)	1	Hour

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over

Barricades ✳		Channelizing Devices ✳		
Type 3 (4' To 12')	Pedestrian	Fixed	Portable	Pedestrian
16				

SUMMARY OF
TRAFFIC CONTROL DEVICES

✳ QUANTITY MOST USED ON THE PROJECT AT ANY ONE TIME

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	20
Work Zone Warning Light (Red Type "B" High Intensity)	
Arrow Display	
Portable Changeable Message Sign	

Work Zone Signs ✳			
Sign No.	Size - Sq.Ft.		
	0-9.25	9.26-16.25	16.26 & Over
R11-2		4	
R11-4		2	
W20-3		4	

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

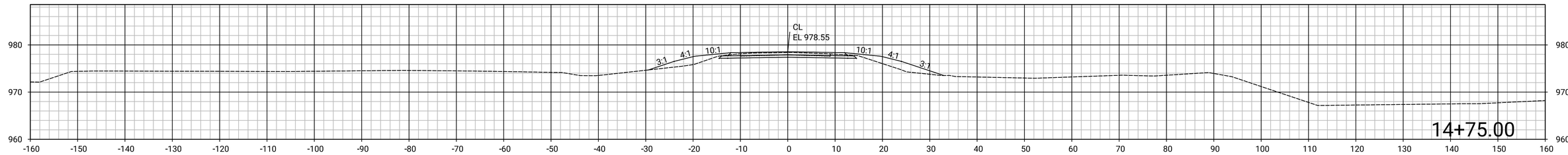
TRAFFIC CONTROL
SUMMARY OF DEVICES
RECAPITULATION OF QUANTITIES

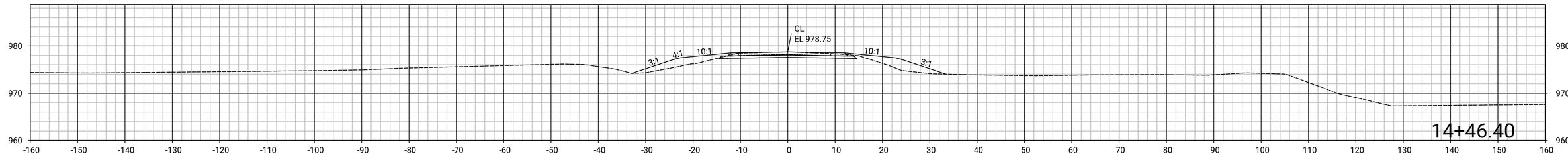
~~TE795~~

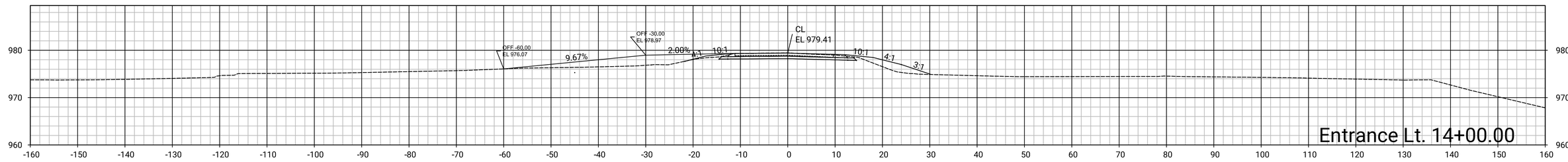
FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

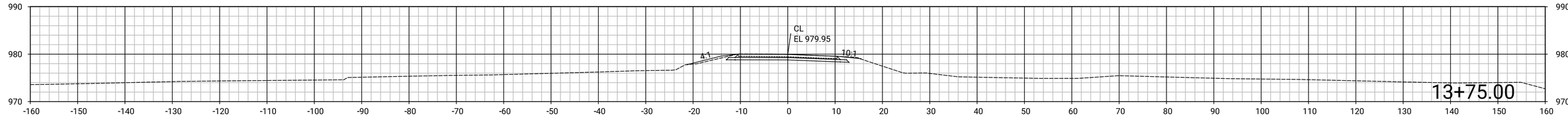
Plotted by : CAM 9-DEC-2024 16:50
File : TrafficControl.dgn

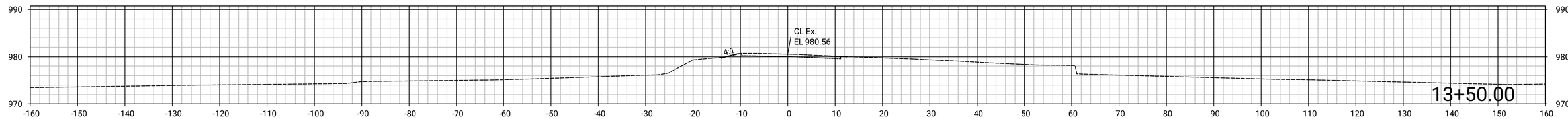
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	49	52

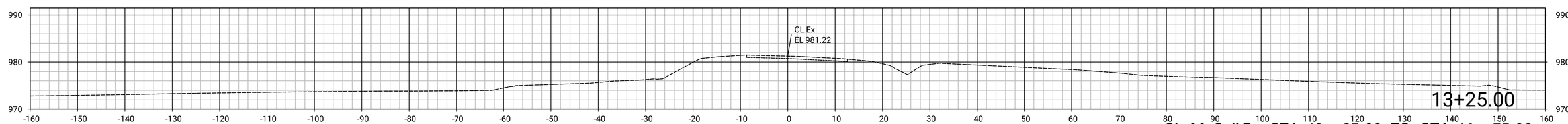












CL McCall Dr. STA. 13 + 25.00 TO STA. 14 + 75.00

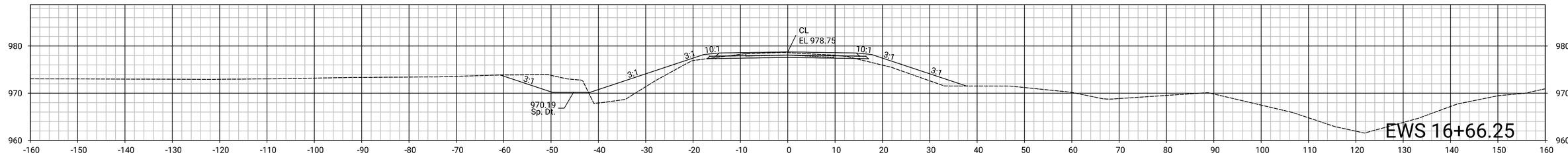
1:10

DATE	BY	REFERENCES NOTED	REFERENCES CHECKED

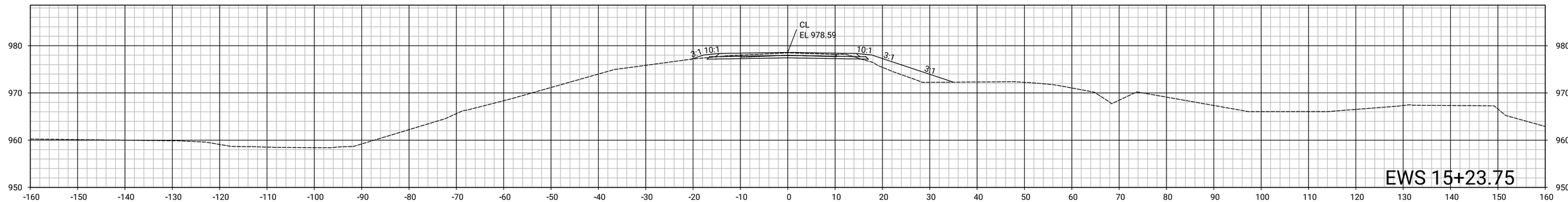
Plotted by : CAM 9-DEC-2024 16:50
File : xsec Sheets Road McCallSlough.dgn

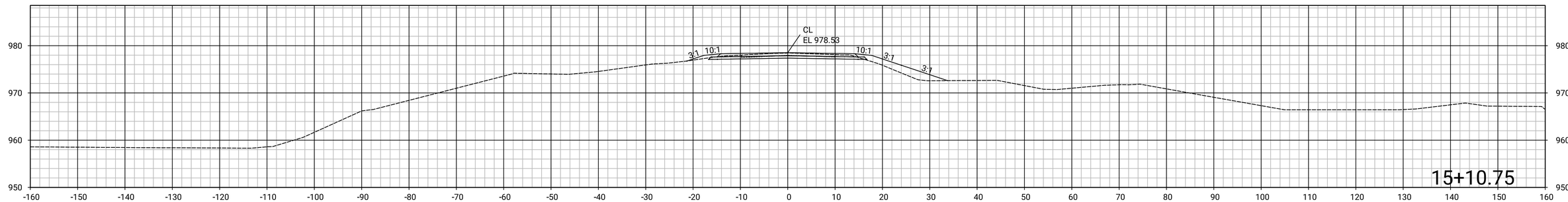
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	50	52

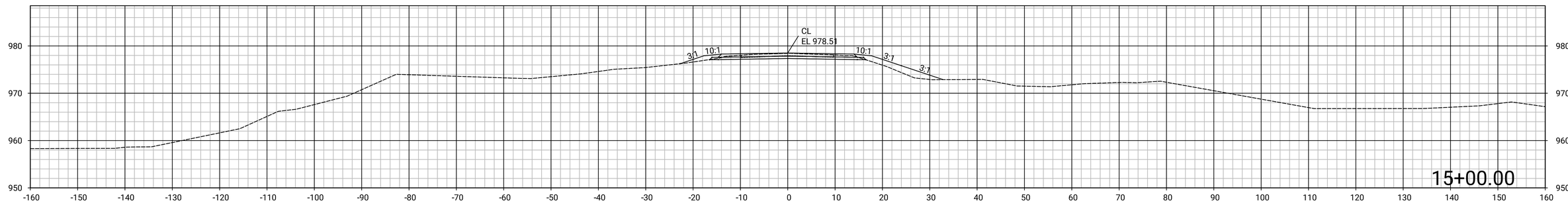
DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED



BRIDGE







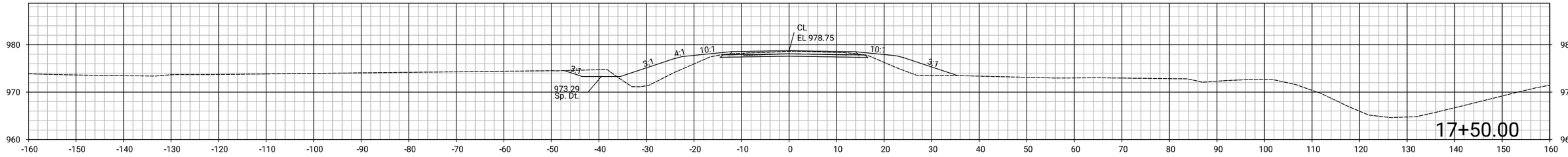
CL McCall Dr. STA. 15 + 00.00 TO STA. 16 + 66.25

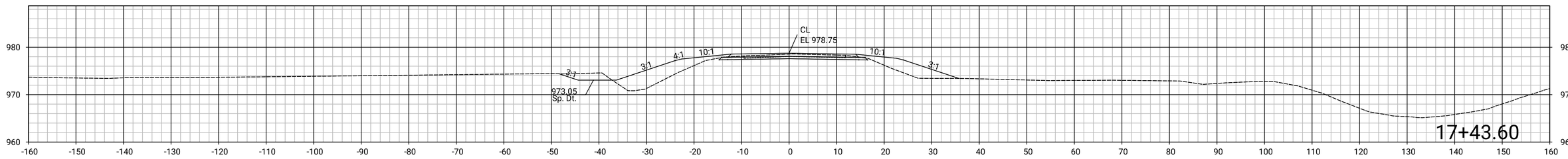
1:10

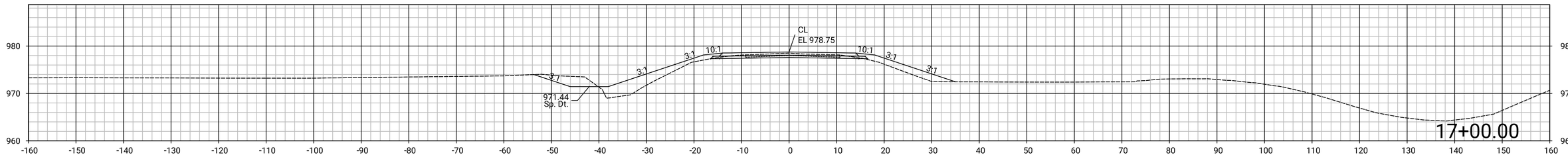
Plotted by : CAM 9-DEC-2024 16:50
File : xsec Sheets Road McCallSlough.dgn

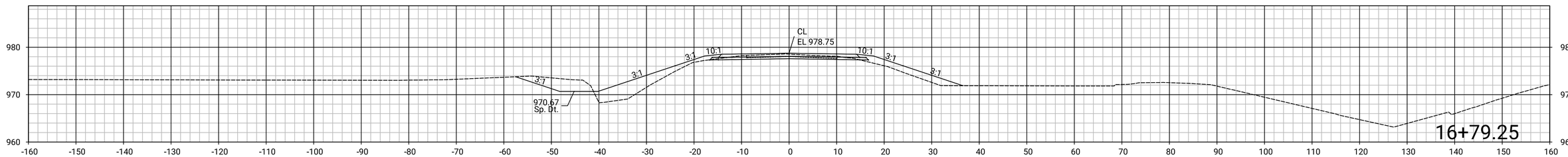
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	51	52

DATE	BY	REFERENCES NOTED	REFERENCES CHECKED









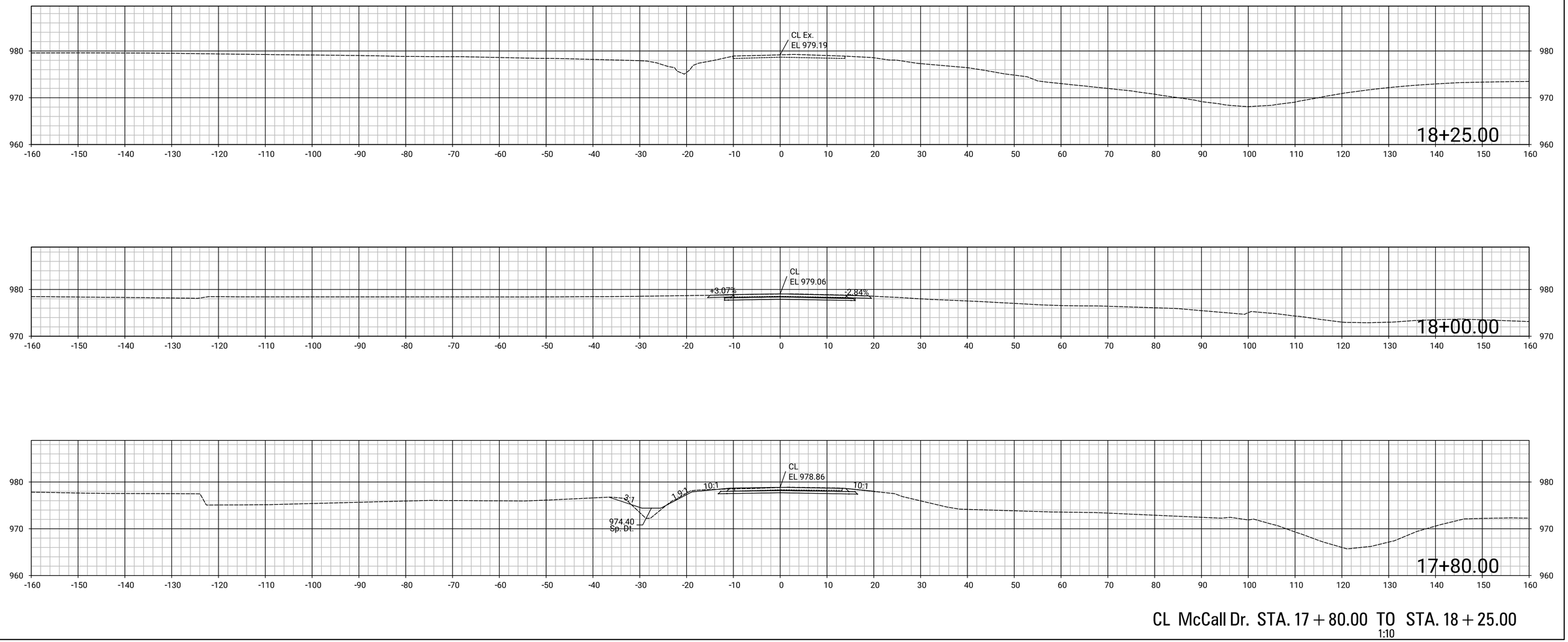
CL McCall Dr. STA. 16 + 79.25 TO STA. 17 + 50.00

1:10

Plotted by : CAM 9-DEC-2024 16:50
File : xsec Sheets Road McCallSlough.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	44 C-5297-01	2024	52	52

DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED



CL McCall Dr. STA. 17 + 80.00 TO STA. 18 + 25.00

1:10

Plotted by : CAM 9-DEC-2024 16:50
File : xsec Sheets Road McCallSlough.dgn