Furches Trl, Calloway County (018C00051N)

Calloway County has requested for Bridge ID 018C00051N to be submitted for the County & City Bridge Improvement Program. This bridge is located on Furches Trl at the 1.59 mile point. Based on the latest Inspection Report, created on 7/03/2024, the Deck rating is a 6, the Superstructure rating is a 6, and the Substructure rating is a 3.

The Inspection Photos, created on 7/03/2024, were utilized in tandem with the Inspection Report as a preliminary diagnosis on the issues pertaining to Bridge ID 018C00051N. The biggest issues found were the condition of the substructure. There is approximately 2 each of CS4 decay/section loss for the timber piles.

Once preliminary notes were made based on the Inspection Report, a team of Engineers from KYTC D1 went to the site to compare the report to current issues. The team took notes and measurements on-site. The measurements taken at Bridge ID 018C00051N were found to be:

- 42 ft structure length,
- 21 in. depth of super,
- 18 ft roadway width,
- 42 ft streambed width,
- 26 ft end bent width (both end bents),
- 11 ft tall (measure from streambed to bottom of beams)

The notes consisted of a Standard Template of a side elevation view of a bridge consisting of the deck/beam, abutments, piles, slopes, streambed, and piers (if applicable to the bridge). Notes were made on the Template when on-site to report issues found during the inspection, as well as possible fixes for said issues. The Standard Template with notes made will be attached to this report for reference.

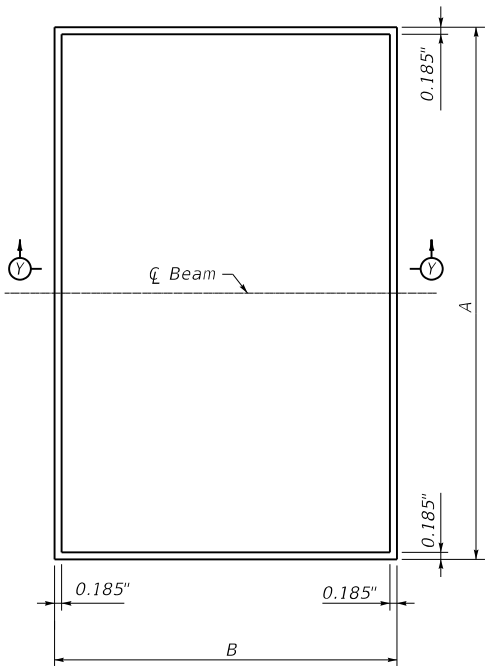
Inspection was made at Bridge ID 018C00051N with KYTC D1 engineers. While on-site, it was determined that a total replacement would be needed since the channel has grown wider than what the total length of the bridge can handle as well as being the most economical option compared to cost of rehab. It would need to be extended from a 42 ft span to an 82 ft span to ensure protection of the piles/end bents from scour due to the channel.

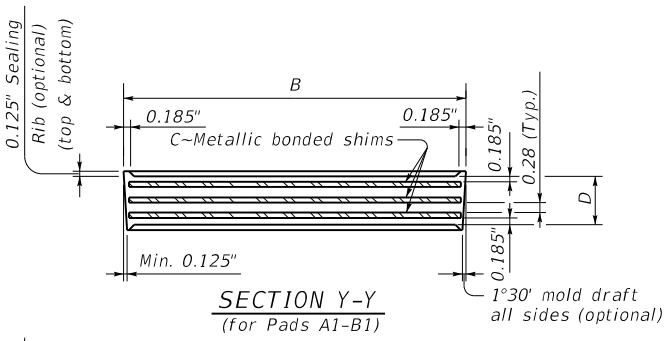
Based on these findings, work to be done for Bridge ID 018C00051N would include:

- Replace old timber piles with new steel piles as well as new end bents, also correct the channel flow through the middle of the bridge. This would provide protection against scouring for the piles/abutments and improve the rating for the Substructure.
- Replace existing beams with new Precast Prestressed Box Beams due to requiring a longer span. This would improve the rating for the Deck and Superstructure.
- Create a slope at new End Bents to provide bearing and protection for the piles against scour. This would improve the Substructure rating.

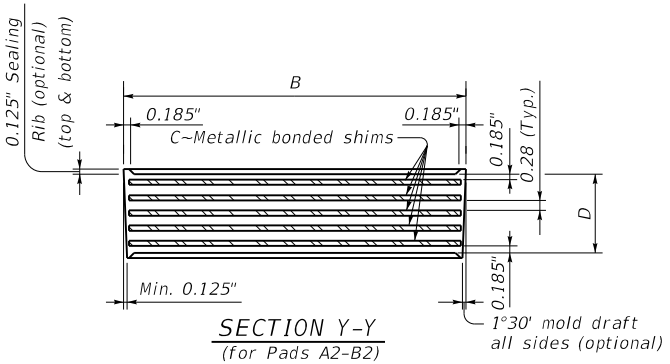
The work done based on the above suggestions should follow the KYTC Standard Specifications and, if applicable, Standard Drawings. All work done for Precast Prestressed Box Beams will include, but not be limited to:

- *Elastomeric Bearing Pads per Drawing BBP-003-02*
- *Railing System Type II Guardrail Treatment per Drawing BHS-007-07*
- *Precast Prestress Box Beams General Notes per Drawing BDP-001-05*
- *Box Beam Bearing Details per Drawing BDP-002-03*
- *Box Beam Tension Rod Details per Drawing BDP-004-03*
- *Railing System Type II per Drawing BDP-005-05*
- *Box Beam B42 Details per Drawing BDP-011-04*
- *HP12x53 Steel Pile per Drawing BPS-003-09*
- *Modified Pile End Bent 0 Degree Skew*
    - It should be noted that using a 1.5:1 slope will require more maintenance compared to using a 2:1 slope
    - Piles will be utilizing restrictor plates to assist in reaching pile loads thus allowing for shallower pile depths
- *Grout per Section 601.03.03*





SECTION Y-Y
(for Pads A1-B1)



SECTION Y-Y
(for Pads A2-B2)

DIMENSIONS FOR BOX-BEAM PADS

PAD	A	B	C	D	*MAXIMUM REACTION	MAXIMUM MOVEMENT (One Direction)
A1	1'-10"	7"	3~0.12" x 21.630" x 6.630"	1.290"	173k	0.500"
A2	1'-10"	7"	5~0.12" x 21.630" x 6.630"	2.090"	173k	0.750"
B1	11"	7"	3~0.12" x 10.630" x 6.630"	1.290"	69k	0.500"
B2	11"	7"	5~0.12" x 10.630" x 6.630"	2.090"	69k	0.750"

* These reactions are based on service loads, use actual reactions to determine anchorage requirements for pads.

GENERAL NOTES

SPECIFICATIONS: Fabricate the Elastomeric Bearing Pads to the design and dimensions as shown on these drawings and to AASHTO LRFD Bridge Construction Specifications, Section 18.

Ensure bearings are low temperature Grade 3 with durometer hardness of 50 and subjected to the load testing requirements corresponding to Design Method A.

Include the price of bearing pads in the bid for the beams.

KENTUCKY
DEPARTMENT OF HIGHWAYS

ELASTOMERIC BEARING
PADS FOR
BOX BEAMS

STANDARD DRAWING NO. BBP-003-02

SUBMITTED _____ 02-26-20
DIRECTOR DIVISION OF STRUCTURAL DESIGN — DATE

APPROVED _____ 02-26-20
STATE HIGHWAY ENGINEER — DATE

PRECAST PRESTRESSED BOX BEAMS

General Notes

SPECIFICATIONS: All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, with current supplemental specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.

DESIGN LOADS: Beam sections are designed for 1.25*HL93 (KYHL93) Live Load.

DESIGN LOAD DISTRIBUTION: Contrary to AASHTO LRFD Bridge Design Specifications, the design moment and shear distribution for all beams is 0.5 lanes.

FUTURE WEARING SURFACE: These beams are designed for a 15 PSF future wearing surface load.

SUBSTRUCTURE DESIGN LOADS: Unfactored design reaction forces per beam end.
DC (kips): Beam, Slab (if applicable), and Type II railing dead loads.
DW (kips): Future wearing surface.
LL (kips): Beam Live Load reaction per lane x Design load distribution.
LL+I (kips): LL with Dynamic load allowance.

DESIGN DEFLECTIONS:
Δd (in.): Sum of the downwards deflections caused by the design 5" deck, railing, and future wearing surface. (Positive Downwards)
Δc (in.): Upwards midspan camber of the beam caused by prestressing minus the downward deflection of the beam due to self weight. (Positive Upwards)

MATERIAL DESIGN SPECIFICATIONS:

for Steel Reinforcement	FY = 60000 PSI
for Prestressed Girder Concrete (Typ. U.N.O.)	F'C = 7000 PSI
	F'CI = 5500 PSI
for Class "AA" Concrete	F'C = 4000 PSI
for Prestressing Steel	F'S = 270000 PSI

DESIGN LENGTH: Beam lengths shown in the Standards represent total beam length. Use the next greater designed section for non-Standard lengths.

CONSTRUCTION METHOD: Transferring bond stress to the concrete will not be allowed, nor releasing of end anchors until the concrete has attained a minimum compressive strength of F'CI as shown by standard cylinders made and cured identically with the girders; attain F'C at or prior to 28 days. Apply an initial prestress force of 33817 lbs. per low relaxation strand. Beams with honeycomb of such extent as to affect the strength of resistance to deterioration will not be accepted. The allowance of .0005L (length) is made for shortening of beams due to shrinkage and elastic change. Furnish shop plans showing a detensioning plan by numbering, in sequence, the strand pattern.

PRESTRESSING STRANDS: Ensure prestressing strands to be ½" oversize (0.167 sq. in.) uncoated seven-wire stress relieved, low-relaxation strands conforming to AASHTO M 203, Grade 270. If an alternate strand arrangement or strand type is preferred by the Contractor, the designer that developed the original plans will provide the design and also revise the original plans to reflect the changes. These design and plan modifications will be done at the Contractor's expense.

CORROSION INHIBITOR: Provide a corrosion inhibitor for B-type (non-composite) beams from the list of approved materials.

BEVELED EDGES: Bevel all exposed edges ¾".

BEAM SEALER: For composite box beams (CB Beams), seal the full length of the exterior face of all exterior beams with the extent from the top of the beam to 1'-0" underneath the beam. For non-composite box beams (B beams), seal all faces of all beams, except take care to ensure the grout pockets are not sealed. Use an approved silane sealer as specified by the Division of Structural Design.

REINFORCEMENT: Dimensions shown from the face of concrete to reinforcement are clear distances. Spacing of reinforcement is from center to center of reinforcement. All steel reinforcement is to be epoxy coated in accordance with Section 811.10 of the Specifications. Consider bars marked "C" to be a stirrup for purposes of bend diameters. Non-epoxy reinforcement may be used for fabrication purposes, only, provided that the steel is not used in the top 5½" of the beam and the location of the steel is indicated on the shop drawings.

FABRICATION: Beams shall not be fabricated more than 120 days before the deck is to be poured.

GROUT: Provide non-shrink grout for anchor dowels, shear keys, and tensioning rod block-outs conforming with Section 601.03.03 of the Specifications. When side by side superstructure is utilized, grouting will be completed after lateral tension rods have been fully tightened and before leveling devices have been removed. Include the cost of furnishing and placing grout in the price of beam.

RAILING SYSTEM TYPE II: Furnish this material per these specifications.

ITEM	DESCRIPTION	MATERIAL SPECIFICATION	COATING SPECIFICATION
Post	W6x25	ASTM A36 or A572	A123
Channel	C7x9.8	ASTM A36 or A572	A123
Plate	½"x 7"	ASTM A36 or A572	A123
Tubing	8x4x0.1875	ASTM A500 or A501	A123
Bolts	⅝"	ASTM A307	A153
Nuts	for ⅝"	ASTM A563, Grade A or better	A153
Washers	for ⅝"	ASTM A563, Grade A or better	A153
Stud	1¼"	ASTM A108 (1045 C.D. Bar)	B633, Type II, Class 25
Ferrule	2½"x 5"	ASTM A108 (11L17 Steel)	B633, Type II, Class 25
Wire	⅜"	ASTM A510 (1018 Steel)	B633, Type II, Class 25
Nut	for 1¼" Bolt	ASTM A108 (12L14 Steel)	B633, Type II, Class 25
Nut	for 1¼" Stud	ASTM A325M	B633, Type II, Class 25
Washers	for 1¼" Stud	ASTM A325M	B633, Type II, Class 25

Use the current edition of the references listed below with these standards.

STANDARD DRAWINGS

BBP-003	Elastomeric Bearing Pads
BHS-007	Railing System Type II
BJE-001	Armored Edge & Neoprene Joints
RBR-001	Steel Beam Guardrail
RBR-005	Guardrail Components

SPECIAL NOTES

for Corrosion Inhibitors

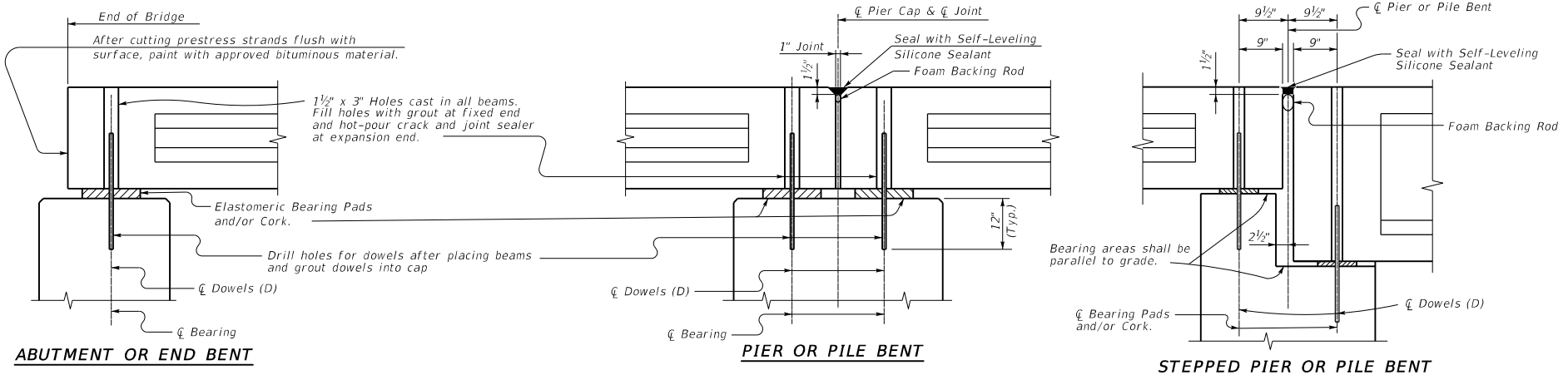
KENTUCKY
DEPARTMENT OF HIGHWAYS

BOX BEAM
GENERAL NOTES
AND REFERENCES

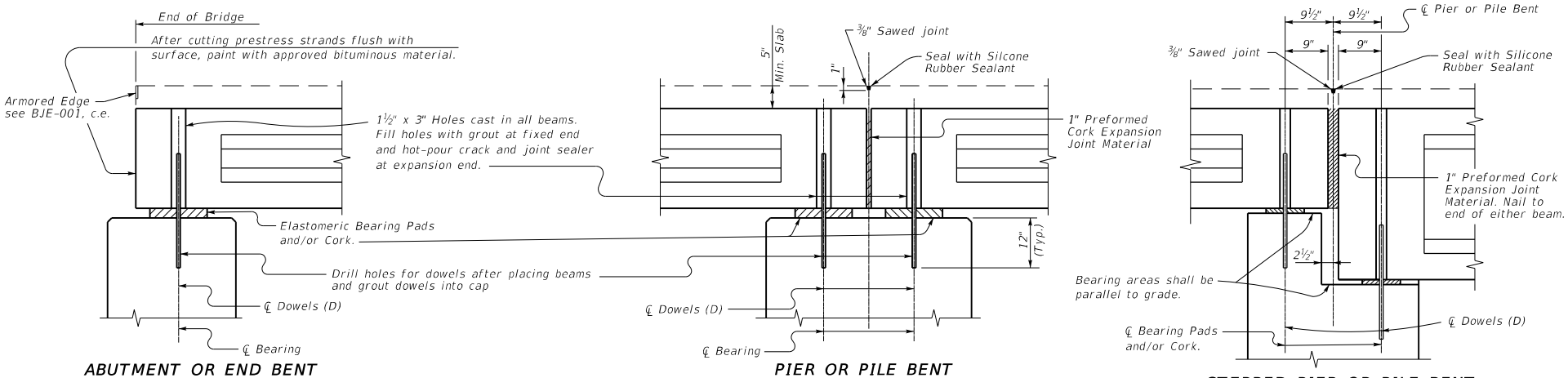
STANDARD DRAWING NO. BDP-001-06

SUBMITTED _____ 02-26-20
DIRECTOR DIVISION OF STRUCTURAL DESIGN — DATE

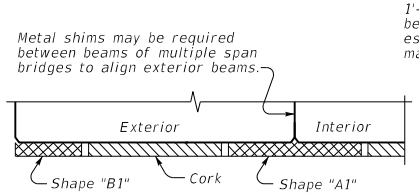
APPROVED _____ 02-26-20
STATE HIGHWAY ENGINEER — DATE

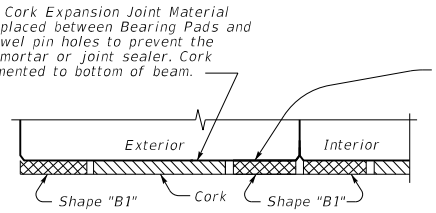


TYPICAL BEARING DETAILS (NON-COMPOSITE)



TYPICAL BEARING DETAILS (COMPOSITE)

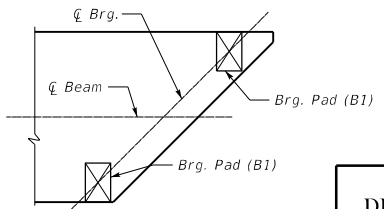




For Elastomeric Bearing Pad Details of Shapes A1 & B1, see Std. Dwg. BBP-003, c.e.

SHOWING PADS FOR BEAM TYPES B27-B42 & CB27-CB42

Use ½" x 1'-6" preformed cork for beam types B12-B21 & CB12-CB21 for bearing.



PAD PLACEMENT FOR SKEWS

Pads "B1" are to always be placed perpendicular to ℄ beam with center of pad over ℄ bearing.

GENERAL NOTES

Provide metal shims conforming to ASTM A36 and galvanize in accordance with ASTM A123. As alternates, cork, polymer, or elastomer shims may be used. Include the cost of furnishing and placing these shims in the price per beam.

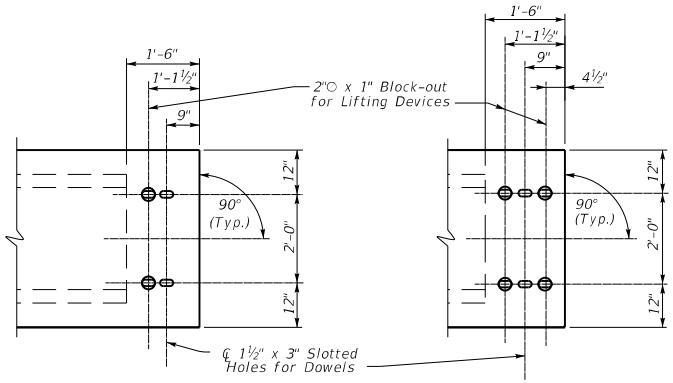
KENTUCKY
DEPARTMENT OF HIGHWAYS

BOX BEAM BEARING DETAILS

STANDARD DRAWING NO. BDP-002-03

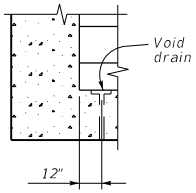
SUBMITTED _____ DIRECTOR DIVISION OF STRUCTURAL DESIGN — 02-26-20 DATE

APPROVED _____ STATE HIGHWAY ENGINEER — 02-26-20 DATE



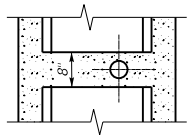
NOTE: Void omitted on 12" beams.

TYPICAL STRAIGHT END



VOID DRAIN DETAIL

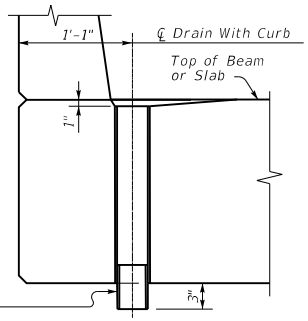
Locate two drains at each end of each void. Provide 1"○ drains of a type approved by the Division of Materials.



SECTION THRU BEAM

Diaphragms may be omitted if void is cut to allow drain to be encased with a minimum 2" of concrete.

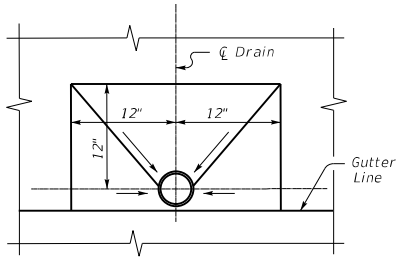
Provide drains on both sides of bridge with normal crown and on low side only for superelevated bridges. Space drains at maximum 12'-6" on centers with a minimum of one placed each gutter line per span. Omit drains when span crosses over a highway or railroad. Include the cost of pipe and fittings in the price of beam.



NPS Designation 4 Standard coupling and nipple in accordance with ASTM A53. Nipple to be installed in field

SECTION THRU DRAIN EXTERIOR BOX BEAM

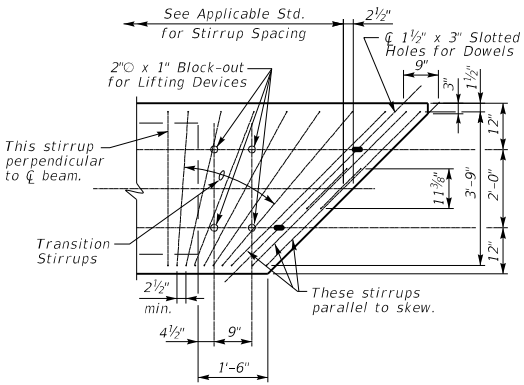
(Showing coupling in barrier)



TOP VIEW OF DRAIN

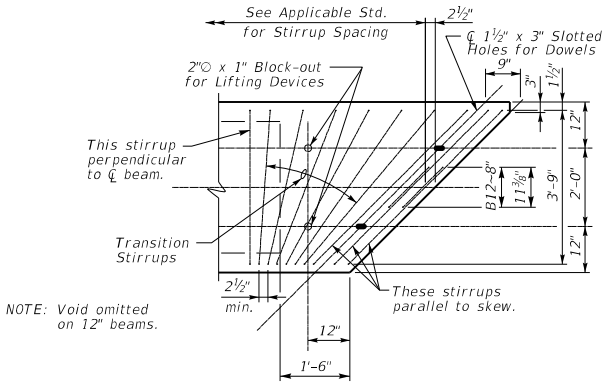
DRAIN DETAILS

(For Spans With Curbs)



TYPICAL SKEWED END FOR BEAMS OVER 50 FEET

(Right Skew Shown, Left Opposite Hand)

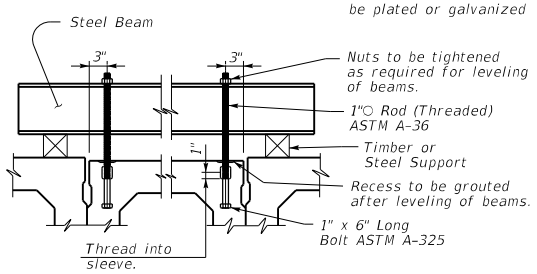


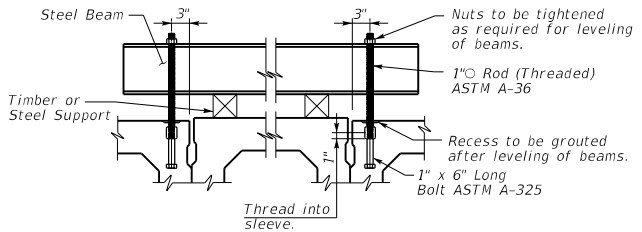
NOTE: Void omitted on 12" beams.

TYPICAL SKEWED END FOR BEAMS 50 FEET OR LESS

(Right Skew Shown, Left Opposite Hand)

NOTE: Inserts are to be plated or galvanized

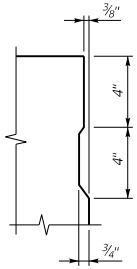




LEVELING DEVICE DETAILS

Locate inserts at the center of beams up to 50 ft. and at diaphragm locations of beams over 50 ft. Include the cost of materials and labor involved in leveling beams in the price for beams. Submit alternate leveling devices to the Division of Bridge Design for approval.

NOTE: Omit shear key on exterior face of exterior beam.



SHEAR KEY DETAIL

KENTUCKY
DEPARTMENT OF HIGHWAYS

BOX BEAM MISCELLANEOUS DETAILS

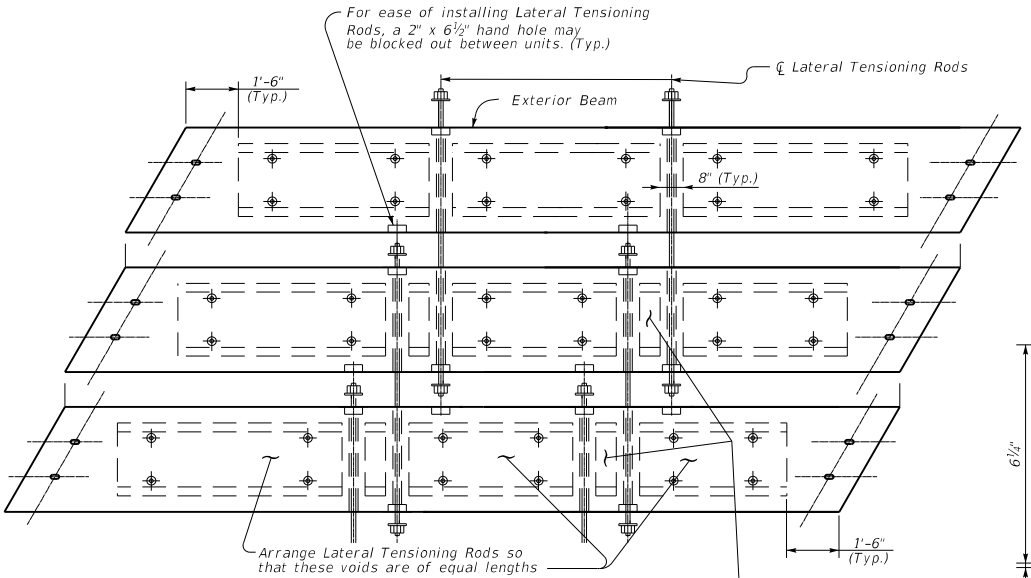
STANDARD DRAWING NO. BDP-003-03

SUBMITTED _____ DIRECTOR DIVISION OF STRUCTURAL DESIGN — DATE 02-26-20

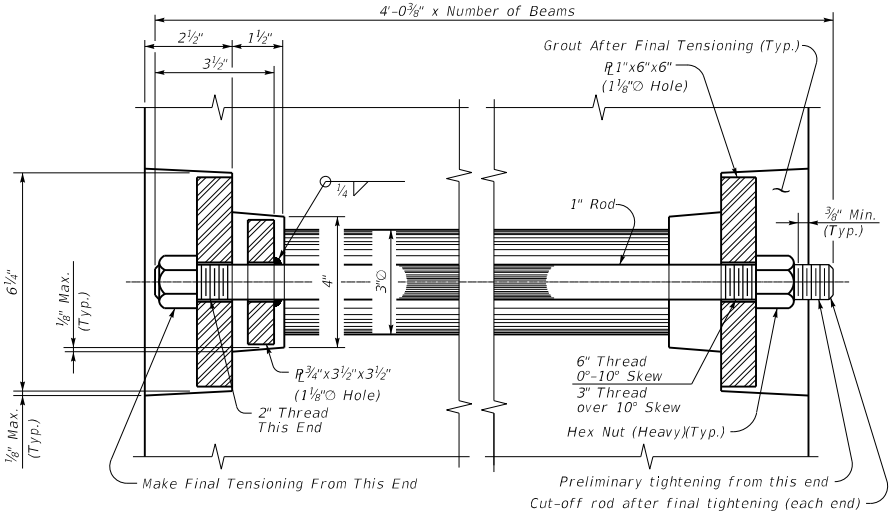
APPROVED _____ STATE HIGHWAY ENGINEER — DATE 02-26-20

GENERAL NOTES

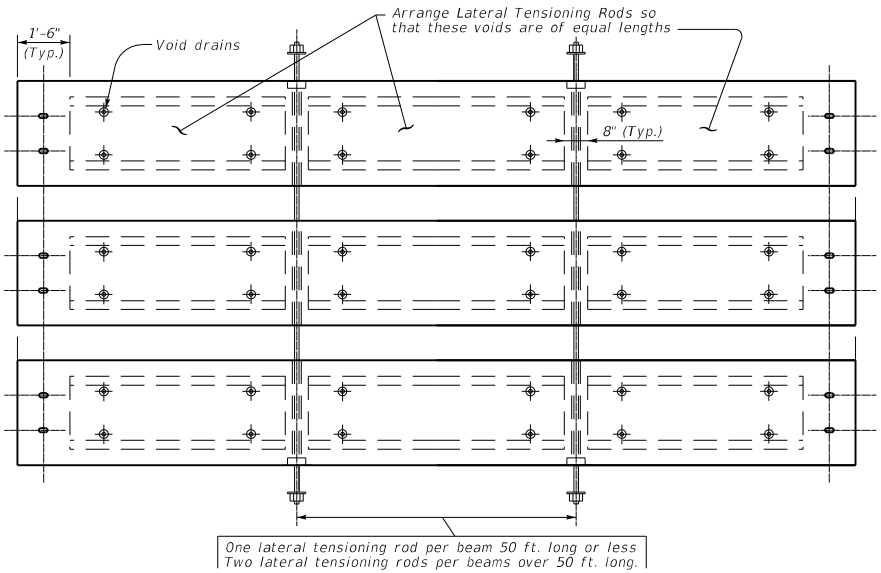
LATERAL TENSIONING RODS: After the deck units are in place, apply a preliminary tension to the lateral tensioning rods. Perform final tensioning that yields 20,000 psi as developed by a torque of 200 ft./lbs. Provide lateral tensioning rods and plates conforming to ASTM A36 with heavy hex nuts conforming to ASTM A307. All tension rods, plates, and nuts to be galvanized in accordance with ASTM A123 or A153 as applicable.



SECTIONAL PLAN SHOWING LATERAL TENSIONING METHOD FOR SKEWED SPANS

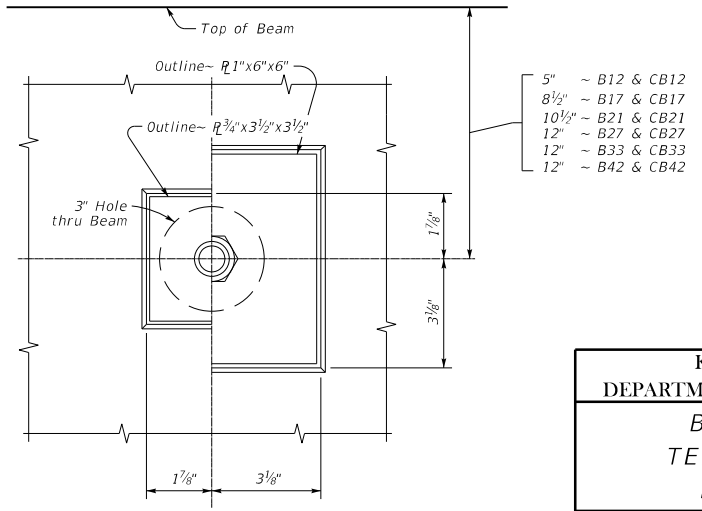


SECTION THRU LATERAL TENSIONING ROD



SECTIONAL PLAN SHOWING LATERAL TENSIONING METHOD FOR STRAIGHT SPANS

(The above arrangement is applicable from 0° skews to and Including 10° skews)



SECTIONAL END PLAN

(Lateral Tension Rod Details)

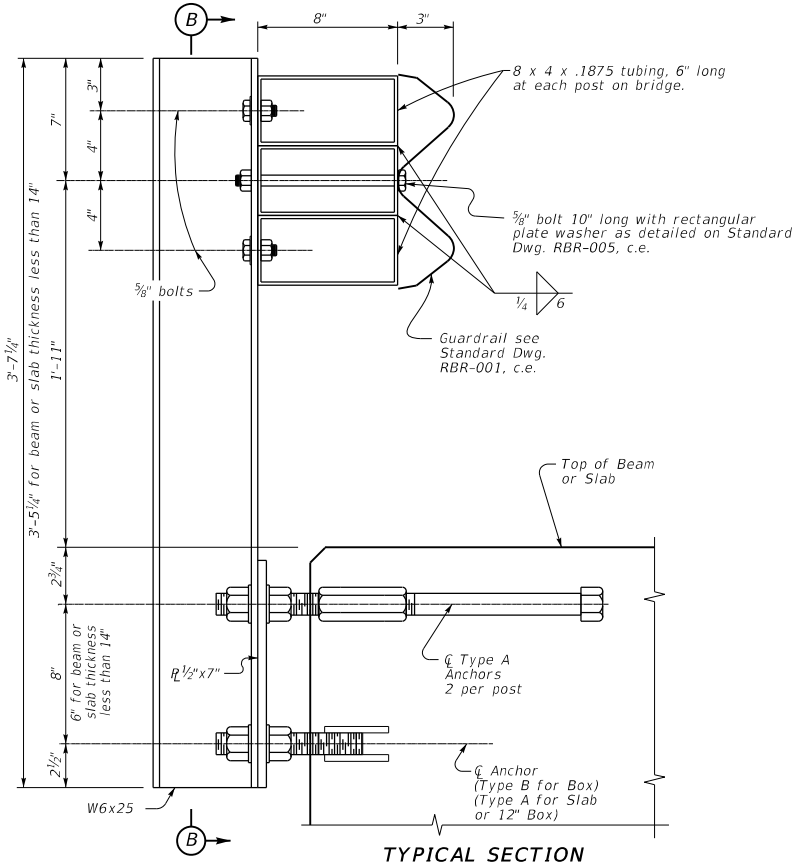
KENTUCKY
DEPARTMENT OF HIGHWAYS

BOX BEAM TENSION ROD DETAILS

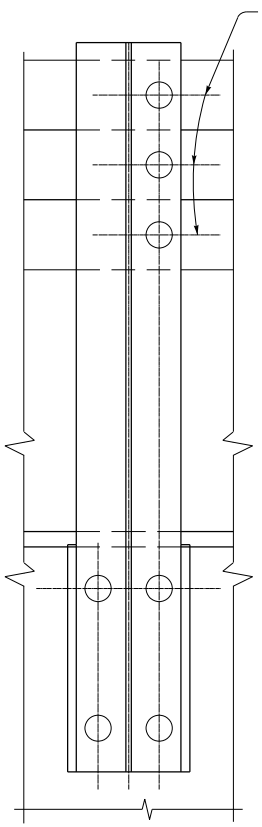
STANDARD DRAWING NO. BDP-004-04

SUBMITTED _____ 02-26-20
DIRECTOR DIVISION OF STRUCTURAL DESIGN — DATE

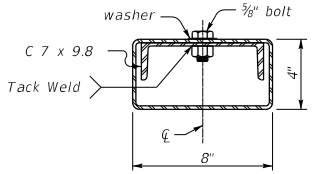
APPROVED _____ 02-26-20
STATE HIGHWAY ENGINEER — DATE



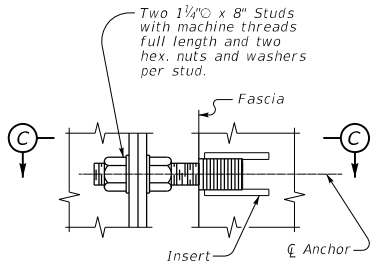
TYPICAL SECTION

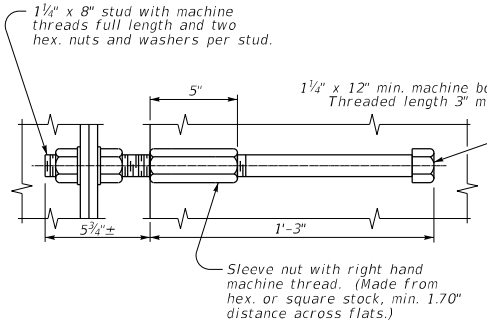


SECTION B-B

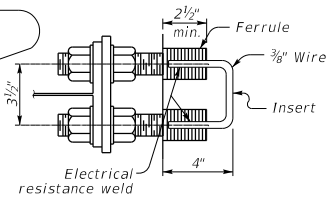


SECTION A-A



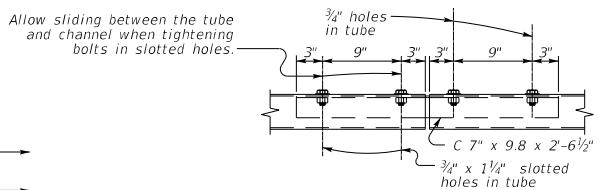


TYPE A ANCHOR DETAIL

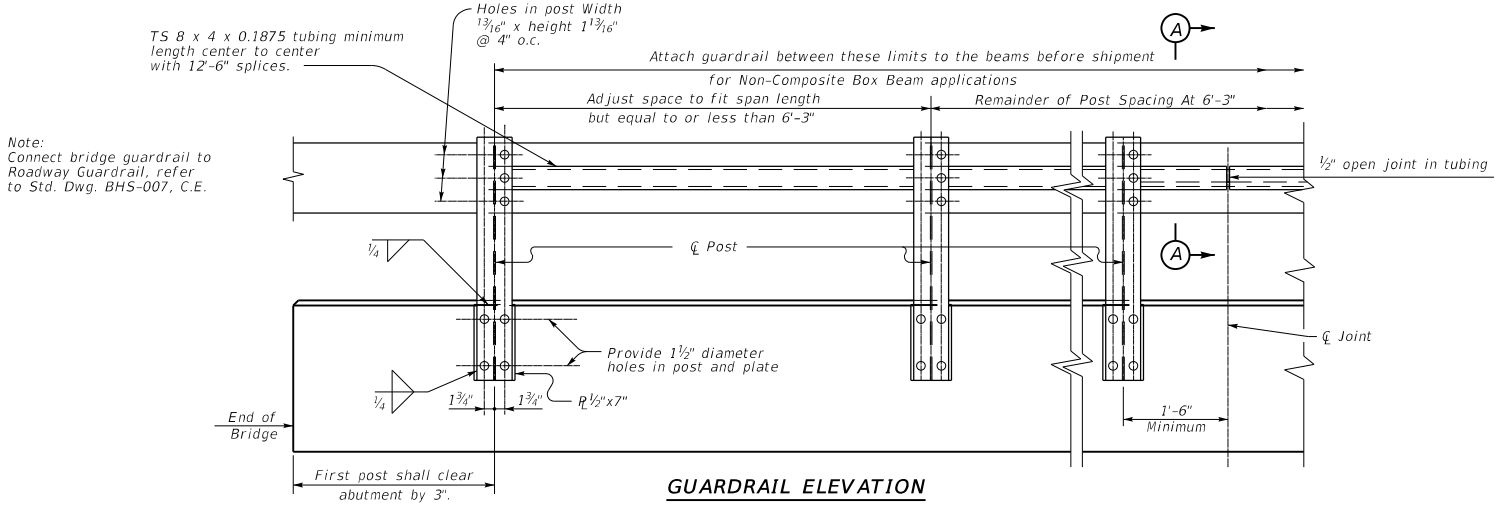


SECTION C-C

TYPE B ANCHOR DETAIL



OPEN JOINT



GUARDRAIL ELEVATION

Post Spacing

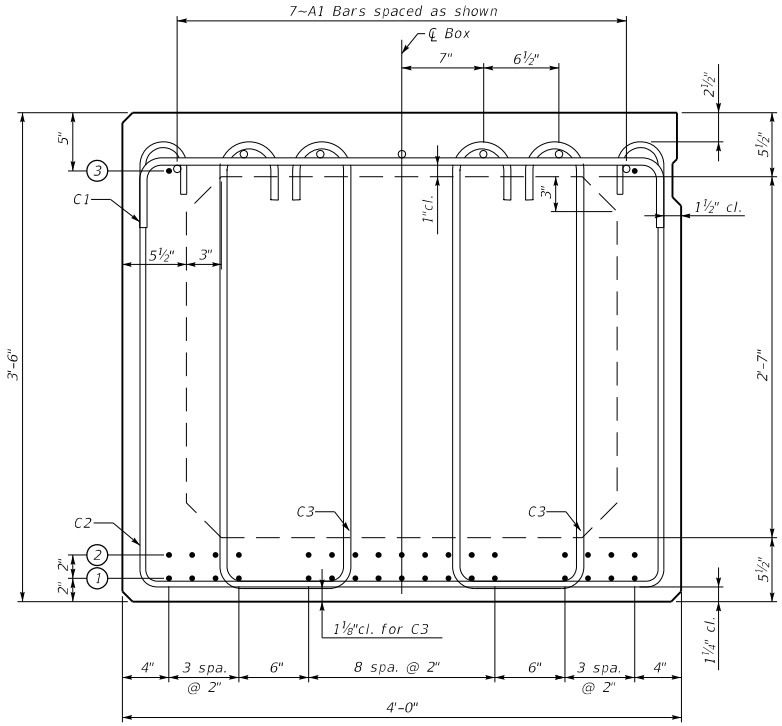
KENTUCKY
DEPARTMENT OF HIGHWAYS

RAILING SYSTEM TYPE II

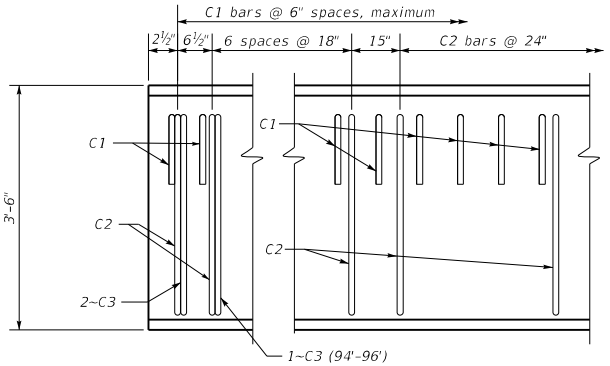
STANDARD DRAWING NO. BDP-005-06

SUBMITTED _____ DIRECTOR DIVISION OF STRUCTURAL DESIGN — 02-26-20 DATE

APPROVED _____ STATE HIGHWAY ENGINEER — 02-26-20 DATE



B42 BEAM



B42 ELEVATION OF O° SKEW

(Refer to BDP-003,c.e. for skewed details)

TABLE OF STRAND DATA

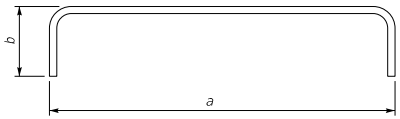
Beam Type	Beam Length (feet)	Number of Strands Required Row ①	Row ②	Row ③
B42	80	17	6	
	82	17	7	
	84	17	8	
	86	17	10	
	88	17	11	
	90	17	12	
	92	17	13	
	94	17	14	2
	96	17	15	2

BAR QUANTITIES TABLE

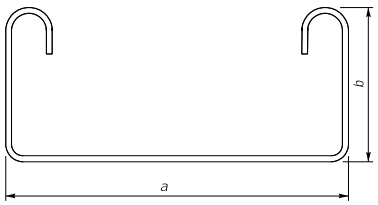
Beam Type	Beam Length (feet)	C1	C2	C3			
B42	80	161	46	4			
	82	165	47	4			
	84	169	48	4			
	86	173	49	4			
	88	177	50	4			
	90	181	51	4			
	92	185	52	4			
	94	189	53	6			
	96	193	54	6			

DESIGN DATA

Beam Type	Beam Length (feet)	DC kips	DW kips	LL kips	LL+I kips		
B42	80	38.5	2.3	55.5	68.6		
	82	39.5	2.3	56.1	69.2		
	84	40.4	2.4	56.6	69.8		
	86	41.4	2.4	57.1	70.3		
	88	42.4	2.5	57.6	70.9		
	90	43.3	2.6	58.1	71.4		
	92	44.3	2.6	58.6	72.0		
	94	45.3	2.7	59.1	72.5		
	96	46.2	2.7	59.6	73.0		



C1(e) Bar



C2(e)-C3(e) Bars

Bent Reinforcement

Mark	Size	a	b	
C1(e)	#5	3'-9"	6"	
C2(e)	#4	3'-9"	3'-2¼"	
C3(e)	#5	11⅜"	3'-2⅜"	

Straight Reinforcement

Mark	Size	Length
A1(E)	#5	Beam Length Minus 3"
D(E)	#8	2'-0"

NOTE: A1 bars are to be lapped 2'-2" when necessary.

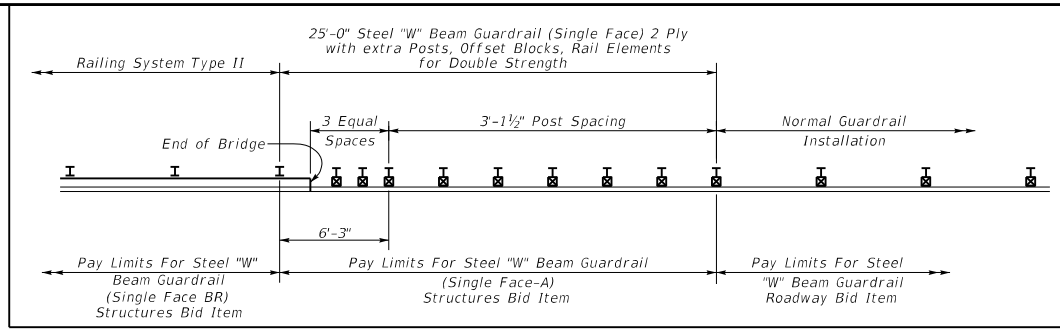
KENTUCKY
DEPARTMENT OF HIGHWAYS

BOX BEAM
B42
DETAILS

STANDARD DRAWING NO. BDP-011-04

SUBMITTED _____ 02-26-20
DIRECTOR DIVISION OF STRUCTURAL DESIGN — DATE

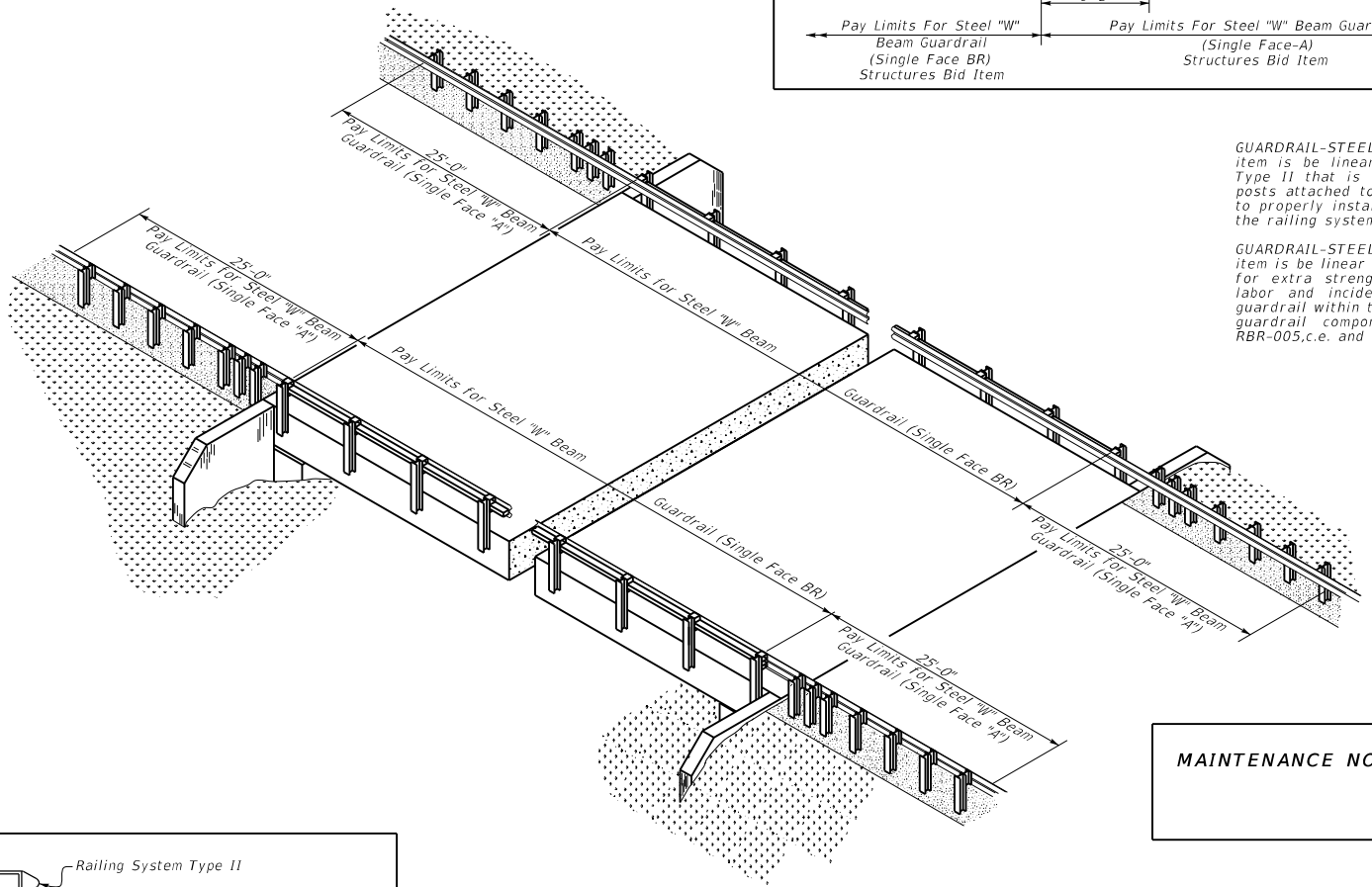
APPROVED _____ 02-26-20
STATE HIGHWAY ENGINEER — DATE



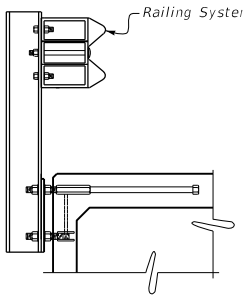
BID ITEM NOTES

GUARDRAIL-STEEL W BEAM (SINGLE FACE BR): The bid unit for this item is be linear feet. This item shall include the Railing System Type II that is to be installed on the bridge between the endmost posts attached to the bridge and all labor and incidentals necessary to properly install the railing system. For non-composite box beams, the railing system is attached to the beam prior to shipment.

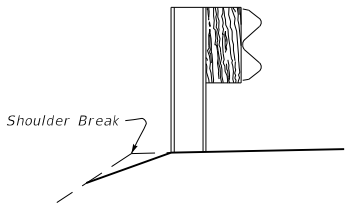
GUARDRAIL-STEEL W BEAM (SINGLE FACE A): The bid unit for this item is be linear feet. This item includes the W-Beam guardrail (2 ply for extra strength), guardrail posts, offset blocks, hardware, and labor and incidentals necessary to properly install the approach guardrail within the 25'-0" limits at each corner of the structure. For guardrail components, refer to Standard Drawings RBR-001,c.e., RBR-005,c.e. and RBR-015,c.e.



MAINTENANCE NOTES:



BRIDGE GUARDRAIL INSTALLATION



ROADWAY SHOULDER
G.R. INSTALLATION

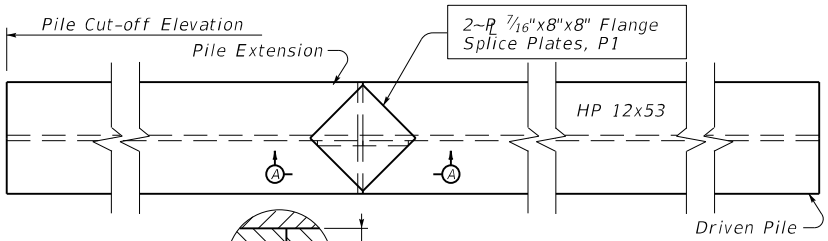
KENTUCKY
DEPARTMENT OF HIGHWAYS

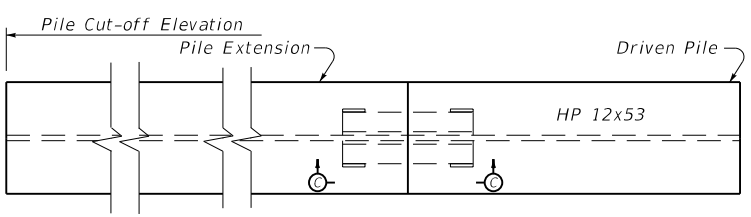
RAILING SYSTEM
TYPE II
GUARDRAIL TREATMENT

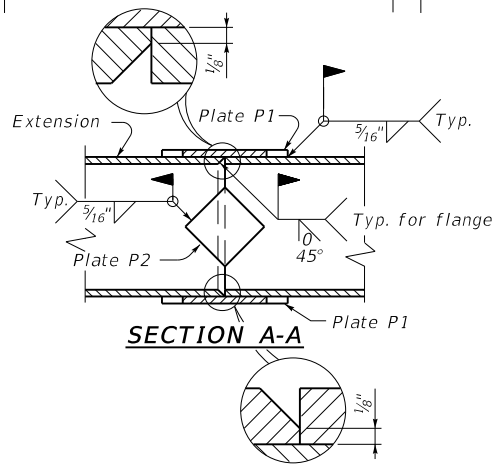
STANDARD DRAWING NO. BHS-007-08

SUBMITTED _____ 02-26-20
DIRECTOR DIVISION OF STRUCTURAL DESIGN — DATE

APPROVED _____ 02-26-20
STATE HIGHWAY ENGINEER — DATE

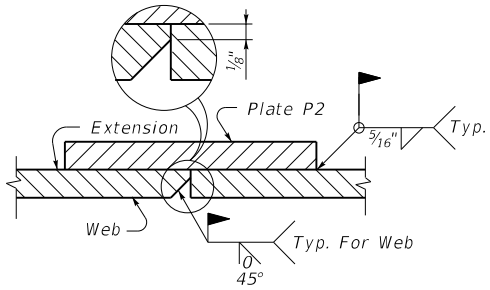




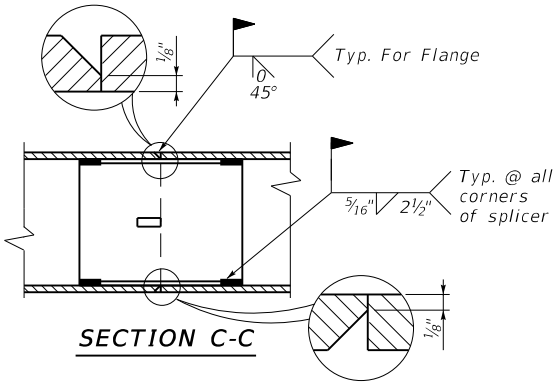


SECTION A-A

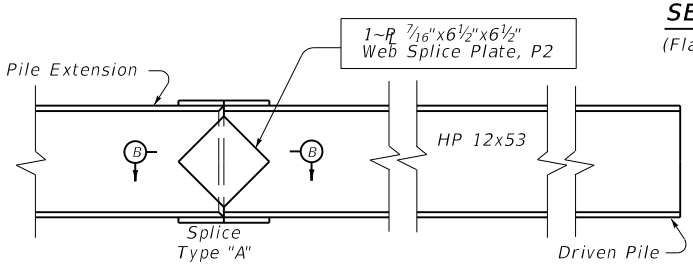
NOTE:
Bevel flanges and web of pile extension on 1:1 bevel as shown and employ conventional butt weld.

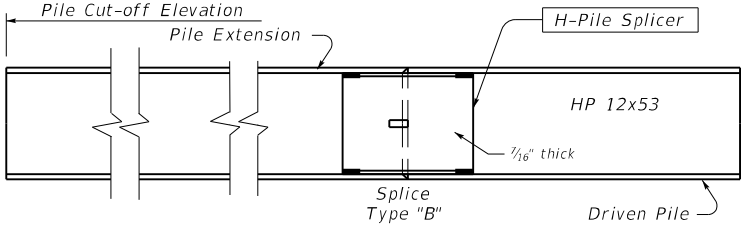


SECTION B-B
(Flange Not Shown)



SECTION C-C





GENERAL NOTES

SPECIFICATIONS: *Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, current edition.*

MATERIALS: *Ensure structural steel piles conform to A.S.T.M. A709 Grade 50, current Specifications.*

SPLICE PLATES: *Ensure all pile splicing options conform to A.S.T.M. A709 Grade 50, current Specifications. In lieu of Splice Option "A" or Splice option "B", splice plates may be flame cut from HP12x53 sections. If flange sections are used, the portion cut at the web must be turned outside in order to obtain a tight fit. Grind the edges smooth prior to welding.*

SPLICE OPTION "B": *The pile splicer shown in the details for Splice Option "B" may be Champion H-Pile Splicer, Model HP 30000, or an approved equal. Ensure the splicer is in accordance to the manufacturer's recommendations and subject to the Engineer's approval.*

FIELD WELDS: *Ensure field welding material and workmanship for all piling conforms to the current Joint Specifications ANSI/AASHTO/AWS D1.5 Bridge Welding Code. Splice piles as indicated above only when driven below cut-off elevation.*

PAYMENT: *Payment for the piles in accordance with plans and specifications will be made at the contract price per linear foot.*

PAINT: *No painting is required on steel piles.*

MILL TEST REPORTS: *Furnish mill test reports in triplicate to the Department showing that all materials furnished conform to the Specifications.*

KENTUCKY
DEPARTMENT OF HIGHWAYS

HP12x53
Steel Pile

STANDARD DRAWING NO. *BPS-003-09*

SUBMITTED _____ 02-26-20
DIRECTOR DIVISION OF STRUCTURAL DESIGN — DATE

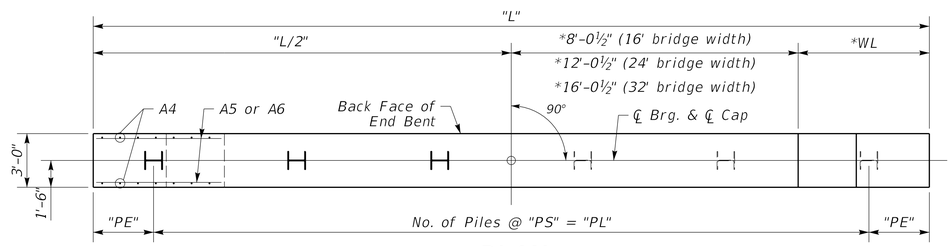
APPROVED _____ 02-26-20
STATE HIGHWAY ENGINEER — DATE

SUPERSTRUCTURE HEIGHT SDH = Beam+Pad Height +(haunch+slab) [if applicable]		CAP BILL OF REINFORCEMENT 24'-0" BRIDGE WIDTH					WING BILL OF REINFORCEMENT				
		MARK	TYPE	NO.	SIZE	LENGTH	MARK	TYPE	NO.	SIZE	LENGTH
H1	12" ≤SDH≤27"	A1e	14s	28	5	11- 0	A4e	Str.	12	5	4- 0
		A2e	Str.	9	8	30- 9	A5e	Str.	8	5	3- 2
		A3e	Str.	4	5	30- 9	A6e	Str.	4	6	3- 2
H2	27" <SDH≤35"	A1e	14s	26	5	11- 0	A4e	Str.	20	5	4- 8
		A2e	Str.	9	8	33- 5	A5e	Str.	12	5	4- 6
		A3e	Str.	4	5	33- 5	A6e	Str.	4	6	4- 6
H3	35" <SDH≤50"	A1e	14s	33	5	11- 0	A4e	Str.	28	5	5-11
		A2e	Str.	9	8	38- 5	A5e	Str.	16	5	7- 0
		A3e	Str.	4	5	38- 5	A6e	Str.	4	6	7- 5

BRIDGE WIDTH	PILE LOAD		PILES				DIMENSIONS												QUANTITIES	
	SIZE	TONS	NO.	PE	PS	PL	A	B	C	D	E	F	G	H	J	L	WL	WU	WV	WX	CONCRETE (C.Y.)	STEEL (LBS.)
24	H1	79	5	3'-6½"	6'-0"	24'-0"	3½"	4	9"	2'-3"	5	4'-0"	3	2'-0"	2	31'-1"	3'-6"	3'-6"	0	0	12.4	1284
	H2	83	6	2'-10½"	5'-7"	28'-0"	2½"	3	10"	1'-8"	4	3'-7"	5	4'-0"	3	33'-9"	4'-10"	4'-10"	0	0	14.8	1422
	H3	102	6	3'-4½"	6'-5"	32'-0"	4½"	4	8"	2'-0"	5	4'-5"	7	6'-0"	4	38'-9"	7'-4"	3'-3"	4'-1"	2'-1"	19.4	1799

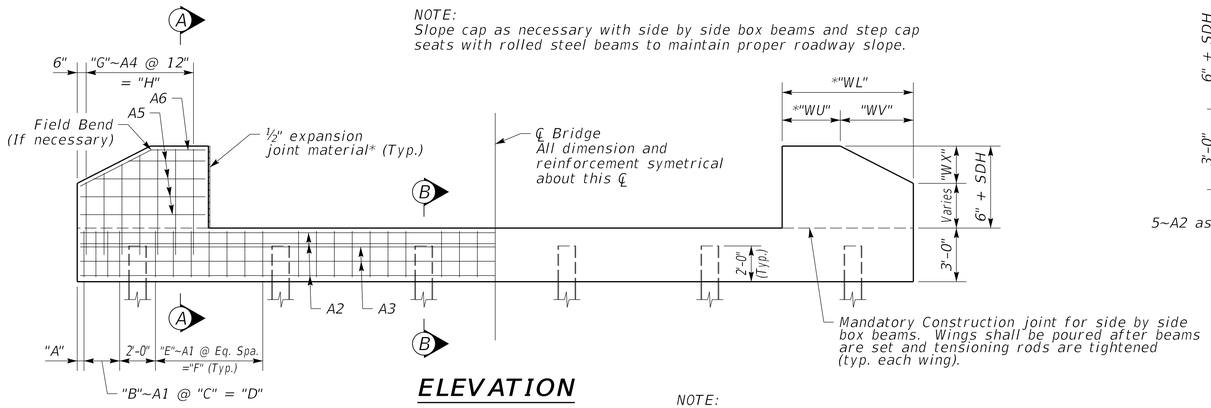
NOTES:
1) Conform to KYTC, Standard Specifications, Current Edition.
2) Concrete to be Class "A", 3500 psi.
3) Rebar to be epoxy coated A615, Grade 60.
4) Maintain 2" clear cover to reinforcement unless otherwise noted.
5) End Bents are designed for the maximum span of the following steel and concrete beams as shown in the current standards:
   H1 – B12, CB12, B17, CB17, B21 or rolled steel beams up to 16" nominal depth.
   H2 – CB21, B27, CB27, B33 or rolled steel beams up to 24" nominal depth.
   H3 – CB33, B42, CB42 or rolled steel beams up to 36" nominal depth.
6) Piles may be HP12x53 or 16" Steel Pipes with ½" wall thickness.
7) Piles driven to rock must be driven to Refusal. Friction Piles must be driven to (Pile Load/0.4) using the Gates Method.
8) Pile load given is Factored Strength Load.
9) Piles must be driven a minimum of 20' into existing ground or to refusal on bedrock. Piles at wet crossings must be driven to 20' below stream bed or to refusal on bedrock. A minimum pile length of 30' is required in all circumstances.
10) Contractor shall provide a hammer capable of driving the piling to refusal or capacity without encountering excessive blow counts or damaging the pile. Contractor shall be responsible for all damaged piling.

*Adjust 9" as necessary for rolled beam superstructure



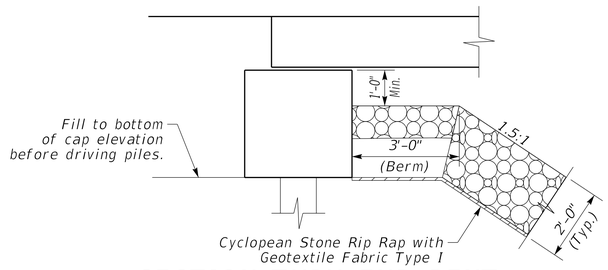
PLAN

NOTE:
Slope cap as necessary with side by side box beams and step cap seats with rolled steel beams to maintain proper roadway slope.



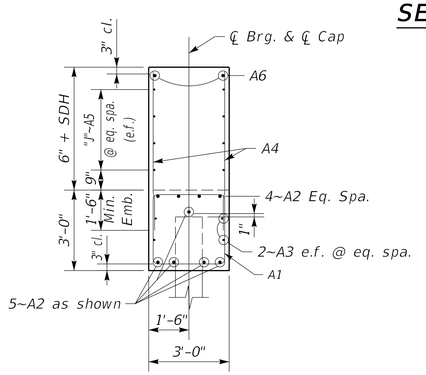
ELEVATION

NOTE:
Trim A4-A6 bars as necessary.

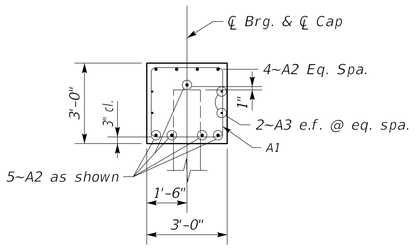


SECTION THRU END BENT

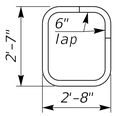
(Showing berm and fill slope)



SECTION A-A



SECTION B-B



A1 Bar

~Size #5~

*Expansion Joint Material:
AASHTO M153
Type-I Sponge Rubber
Type-II Cork permitted with contractor provided documentation that the Build America Buy America requirments are satisfied.

SUBMITTED _____ 10/25/2024
DIVISION DIRECTOR DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TEAM KENTUCKY TRANSPORTATION CABINET

MODIFIED PILE END BENT 0° SKEW

ITEM NO. COUNTY OF
SHEET NO.

Furches Trl, Calloway County (018C00051N) Bid Sheet

Items	Units	Quantity	Price per Unit	Total Cost
B42 Box Beams	LNFT	492		
H-Piles	LNFT	360		
Epoxy Coated Rebar	LBS	3598		
Class A Concrete	CUYD	38.8		
Geotextile Fabric	SQYD	182.2		
Rip Rap	Tons	240.6		
Structural Backfill	CUYD	65		
Perforated Pipe - 4"	LNFT	94.2		
Milling	Day	1		
Base	Tons	10.2		
Surface	Tons	64.9		
Waterproof Membrane	SQYD	218.7		
Type II Rail	LNFT	164		
Guardrail (Single Face A)	LNFT	100		
Offset Blocks	EACH	36		
Guardrail Posts	EACH	36		
Mob/Demob	EACH	1		
			Total Cost	