COUNTY OF	ITEM NO.	SHEET NO.
CRITTENDEN	1-1159	R1

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

CRITTENDEN COUNTY
COTTON PATCH RIDGE RD. OVER HUGHES BRANCH
STA. 10+56.41

0′ 300′ 600′ 1200′

LOCATION MAP

BEFORE YOU DIG

The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

EX. BRIDGE ID # 028C00053N

STANDARD DRAWINGS

BGX-006-10	Stencils for Structures
BJE-001-13	Neoprene Expansion Dams and Armored Edges
BDP-002-03	Box Beam Bearing Details
BDP-003-03	Box Beam Miscellaneous Details
BDP-008-04	Box Beam B21 and C21 Details
BPS-003-09	HP12x53 Steel Pile
RBR-005-11	Guardrail Components
RBR-010-06	Guardrail Terminal Sections
RBR-016-05	Timber Guardrail Posts
RDI-040-01	Erosion Control Blanket Slope Installation
RDX-210-03	Temporary Silt Fence
RDX-220-05	Silt Trap Type A
RDX-225-01	Silt Trap Type B
RDX-230-01	Silt Trap Type C
RGX-001-06	Miscellaneous Standards
RGX-200-01	One Point Proctor Family of Curves

ACTIVE SEPIAS

SEPIA 009	Treatment of Embankments at End Bents
SEPIA 010	Treatment of Embankments at End Bents-Details
SEPIA 024	Typical Guardrail Installations
SEPIA 027	Steel Beam Guardrail "W" Beam
SEPIA 028	Steel Guardrail Posts
SEPIA 031	Guardrail End Treatment Type 7 Alternate Anchor
SEPIA 032	Delineators for Guardrail
SEPIA 034	Guardrail End Treatment Type 7
SEPIA 035	Railing System Type II Guardrail Treatment
SEPIA 047	Box Beam General Notes and References
SEPIA 048	Box Beam Tension Rod Details
SEPIA 051	Railing System Type II

DESIGN CRITERIA

CLASS OF HIGHWAY: LOCAL RURAL
TYPE OF TERRAIN: ROLLING
DESIGN SPEED:
REQUIRED NPSD:
REQUIRED PSD:
LEVEL OF SERVICE:
ADT PRESENT (2006): 22
ADT FUTURE ( ):
DHV:
D %:
T %:

GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 26 MINUTES 53 SECONDS NORTH
LONGITUDE 88 DEGREES 03 MINUTES 29 SECONDS WEST

DESIGNED

% RESTRICTED SD:
LEVEL OF SERVICE:
MAX. DISTANCE W/O PASSING:

REV. NO.	SHEETS REVISED	DATE

TABLE OF REVISIONS

PREPARED BY
Stantec

BRIDGING KENTUCKY
Restore | Renew | Replace

INDEX OF SHEETS

SPECIAL NOTES

Placing Bridge Overlay Approach Pavement
Traffic Control for Bridge Repair Contracts
Foundation Preparation
Erosion Prevention and Sediment Control
Contract Completion Date and Liquidated Damages
Tree Clearing Restrictions
Concrete Coating
Additional Environmental Commitments
Structures with Over the Side Drainage
Environmental BMP
Bridging Kentucky Project Stencil

SPECIAL PROVISIONS

69 Embankment at Bridge End Bent Structures

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

2017 AASHTO LRFD Bridge Design Specifications with Current Interims.

REVISION	DATE

STATE OF KENTUCKY ** PROFESSIONAL ENGINEER ** JOHN S. MOSS 17060 LICENSED

ROADWAY R1-R4

John S. Moss — Digitally signed by John S. Moss Date: 2020.04.10 07:55:37 -04'00'

STATE OF KENTUCKY ** PROFESSIONAL ENGINEER ** ROBERT MASSARO 34742 LICENSED

STRUCTURES S1-S6

Robert Massaro — Digitally signed by Robert Massaro Date: 2020.04.10 10:54:47 -04'00'

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF

CRITTENDEN

ITEM NO. 1-1159.00
DRAWING NO. 28111
PROJECT NUMBER:
LETTING DATE: June 20, 2020

RECOMMENDED BY: _____ PROJECT MANAGER DATE:

PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

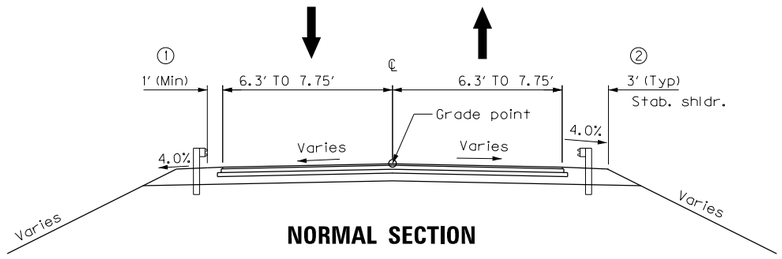
COUNTY OF	ITEM NO.	SHEET NO.
CRITTENDEN	1-1159	R2

CONVENTIONAL SIGNS

SURVEY LINE
GRADE LINE — 400' V.C.
GROUND LINE
COUNTY LINE
CORPORATE LIMITS
EXIST. PROPERTY LINE
EXIST. RIGHT OF WAY & PROPERTY LINE
PROPOSED RIGHT OF WAY
RIGHT OF WAY MONUMENT
BENCH MARK — B.M. NO.4
EXISTING R/W MARKER
RIGHT OF WAY MONUMENT EXISTING/PROPOSED
UTILITY TEST HOLE — TH
EXISTING ROAD
RAILROAD
FENCE (CONTROLLED ACCESS)
FENCE (EXCEPT STONE AND HEDGE)
TREE LINE
TREES
PIPE CULVERT
CULVERT
BRIDGE
BUILDINGS — 1-S FRAME, 1-S BRICK, SHED, 2-S BRICK
GUARDRAIL — END TREATMENT, GUARDRAIL, TERMINAL SECTION

	EXISTING	PROPOSED
LIGHTING POLE		
POWER POLE		
JOINT POWER & TELEPHONE POLE		
TELEPHONE & TELEGRAPH POLE		
ANCHOR, POWER OR TELEPHONE		
STUB POWER		
STUB TELEPHONE		
WATER MAIN	WM	6" WM
GAS MAIN	GM	6" GM
TELEPHONE DUCT	T	T
ELECTRIC DUCT	E	E
DIRECT BURIAL TV CABLE	TV	TV
SANITARY SEWER (WITH MANHOLE)	SAN	SAN
STORM SEWER (WITH MANHOLE)	STORM	STORM
DIRECT BURIAL ELECTRIC CABLE	E	E
DIRECT BURIAL TELEPHONE CABLE	T	T
OVERHEAD WIRE		
TRAFFIC LIGHTS		
ELECTRIC MANHOLE	EMH	EMH
TELEPHONE MANHOLE	TMH	TMH

STONE FENCE
HEDGE FENCE
SWAMP OR MARSH
SPRINGS
SINKHOLE
QUARRY SITE
BLUE LINE STREAM
INTERMITTENT STREAM OR DITCH
LAKES OR PONDS
REGULATED FLOODWAY
NORTH POINT



NORMAL SECTION
COTTON PATCH RIDGE ROAD

NOTES:

① MATERIAL NEEDED FOR SHOULDERS OUTSIDE OF PAVED AREA WILL BE MEASURED AND PAID AS GRANULAR EMBANKMENT IN ACCORDANCE WITH THE SPECIAL NOTE FOR PLACING BRIDGE OVERLAY APPROACH PAVEMENT.

② WIDTH VARIES AND THE LOCATION TO BE DETERMINED BY THE FIELD ENGINEER

BRIDGE TYPICAL SECTION IS SHOWN ON STRUCTURE PLANS

COTTON PATCH ROAD
WESTON, CRITTENDEN COUNTY
Bridge ID # 028C00053N

Project Coordinates:
Coordinates for the horizontal control were obtained by static observations of 1 hour for CP1 & CP2 using Champion Pro GNSS receivers. The static data was collected on 10/09/2018 and processed on 10/11/2018 with OPUS Solutions. The projection is NAD83(2011) Kentucky State Plane Coordinates, KY Single Zone, US Survey feet. No project datum factor was calculated or used for this project.

Basis of Elevations:
Elevations were established by static observations of 1 hour for CP1 & CP2 and 2 hours for CP3 using a Champion Pro GNSS receivers. The static data was processed with OPUS Solutions using NAVD88 datum, GEOID12B. The elevation of CP1 was held.

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 1	MAG NAIL IN ROCK LEDGE	3694965.556	4251381.737	366.02	11+15.97 N. LEG	18.05' RT.
CP 2	5/8" REBAR & CAP	3695001.094	4251090.817	359.76	OUTSIDE OF ALIGNMENT LIMITS	

CENTERLINE COORDINATE DATA

POINT	State Plane Coordinates		STATION	OFFSET
	NORTH (Y)	EAST (X)		
POB	3694987.989	4251156.978	9+00.00	0.00
PI	3694984.437	4251256.918	10+00.00	0.00
PI	3694981.317	4251285.160	10+28.41	0.00
PI	3694967.460	4251360.924	11+05.43	0.00
POE N LEG	3695054.595	4251423.063	12+12.46	0.00
PI S LEG	3694923.566	4251369.844	11+50.22	0.00
POE S LEG	3694873.787	4251370.143	12+00.00	0.00

RIGHT OF WAY SUMMARY

PARCEL NO.	OWNER(S)	TOTAL AREA OF TRACT		PERMANENT R/W ACQUIRED		EASEMENTS		PORTION REMAINING		SEWER SYSTEM TYPE	SEWER SYSTEM AFFECTED BY PROJECT		BUILDINGS ACQUIRED NUMBER				SOURCE OF TITLE	REMARKS
						PERMANENT	TEMPORARY											
		ACRES	SQ. FT.	ACRES	SQ. FT.	SQ. FT.	SQ. FT.	ACRES	SQ. FT.		YES	NO	C	R	F	S		
P1	FREEMAN YODER	64.338		0.010				64.328				5					DB 239 P 626	TOTAL AREA OF TRACT FROM DEED
P2	JOHN YODER	84.539		0.019				84.520				5					DB 239 P 742	TOTAL AREA OF TRACT FROM DEED

TYPE SEWER SYSTEM
5. NOT APPLICABLE

SCALE: AS NOTED

PREPARED BY Stantec

BRIDGING KENTUCKY — Restore | Renew | Replace

TYP. SECTION, COORD.CONTROL, LEGEND
COTTON PATCH RIDGE ROAD OVER
HUGHES BRANCH

FILE NAME: ...\d0143435\IP_028C00053N_R2.dgn
USER: JoMoss
DATE PLOTTED: 4/10/2020 2:27:35 AM
E-SHEET NAME:
MicroStation v8.11.7.443

COUNTY OF	ITEM NO.	SHEET NO.
CRITTENDEN	1-1159	R3

ENVIRONMENTALLY-CLEARED AREA					
PT.	NORTHING	EASTING	PT.	NORTHING	EASTING
E1	3694750.7392	4251110.4726	E13	3695146.9178	4251347.5860
E2	3694812.2882	4251109.9627	E14	3695075.1678	4251327.5740
E3	3694873.0948	4251061.2534	E15	3695065.3515	4251368.4715
E4	3694874.1364	4251045.6284	E16	3695020.8728	4251439.7130
E5	3694948.3552	4251040.6804	E17	3694896.3617	4251408.4680
E6	3694955.1607	4250980.0034	E18	3694884.8907	4251380.6359
E7	3694976.8274	4250876.1145	E19	3694892.3597	4251331.0437
E8	3695020.7163	4250881.6700	E20	3694917.6732	4251307.8194
E9	3695042.3830	4251064.4478	E21	3694919.6515	4251277.3514
E10	3695083.1642	4251090.1162	E22	3694750.8348	4251240.9644
E11	3695081.6017	4251100.0120			
E12	3695146.8221	4251123.5235			

STA. 10+55 REMOVE EXISTING BRIDGE

STA. 10+87 LT. to STA. 11+18 RT. CONSTRUCT 41 LIN FT of 18" PIPE

BEGIN CONST.
STA. 9+52.03
N = 3694986.141
E = 4251208.974

END CONST.
STA. 11+86.67
N. LEG
N = 3695033.602
E = 4251408.091

POE 12+12.46
N. LEG

TO BE RELOCATED (BY OTHERS)

FREEMAN YODER
P/1

JOHN YODER
P/2

CP1
CP2

COTTON PATCH RIDGE ROAD

WESTON ROAD (KY 654)

HUGHES BRANCH

EX R/W

ENVIRONMENTALLY-CLEARED AREA

PROP. R/W

REMOVE 18" PIPE

INV. = 359.16

INV. = 364.76

I. E. = 358.42

O.E. = 357.55

POB 9+00.00

PI 10+00.00

PI 10+28.41

PI 11+05.43

PI 11+50.22

POE 12+00.00

S87°57'52"E

S83°41'49"E

S79°38'06"E

N35°29'38"E

S11°29'12"E

S00°20'40"E

9+00

10+00

11+00

12+00

PROPOSED RIGHT-OF-WAY CALLS

(A) *S 78°04'41" E ~ 34.04'*

(B) *N 80°49'35" W ~ 40.59'*

EXISTING RIGHT-OF-WAY CALLS

(a) N 19°02'45" E ~ 15.69'
(b) S 48°06'12" W ~ 18.91'
(c) N 78°46'43" W ~ 24.83'
(d) S 79°36'22" E ~ 23.99'
(e) S 16°47'34" E ~ 28.08'
(f) N 18°40'11" E ~ 26.12'

Notes:

1. All material that was placed or had fallen into the creek shall be removed by the Contractor at the end of the project and the creek shall be restored to its preconstruction condition.
2. Reasonable means of ingress and egress shall be maintained to all properties within project limits.
3. All existing right-of-way is part of the Environmentally-Cleared Area.

GUARDRAIL STEEL "W" BEAM COTTON PATCH RIDGE ROAD ℄						
SIDE	STA.	TO	STA.	• SINGLE FACE - A (LF)	SINGLE FACE (LF)	END TREATMENT TYPE 7 (EACH)
LT	9+55	-	10+29	25	-	1
RT	9+52	-	10+27	25	-	1
LT	10+84	-	11+87 N. LEG	25	12.5	1
RT	10+84	-	11+78 S. LEG	25	-	1

•CONNECT TO RAIL SYSTEM TYPE II AT EACH BRIDGE END

SCALE: 1"=40'

0' 20' 40' 80'

PREPARED BY Stantec

BRIDGING KENTUCKY Restore | Renew | Replace

PLAN
COTTON PATCH RIDGE ROAD
OVER HUGHES BRANCH

COUNTY OF	ITEM NO.	SHEET NO.
CRITTENDEN	1-1159	R4

SCALE: 1" = 40' HORIZONTAL
1" = 4' VERTICAL

DATUM

382
380
378
376
374
372
370
368
366
364
362
360
358
356
354
352
350

PVI 10+00.04
Elev 359.29

PVI 10+85.00
Elev 361.62

PVI 11+05.43
Elev 363.76

PVI 11+34.50
Elev 367.70

PVI 11+40.00
Elev 367.38

STA. 10+56.41 CONST. SINGLE-SPAN
CB 21'X4B' BOX BEAM BRIDGE AT 10° SKEW

2.74%

3.55% S. LEG

10.48% N. LEG

Existing Low Beam Elev. = 358.12
Proposed Low Beam Elev. = 357.64

Existing Hydraulic Opening = 296 SQ FT
Proposed Hydraulic Opening = 425 SQ FT

359.3
359.8
359.84
360.4
360.39
360.9
360.94
361.7
361.48
363.9
363.19
365.4 N. LEG
365.9 S. LEG
365.29 N. LEG
365.73 S. LEG
367.4 N. LEG
367.38 N. LEG

9+40 9+60 9+80 10+00 10+20 10+40 10+60 10+80 11+00 11+20 11+40 11+60 11+80

BRIDGE REMOVAL NOTE

The existing single span 15' x 38' bridge shall be removed in accordance with the current Specifications. All material in the existing bridge shall remain the property of the Contractor and shall be disposed of in accordance with the current Specifications. Lump sum payment in full shall include the complete removal of the bridge, abutments, and appurtenances.

PREPARED BY
Stantec

BRIDGING KENTUCKY
Restore | Renew | Replace

PROFILE SHEET
COTTON PATCH RIDGE ROAD OVER
HUGHES BRANCH

General Notes

Specifications: References to the specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction including any current supplemental specifications. All references to the AASHTO specifications are to the AASHTO LRFD Bridge Design Specifications, 8th edition with interims.

Design Load: This bridge is designed for KYHL-93 live load, (i.e. 1.25xAASHTO HL93 live load). This bridge is designed for a future wearing surface of 15 psf.

Design Method: All reinforced concrete members are designed to be equivalent or greater than the load and resistance factor design method as specified in the current AASHTO Specifications.

Materials Design Specifications:

For Class "A" Reinforced Concrete	f'c = 3500 psi
For Class "AA" Reinforced Concrete	f'c = 4000 psi
For Steel Reinforcement	fy = 60000 psi

Material Specifications: AASHTO Specifications or ASTM, current edition, as designated below shall govern the materials furnished.

AASHTO M153	Premolded Cork Filler, Type II
AASHTO M-31	Deformed and Plain Billet-Steel for Concrete Reinforcement, Grade 60

Preformed Cork Expansion Joint Material: Preformed Cork Expansion Joint Material shall conform to subsection 807.04.02 (Type II) of the Kentucky Department of Highways Standard Specifications.

Concrete: Class "AA" Concrete is to be used throughout the superstructure and in the portions of the substructure above the tops of caps. Class "A" concrete is to be used in the substructure below the caps. Prestressed beam concrete shall be in accordance with the plans and specifications.

Reinforcement: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Any reinforcing bars designated by suffix "e" in the plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix "s" in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

Construction Identification: The names of the Prime Contractor and the Sub-Contractor shall be imprinted in the concrete with 1 inch letters at a location designated by the engineer. The contractor shall furnish all plans, equipment and labor necessary to do the work for which no direct payment will be made.

Beveled Edges: All exposed edges shall be beveled ¾", unless otherwise shown.

Payment for Precast Concrete Beams: The basis of payment for the Prestressed Concrete Beams shall be at the contract unit price per linear foot of beam, in accordance with the specifications.

Slope Protection: Slope Protection at abutments shall be dry cyclopean stone riprap in accordance with the plans and specifications. Geotextile Fabric, Class I shall be placed between the embankment and the slope protection in accordance with Standard Specifications 214 and 843. Payment for Geotextile Fabric, Class I, shall be considered incidental to the unit price bid for Dry Cyclopean Stone Riprap.

Completion of the Structure: The contractor is required to complete the structure in accordance with the plans and specifications. Material, labor, or construction operations not otherwise specified, are to be included in the bid item most appropriate to the work involved. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

Shop Drawings: The fabricator shall submit all required shop plans, by email to SHOP_028C00053 N@docs.e-Builder.net, for review. These submissions shall depict the shop plans in .PDF format, as either 11"x17" or 22"x36" sheets. Designers will make review comments on these electronic submissions as needed and, if required, shall return them to the fabricator for corrections and resubmittal. Upon acceptable reconciliation of all comments, files shall be sent to the Bridging Kentucky Shop Plan Coordinator for distribution. Only plans submitted directly to the Shop Plan Coordinator will be distributed. Additionally, only plans electronically stamped "Distributed by The Bridging Kentucky Program Team" are to be used for fabrication. While this process does not require the submission of paper copies, the Engineer of Record reserves the right to require such copies on a case by case basis.
When any changes to the design plans are proposed, the shop drawings reflecting these changes shall be submitted through the process above.

Utilities: The contractor shall be responsible for locating any and all existing utilities prior to excavation of material or installation of guardrail or other construction activities that may involve utilities (overhead or underground).

Verifying Field Conditions: The contractor shall field verify all dimensions before ordering material. New material that is unsuitable because of variations in the existing structure shall be replaced at the contractor's expense.

Dimensions: Dimensions are for a normal temperature of 60 degrees fahrenheit. Layout dimensions are horizontal dimensions.

Superstructure Slab: The superstructure slab shall be poured continuously from end to end of slab before the concrete is allowed to set.

Mastic Tape: Mastic Tape used to seal joints is to meet the requirements of ASTM C-877 Type I, II, or III. The joint is to be covered with 12" wide mastic tape. Prior to application, the joint surface shall be clean and free of dirt, debris, or deleterious material. Primer, if required by the tape manufacturer, shall be applied for a minimum width of 9" on each side of the joint.

Mastic Tape shall be either:

EZ-Wrap Rubber by Press-seal Casket Corporation,
Seal Wrap by Mar Mac Manufacturing Co. Inc.,
Cadilloc by The UP Rubber Co. Inc.
or approved equal.

Mastic Tape shall cover the joint continuously unless otherwise shown in the plans. Mastic Tape shall be spliced by taping a minimum of 6" and in accordance with the manufacturer's recommendations with the overlap running downhill.

The cost of labor, materials, and incidental items for furnishing and installing Mastic Tape shall be considered incidental to the unit price bid for concrete class 'AA' and no separate measurement of payment shall be made.

Temporary Supports: Temporary Supports or shoring will not be permitted under the beams when pouring the concrete deck slab or when taking "top of beam" elevations.

Armored Edge: Fabricate armored edge to match cross slope and parabolic crown at each end of bridge.

Foundation Preparation: Foundation Preparation shall be in accordance with Section 603 of the Specifications.

Foundation excavations should be properly braced/shored to provide adequate safety to persons working in or around excavations. Bracing should be performed in accordance with applicable federal, state and local guidelines.

Temporary shoring, sheeting,cofferdams, and/or dewatering methods may be required to facilitate foundation construction. It should be anticipated that groundwater will be encountered at foundation locations within the flood plain.

Temporary shoring, bracing, sheeting, cofferdams and dewatering shall be included in the Lump Sum Bid for Foundation Preparation.

Structural Granular Backfill: Materials for Structural Granular Backfill shall be in accordance with Section 805 of the Specifications.

Contrary to the Specifications, Structural Granular Backfill will not be measured for payment but shall be included in the Lump Sum Bid for Foundation Preparation.

Concrete Sealer: Apply concrete sealer in accordance with the Special Note for Concrete Sealing.

Piling: Piling shall be driven to practical refusal as defined on the pile record sheet.

Test piles shall be driven where designated on the plans to determine the length of pile required.

All test piles shall be accurately located so that they may be used in the finished structure.

Contrary to the standard drawings for steel piling, mill test reports are not required to be notarized.

Pile Points: Provide pile points for all piles. Pile points shall be in accordance with Section 604 of the specifications and of the type shown on the pile record sheet.

REVISION	DATE

DATE: March 5, 2020	CHECKED BY
DESIGNED BY: R. Massaro	A. Olusegun
DETAILED BY: S. Parsons	A. Olusegun

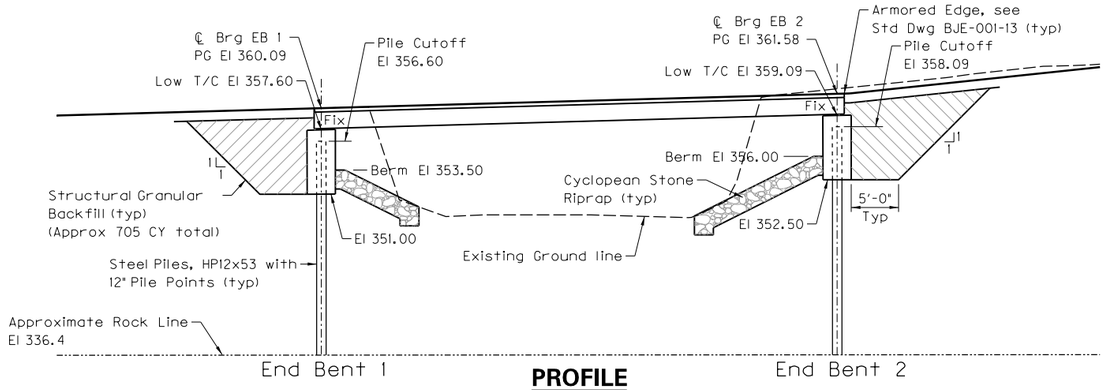
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CRITTENDEN

ROUTE	CROSSING
CP RD.	HUGHES BRANCH

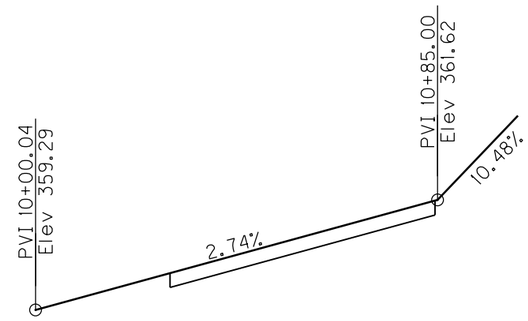
GENERAL NOTES

ITEM NUMBER	PREPARED BY	SHEET NO.
1-1159	Stantec / Bridging Kentucky	S1
		DRAWING NO. 28111

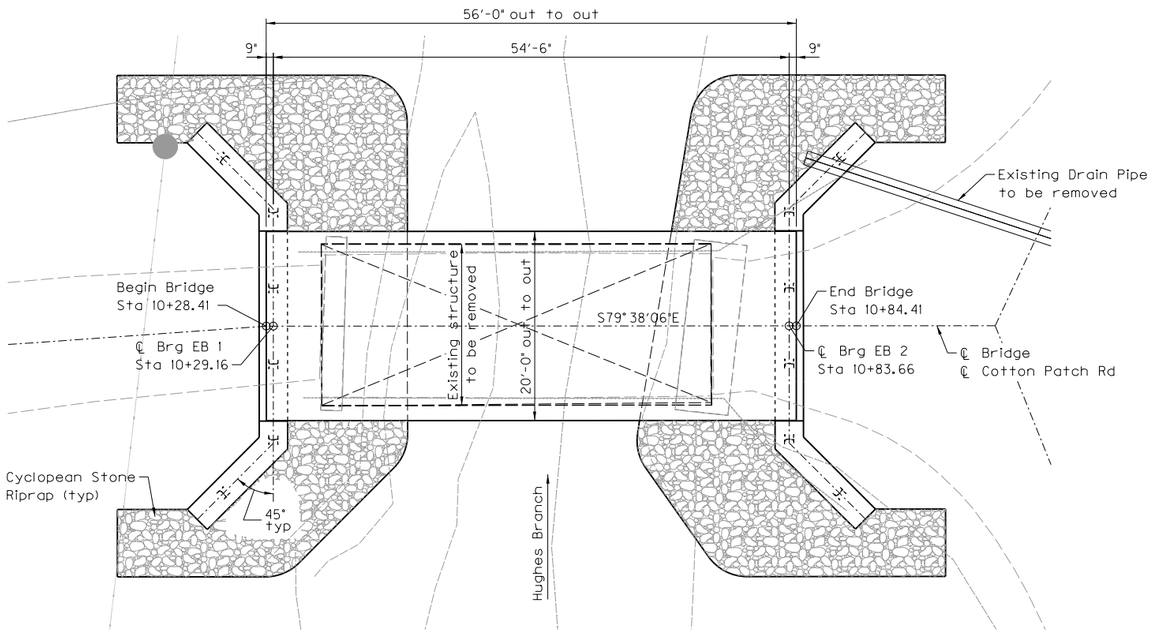


PROFILE

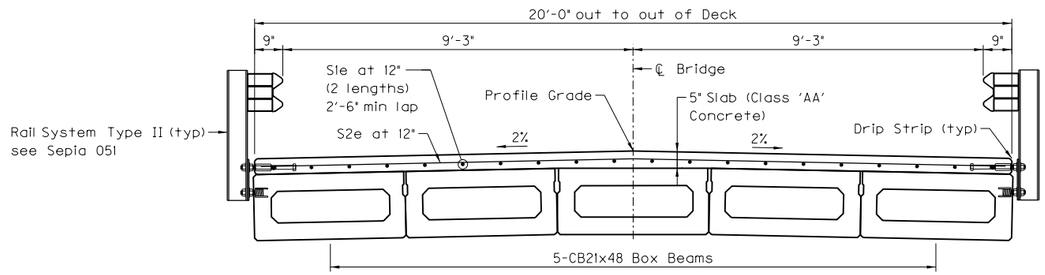
56'-0" Single Span
CB21x48 Box Beams ~ HL-93 (+25%) Live Load
0° Skew ~ 18'-6" Bridge Roadway Width



PROFILE GRADE

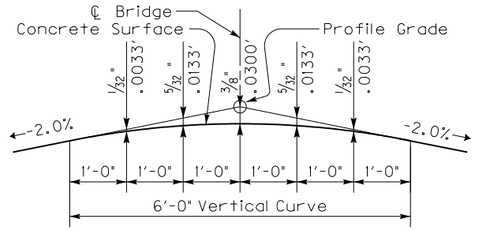


PLAN



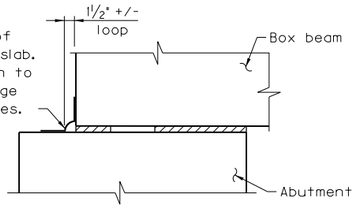
TYPICAL SECTION

BILL OF REINFORCEMENT					
MARK	TYPE	SIZE	NUMBER	LENGTH	
				FT.	IN.
S1e	str	5	40	29	2
S2e	str	5	57	19	8

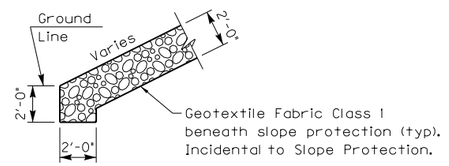


PARABOLIC CROWN

12" wide Mastic Tape to waterproof the joint between abutment and slab. The tape shall be looped as shown to allow for movement without damage to the tape. See the General Notes.



JOINT WATERPROOFING DETAIL



Toe of Slope
Detail

REVISION	DATE
DATE: March 5, 2020	CHECKED BY
DESIGNED BY: R. Massaro	A. Olusegun
DETAILED BY: R. Massaro	A. Olusegun

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CRITTENDEN

ROUTE: CP RD.

CROSSING: HUGHES BRANCH

LAYOUT

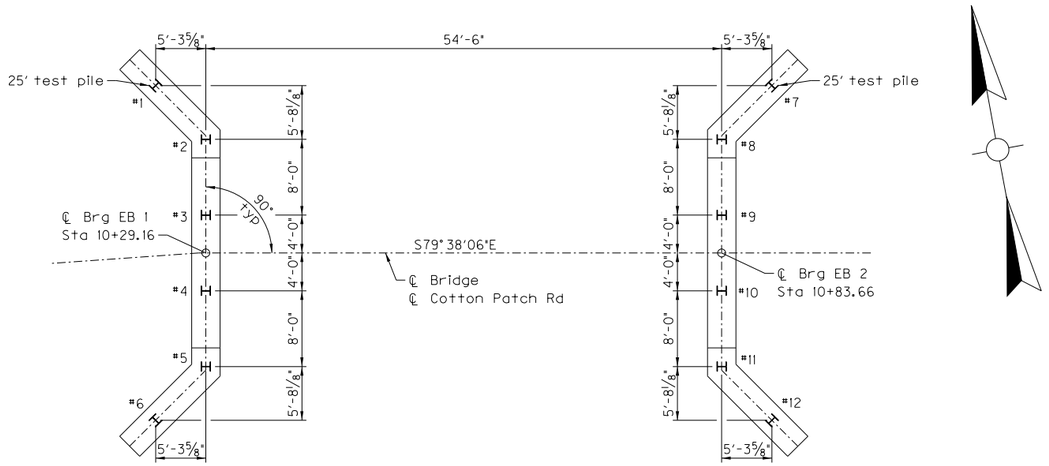
ITEM NUMBER: 1-1159

PREPARED BY: Stantec

BRIDGING KENTUCKY
Restore | Renew | Replace

SHEET NO. S2

DRAWING NO. 28111



PILE LAYOUT

PILE RECORD FOR POINT BEARING PILES

Pile No.	Pile Cut-off Elevation	Pile Length In Place	Point of Pile Elevation As Driven	Design Axial Load
	FEET	FEET	FEET	TONS
1	356.60			48
2	356.60			48
3	356.60			48
4	356.60			48
5	356.60			48
6	356.60			48
7	358.09			48
8	358.09			48
9	358.09			48
10	358.09			48
11	358.09			48
12	358.09			48

Notes

1. A diesel pile driving hammer with a rated energy between 10.5 foot-kips and 20.1 foot-kips will be required to drive 12x53 steel H-piles to practical refusal without encountering excessive blow counts or damaging the piles. The Contractor shall submit the proposed pile driving system to the Engineer for approval prior to the installation of the first pile. Approval of the pile driving system by the Engineer will be subject to satisfactory field performance of the pile driving procedures.
2. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advance the pile. Drive additional production and test piles if directed by the Engineer.
3. The installation of the pile foundations should conform to current AASHTO LRFD Bridge Design Specifications, and Section 604 of the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction.
4. The Kentucky Transportation Cabinet recommends that protective pile points be used on end bearing piles to allow for embedment into the top of bedrock. Use of reinforced pile points capable of penetrating boulders and hard layers which may be encountered is recommended. Installation of pile points should be in accordance with Section 604 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

Definitions of Terms

PILE CUT-OFF ELEVATION: Elevation of the top of pile in the finished structure.

PILE LENGTH IN PLACE: Actual pile length below the Pile Cut-Off Elevation in the finished structure.

POINT OF PILE ELEVATION AS DRIVEN: Actual point of pile elevation in the finished structure.

DESIGN AXIAL LOAD: Load carried by each pile as estimated from structural design calculations for Factored LRFD Loadings.

CALCULATED FIELD BEARING: Contrary to Section 604.03.07 of the Standard Specifications, in place bearing values are not required for piles bearing on rock when driven to practical refusal.

Driving Criteria

DRIVING CRITERIA: Drive point bearing piles to practical refusal.

PRACTICAL REFUSAL: For this project minimum blow requirements are reached after total penetration becomes ½" or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of ½" or less. Advance the production piling to the driving resistances specifed above and to depths determined by test pile(s) and subsurface data sheet(s). Immediately cease driving operations if the pile visibly yields or becomes damaged during driving. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advance the pile. Drive additional production and test piles if directed by the Engineer.

Field Data

For each pile, the Project Engineer shall record the following on this sheet: Pile Length in Place and Point of Pile Elevation as Driven.

Submit this record to:

Kentucky Transportation Cabinet
Director, Division of Structural Design
3rd Floor East
200 Mero Street
Frankfort, KY 40622

This pile record does not replace other pile records the Project Engineer is required to keep and submit.

Use HP 12x53 in accordance with BPS-003, c.e.

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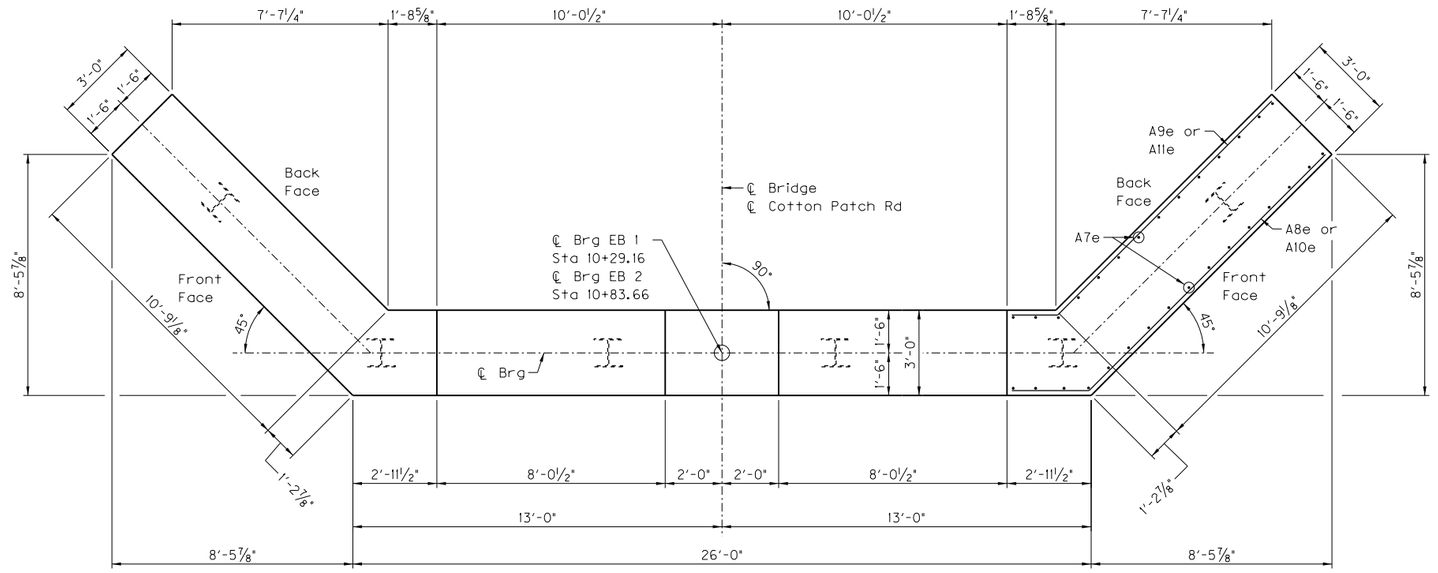
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CRITTENDEN

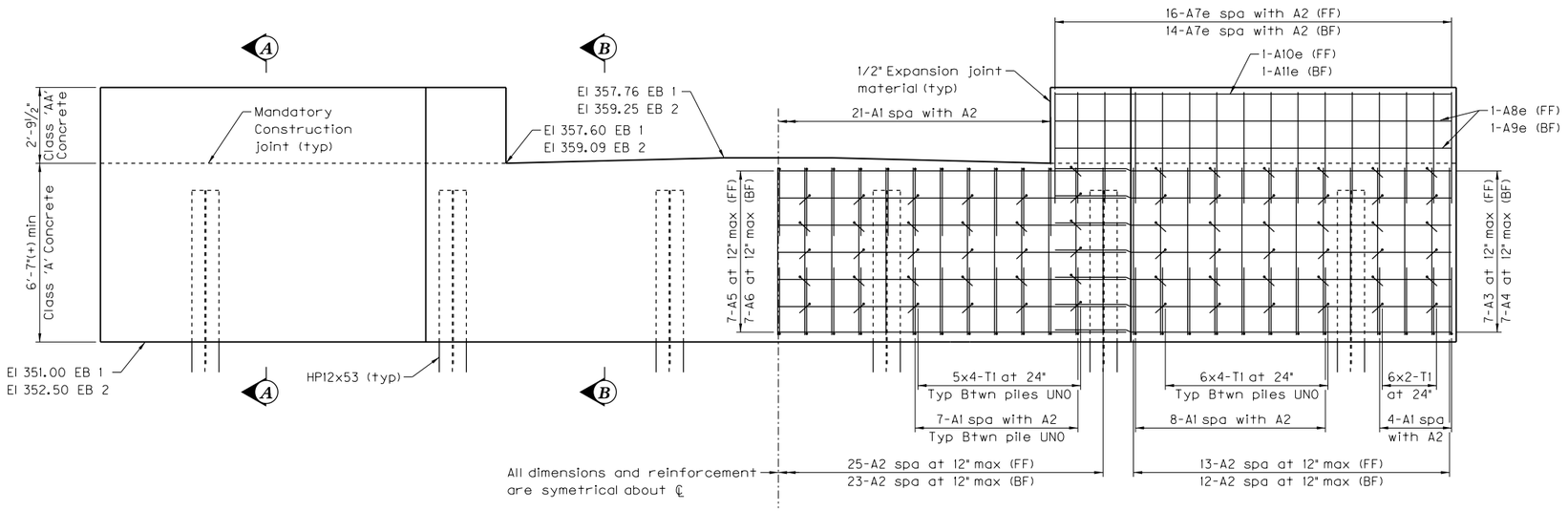
ROUTE	CROSSING
CP RD.	HUGHES BRANCH

PILE RECORD

ITEM NUMBER	PREPARED BY		SHEET NO.
1-1159	Stantec	BRIDGING KENTUCKY Restore | Renew | Replace	S3
			DRAWING NO. 28111



PLAN



ELEVATION

Notes:

Use 2" minimum clearance for all reinforcement unless noted otherwise.

Top of cap elevations are given at ℄ bent.

See Sheet No. S5 for Sections and Bill of Reinforcement.

REVISION	DATE

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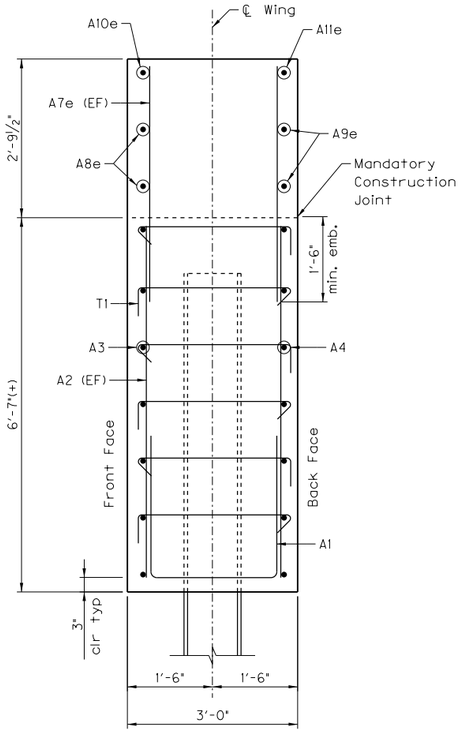
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CRITTENDEN

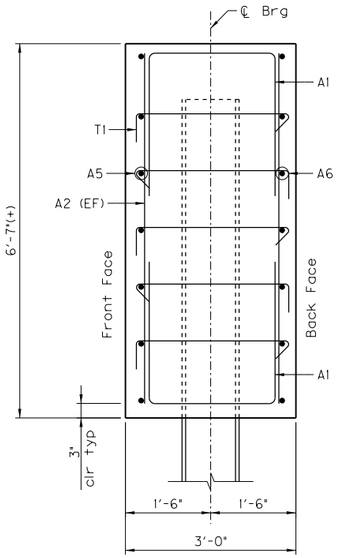
ROUTE	CROSSING
CP RD.	HUGHES BRANCH

END BENTS

ITEM NUMBER	PREPARED BY	SHEET NO.
1–1159	Stantec	S4
	BRIDGING KENTUCKY	DRAWING NO. 28111



SECTION A–A

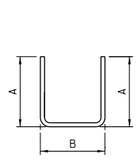


SECTION B–B

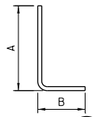
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NUMBER	LENGTH		LOCATION	A		B		C		D	
				FT.	IN.		FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
A1	2	5	66	7	6	wall/wing	2	6	2	6				
A2	str	5	98	6	2	wall/wing								
A3	8	5	14	14	7	wing	11	9	2	10	2	0	2	0
A4	8	5	14	13	6	wing	10	8	2	10	2	0	2	0
A5	str	5	7	25	10	wall								
A6	str	5	7	23	8	wall								
A7e	str	5	60	4	2	wing								
A8e	8	5	4	14	6	wing	11	9	2	$8^1/_2$	1	11	1	11
A9e	8	5	4	12	4	wing	10	8	1	$7^1/_2$	1	$1^3/_4$	1	$1^3/_4$
A10e	8	6	2	14	6	wing	11	9	2	$8^1/_2$	1	11	1	11
A11e	8	6	2	12	4	wing	10	8	1	$7^1/_2$	1	$1^3/_4$	1	$1^3/_4$
T1	36s	4	162	3	7	wall/wing	2	8	0	6			0	$4^1/_2$

Note: Bill of Reinforcement is per each end bent.



TYPE (2)



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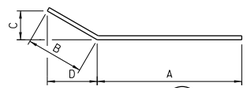

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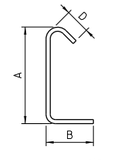

TYPE (36)

Notes:

Use 2" minimum clearance for all reinforcement unless noted otherwise.

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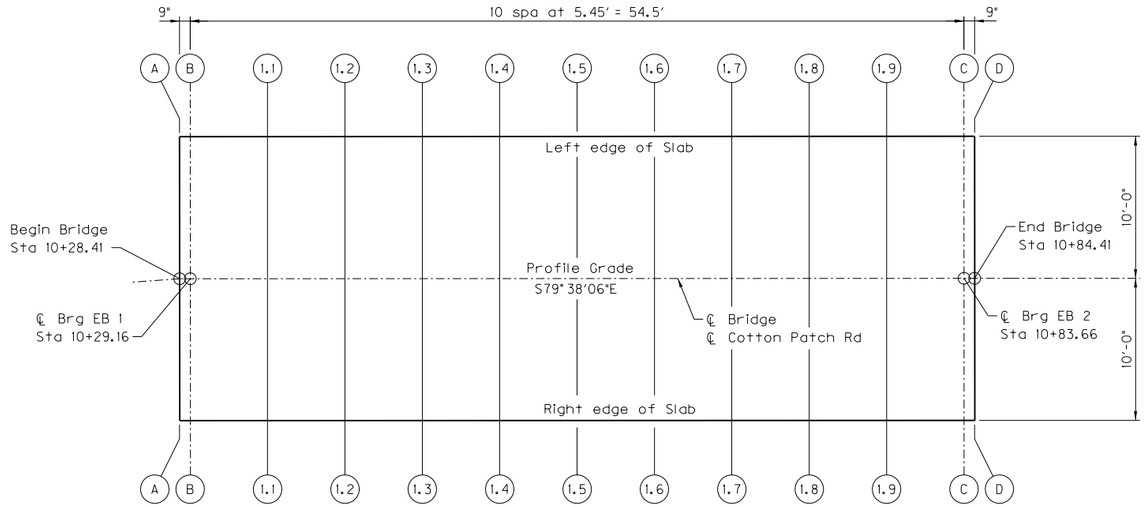
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CRITTENDEN

ROUTE	CROSSING
CP RD.	HUGHES BRANCH

END BENT DETAILS

ITEM NUMBER	PREPARED BY		SHEET NO.
1–1159	Stantec	BRIDGING KENTUCKY Restore | Renew | Replace	S5
			DRAWING NO. 28111



PLAN

TABLE OF CONSTRUCTION ELEVATIONS

Line	Left Edge of Slab			Profile Grade			Right Edge of Slab		
	CONSTR ELEV	TOP OF BEAM	DIM "X"	CONSTR ELEV	TOP OF BEAM	DIM "X"	CONSTR ELEV	TOP OF BEAM	DIM "X"
A	359.867			360.067			359.867		
B	359.888			360.088			359.888		
1.1	360.049			360.249			360.049		
1.2	360.208			360.408			360.208		
1.3	360.364			360.564			360.364		
1.4	360.517			360.717			360.517		
1.5	360.668			360.868			360.668		
1.6	360.816			361.016			360.816		
1.7	360.961			361.161			360.961		
1.8	361.104			361.304			361.104		
1.9	361.244			361.444			361.244		
C	361.381			361.581			361.381		
D	361.402			361.602			361.402		

CONSTRUCTION ELEVATION NOTES

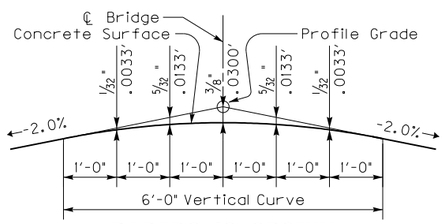
Take elevations on top of beam at points indicated after beams have been laterally tensioned and grouted. Read elevations to three decimal places and enter readings in table under "TOP OF BEAM" elevations.

Compute dimension "X" as follows:
"CONSTR ELEV" minus " TOP OF BEAM" equals dimension "X".
"CONSTR ELEV" includes camber due to weight of concrete slab. Measuring of dimension "X" gives the final check on beam tolerances for camber, beam damage, and errors in erection that produce reverse cambers, sags, and unsightly fascia beams.

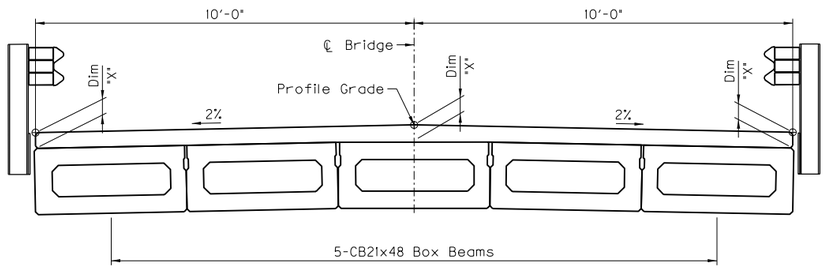
For setting templates, measure dimension "X" above top of beam. Do not set templates by elevations.

Temporary supports or shoring will not be permitted under the beams when pouring the slab or when taking "TOP OF BEAM" elevations.

Construction elevations will cause the slab to be approximately 6.0" thick at each end and go to approximately 5.0" thick at midspan. Any additional concrete required above the plan quantity, due to beam camber being different from the designer's assumptions, is the contractor's responsibility at no cost to the department.



PARABOLIC CROWN



⊕ Indicates point where construction elevations are given.

TYPICAL SECTION

REVISION	DATE

DATE: March 5, 2020	CHECKED BY
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DETAILED BY: R. Massaro	A. Olusegun

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CRITTENDEN

ROUTE	CROSSING
CP RD.	HUGHES BRANCH

CONSTRUCTION ELEVATIONS

ITEM NUMBER	PREPARED BY		SHEET NO.
1-1159	Stantec	BRIDGING KENTUCKY Restore | Renew | Replace	S6
			DRAWING NO. 28111