

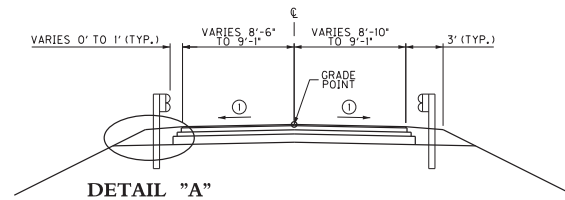
COUNTY OF	ITEM NO.	SHEET NO.
HENRY	5-10003	R2

TYPICAL SECTIONS KY 3175

ROADWAY SECTION

PAVEMENT DESIGN – FULL DEPTH STREET

CL2 ASPH SURF 0.380 PG64-22	1.25" DEPTH
CL2 ASPH BASE 1.000 PG64-22	4.00" DEPTH
CL2 ASPH BASE 1.000 PG64-22	4.00" DEPTH
DGA BASE	8.00" DEPTH



**KY 3175 (SULPHUR-BEDFORD ROAD)
EXISTING BRIDGE ID #052B00064N**

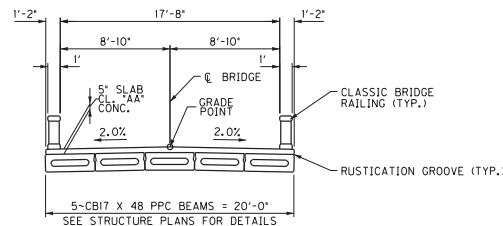
PROJECT COORDINATES

Coordinates for horizontal control were obtained by redundant GPS observations using Spectra SP80 GNSS receivers on the NAD83 Kentucky State Plane Coordinate System, KY Single Zone, US Survey Feet utilizing the KYCORS RTN GPS Network on December 17, 2018. Coordinates shown are State Plane Coordinates, US Survey Feet. No project datum factor was calculated or used for this project.

BASIS OF ELEVATIONS

Elevations were established by redundant GPS observations using Spectra SP80 GNSS receivers on the NAVD88 vertical datum, GEOID12B utilizing the KYCORS RTN GPS Network on December 17, 2018 and were adjusted by closed differential level loop based on the elevation of CP 101 = 678.85'.

BRIDGE SECTION



NOTES:

- PAVEMENT CROSS SLOPE TO TRANSITION FROM EXISTING TO BRIDGE CROSS SLOPE INCLUDING PARABOLIC CROWN.
- MATERIAL NEEDED FOR SHOULDERS OUTSIDE OF PAVED AREA WILL BE MEASURED AND PAID FOR AS GRANULAR EMBANKMENT IN ACCORDANCE WITH THE SPECIAL NOTE FOR BRIDGE OVERLAY APPROACH PAVEMENT.

COORDINATE CONTROL POINTS

POINT	DESCRIPTION	State Plane Coordinates			STATION	OFFSET
		NORTH (Y)	EAST (X)	ELEV. (Z)		
CP 101	5/8" REBAR & CAP	4069701.20	5058129.39	678.85	--	--
CP 102	5/8" REBAR & CAP	4069890.03	5057902.41	678.66	12+48.96	16.50' RT
CP 103	5/8" REBAR & CAP	4069997.77	5057761.82	687.18	--	--



KY 3175 (SULPHUR-BEDFORD RD.)
OVER WHITE SULPHUR FORK
TYP. SECTION AND COORD. CONTROL

CONVENTIONAL SIGNS

SURVEY LINE
GRADE LINE
GROUND LINE
COUNTY LINE
CORPORATE LIMITS
EXIST. PROPERTY LINE
EXIST. RIGHT OF WAY & PROPERTY LINE
PROPOSED RIGHT OF WAY
RIGHT OF WAY MONUMENT

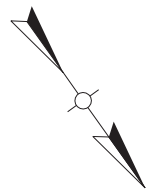
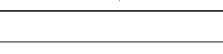
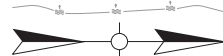
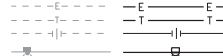
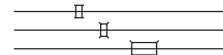
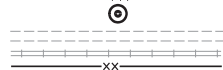
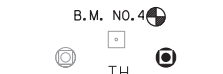
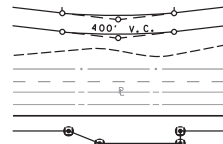
BENCH MARK
EXISTING R/W MARKER
RIGHT OF WAY MONUMENT
EXISTING/PROPOSED

UTILITY TEST HOLE
EXISTING ROAD
RAILROAD
FENCE (CONTROLLED ACCESS)
FENCE (EXCEPT STONE AND HEDGE)
TREE LINE

TREES
PIPE CULVERT
CULVERT
BRIDGE
BUILDINGS

GUARDRAIL
LIGHTING POLE
POWER POLE
JOINT POWER & TELEPHONE POLE
TELEPHONE & TELEGRAPH POLE
ANCHOR, POWER OR TELEPHONE
STUB POWER

STUB TELEPHONE
WATER MAIN
GAS MAIN
TELEPHONE DUCT
ELECTRIC DUCT
DIRECT BURIAL TV CABLE
SANITARY SEWER (WITH MANHOLE)
STORM SEWER (WITH MANHOLE)
DIRECT BURIAL ELECTRIC CABLE
DIRECT BURIAL TELEPHONE CABLE
OVERHEAD WIRE
TRAFFIC LIGHTS
ELECTRIC MANHOLE
TELEPHONE MANHOLE
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



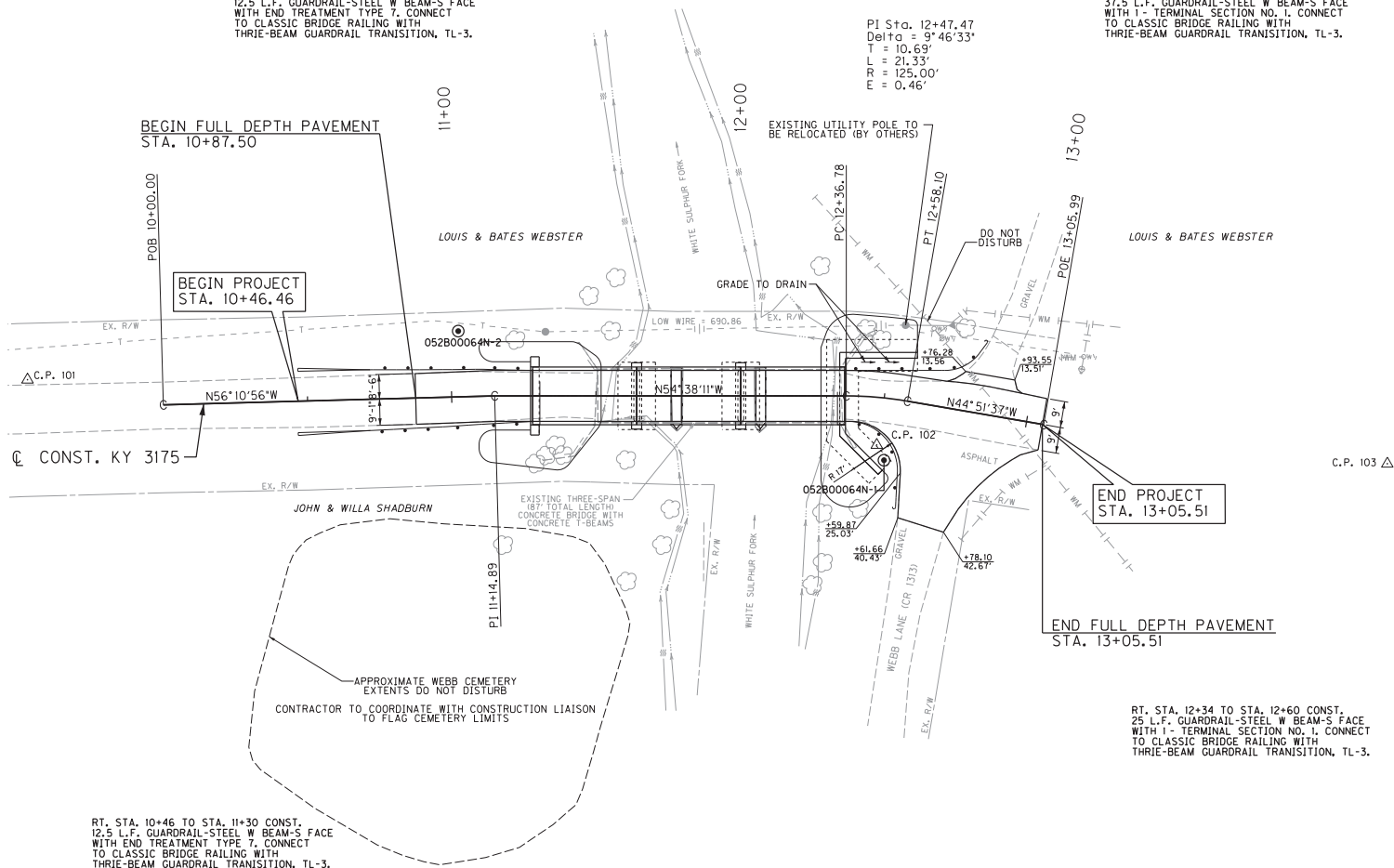
DO NOT DISTURB THE EXISTING WATERMAIN
TEMPORARY SHORING AND/OR SHEETING MAY BE REQUIRED
TO FACILITATE FOUNDATION CONSTRUCTION AND NOT DISTURB
EXISTING UTILITIES. ALL COSTS FOR THIS WORK IS INCIDENTAL
TO ADJACENT PAY ITEMS.

REMOVE EX. THREE SPAN BRIDGE
STA. 11+49 TO STA. 12+36

LT. STA. 10+47 TO STA. 11+30 CONST.
12.5 L.F. GUARDRAIL-STEEL W BEAM-S FACE
WITH END TREATMENT TYPE 7. CONNECT
TO CLASSIC BRIDGE RAILING WITH
THRIE-BEAM GUARDRAIL TRANSITION, TL-3.

BEGIN FULL DEPTH PAVEMENT
STA. 10+87.50

BEGIN PROJECT
STA. 10+46.46



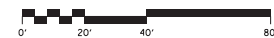
PI Sta. 12+47.47
Delta = 9°46'33"
T = 10.69'
L = 21.33'
R = 125.00'
E = 0.46'

LT. STA. 12+34 TO STA. 12+82 CONST.
37.5 L.F. GUARDRAIL-STEEL W BEAM-S FACE
WITH I - TERMINAL SECTION NO. 1. CONNECT
TO CLASSIC BRIDGE RAILING WITH
THRIE-BEAM GUARDRAIL TRANSITION, TL-3.

LOUIS & BATES WEBSTER

C.P. 103 Δ

RT. STA. 12+34 TO STA. 12+60 CONST.
25 L.F. GUARDRAIL-STEEL W BEAM-S FACE
WITH I - TERMINAL SECTION NO. 1. CONNECT
TO CLASSIC BRIDGE RAILING WITH
THRIE-BEAM GUARDRAIL TRANSITION, TL-3.



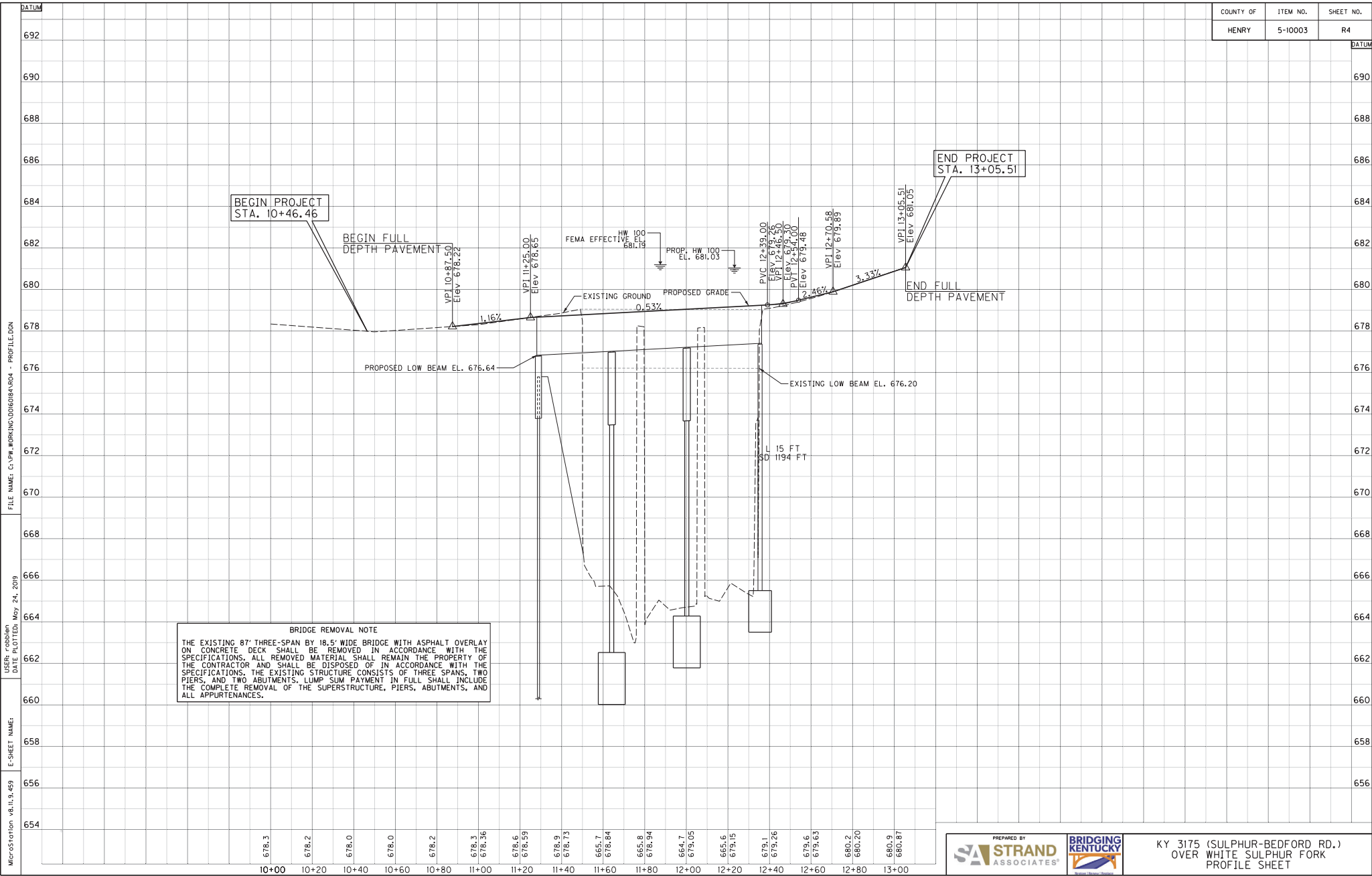
KY 3175 (SULPHUR-BEDFORD RD.)
OVER WHITE SULPHUR FORK
PLAN SHEET

FILE NAME: ...D:\proj\03 - Plan Sheet

DATE PLOTTED: 7/24/2018 12:18 AM

E-SHEET NAME:

MicroStation v8.1.9.453



KY 3175 (SULPHUR-BEDFORD RD.)
OVER WHITE SULPHUR FORK
PROFILE SHEET

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. 1.25x AASHTO HL 93 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. Cost shall be included in the unit price bid for 'Concrete - Class AA'.

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 3/4", 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, Type I shall be placed between the embankment and the slope protection in accordance with Standard Specifications 214 and 843. Payment for Geotextile Fabric, Type 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_052B00064N@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.

Note: The designation in the email 052B00064N refers to the Bridge ID number which is located on the Title Sheet, RI of the Bridge Plans. Example: SHOP 042B0019@docs.e-builder.net

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).

General Notes

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.,
Cadillac 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 Coating: Concrete Coating is estimated at 5,347 SF. It is the responsibility of the contractor to verify this estimate and bid appropriately. No payment adjustments will be made if the actual quantity is different than this estimate.

Contrary to Septa 047, Concrete Coating will not be applied to the Box Beams by the fabricator in the Shop.

Concrete Coating shall be applied by the Contractor in the field in accordance with the Special Note Concrete Coating.

Concrete Sealer:
Apply concrete sealer in accordance with the Special Note for Sealing Bridge Decks and to the limits as indicated on Sheet ST, Box Beams CBIT Details.

Spread Footing: Based on a review of the existing subsurface conditions and anticipated structural loads, it is recommended that rock bearing foundation system consisting of spread footings be used for all bridge substructure elements. A presumptive bearing resistance of 20 ksf on unweathered bedrock is being recommended.

Excavation for footings at the structure locations should be level and free of loose, water softened material, etc. Additional rock excavation to achieve suitable bearing conditions may be required depending upon topography and bedrock weathering conditions.

Solid rock excavation will be required for installation of the substructure's spread footings. The contractor shall take care during blasting and other excavation methods to avoid over-breakage and damage to the bedrock beneath the footings.

Footing excavations in bedrock shall be cut neatly so that no forming or backfilling is necessary in the construction of the portions of the footings located in rock. Concrete shall be placed directly against the cut rock faces. Mass concrete should be placed in the excavation from the top of the footing to the bedrock surface where the footing does not extend to the bedrock surface.

Bearing elevation of footings may be adjusted at the discretion of the Engineer if competent, unweathered bedrock is found at a higher elevation than specified for the respective substructure element. The top of new spread footings should be fully embedded into unweathered bedrock. At a minimum, two-foot embedment into competent bedrock shall be maintained.

Prior to placement of any concrete or reinforcing steel in a foundation excavation, the excavation bottom should be clean and all soft, wet, or loose materials should be removed. In no case should concrete be placed upon compressible or water-softened materials. Any clay seams or suspect weak materials at or near the bearing elevation will need to be undercut and replaced with mass concrete.

Concrete placement for footings should be placed as soon as practical after completion of the footing excavation. If the bedrock becomes softened at bearing elevation, the softened material should be undercut to unweathered material prior to placement of reinforcing steel and concrete. Seasonal groundwater fluctuations may cause groundwater infiltration into the footing excavation, and a dewatering method may be necessary.



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.

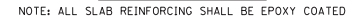
Contrary to the standard drawings for steel piling, mill test reports are not required to be notarized.

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: May 24, 2019	CHECKED BY		
DESIGNED BY: NDR	ADW		
DETAILED BY: RJN	NDR		
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS			
COUNTY HENRY			
ROUTE KY 3175	CROSSING WHITE SULPHUR FORK		
GENERAL NOTES			
ITEM NUMBER		PREPARED BY 	SHEET NO. S1
5-10003		 <small>Bridging Kentucky Program</small>	DRAWING NO. 28049



35'-3 1/2" X 36'-1" X 35'-3 1/2" CB 17-48 PPC BOX BEAM - THREE SPAN
LIVE LOAD 125% OF HL-93 (KYHL-93)
17'-8" BRIDGE ROADWAY WIDTH - 0° SKEW

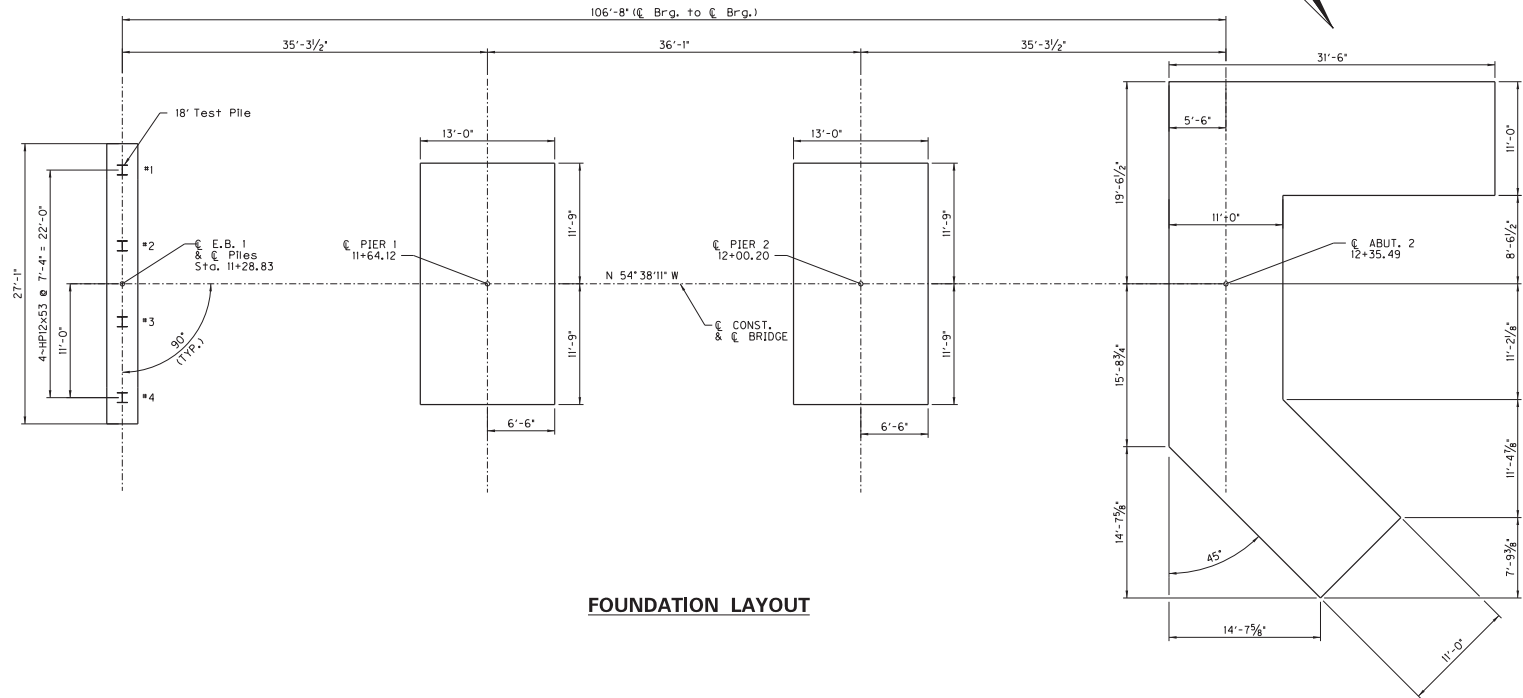
5-10003

SHEET NO.
S2
DRAWING NO.
28049

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	675.60			58
2	675.60			58
3	675.60			58
4	675.60			58

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. The installation of the pile foundations should conform to current AKSHTO LRFD Bridge Design Specifications, and Section 604 of the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction.
3. Provide pile points for all piles. Installation of pile points should be in accordance with Section 604 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.



FOUNDATION LAYOUT

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 $\frac{1}{2}$ " or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of $\frac{1}{2}$ " or less. Advance the production piling to the driving resistances specified above and to depths determined by test piles and subsurface data sheets. 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.

Piles shall be driven a minimum of 10'-0" below the bottom of the concrete end bent pile caps. If this minimum cannot be met, predrilling will be required. See Sheet S1 General Notes.

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 40602

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. Pile points capable of breaking boulders and seating in sloping rock lines are required.

ITEM NUMBER	
5-10003	

REVISION		DATE
DATE: May 24, 2019	CHECKED BY:	
DESIGNED BY: NDR	ADW	
DETAILED BY: RJN	NDR	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY HENRY		
ROUTE KY 3175	CROSSING WHITE SULPHUR FORK	
FOUNDATION LAYOUT		
PREPARED BY	STRAND ASSOCIATES [®]	SHEET NO. S3
	BRIDGING KENTUCKY	DRAWING NO. 28049

MARK	TYPE	NO.	SIZE	LENGTH
A1e	14s	27	5	11' - 0"
A2e	5 tr.	9	8	26' - 9"
A3e	5 tr.	4	5	26' - 9"
A4e	5 tr.	16	5	3' - 9"
A5e	5 tr.	12	5	3' - 2"
A6e	5 tr.	4	6	3' - 2"



Technical drawing of a rectangular frame assembly. The drawing shows a cross-section of the frame with various dimensions and labels. The overall width is 3'-0" and the overall height is 2'-4 1/2". The frame is composed of several parts, including a top rail (A6), a side rail (A4), and a bottom rail (A1). The frame is supported by a base (A2) and a back panel (A3). The drawing includes dimensions for the frame's width, height, and the spacing between the rails. Labels include "3' CL.", "3'-A5", "EQ. SPA. (E.F.)", "9\"", "1'-6\" MIN.", "EMB.", "3'-0\"", "3' CL.", "4-A2 EQ. SPA.", "1\"", "2-A3 E.F. EQ. SPA.", "A1", "A4", "A6", "BRG. & CAP", and "5-A2 AS SHOWN".

The plan view shows the bridge structure with the following dimensions and features:

- Overall Length:** 13'-6 1/2' (from the left end to the center of the bridge).
- Bridge Length:** 27'-1' (from the center of the bridge to the right end).
- Right End Offset:** 3'-6" (from the right end of the bridge to the right end of the structure).
- Structure Width:** 3'-0" (overall width) and 1'-6" (width of the structure).
- Structure Components:** A4, A5 or A6, and BACK FACE OF END BENT.
- Elevations:** EL. 676.60 (at the right end), EL. 676.75 (at the center of the bridge), and EL. 676.60 (at the left end).
- Bridge Details:** CONST. BRIDGE, BRG. & CAP, and 4 PILES Ø 7'-4" = 22'-0" (at the center of the bridge).
- Angles:** 2'-0" and 90° (at the center of the bridge).
- Offsets:** 2'-5 1/2' (from the left end to the center of the bridge) and 2'-5 1/2' (from the right end to the center of the bridge).

PLAN



ELEVATION

Diagram illustrating the ELEVATION of a bridge structure, showing various dimensions and components:

- Top Section:**
 - Overall width: 3'-0" (divided into 3' and 3' segments).
 - Reinforcement: 4-A4 @ 12" (divided into 3'-0" and 3' segments).
 - Labels: A6, A5.
 - Material: 1/2" EXPANSION JOINT MATERIAL (TYP.).
- Bottom Section:**
 - Overall width: 3'-0" (divided into 3'-0" and 3'-0" segments).
 - Reinforcement: 3-A1 @ 9" = 1'-6" (divided into 3'-0" and 3'-0" segments).
 - Labels: A2, A3.
 - Material: 1/2" EXPANSION JOINT MATERIAL (TYP.).
- Right Section:**
 - Overall width: 3'-6" (divided into 3'-0" and 3'-0" segments).
 - Reinforcement: 2-A4/2 (divided into 3'-0" and 3'-0" segments).
 - Material: 1/2" EXPANSION JOINT MATERIAL (TYP.).
- Center Section:**
 - Overall width: 2'-0" (divided into 2'-0" and 2'-0" segments).
 - Reinforcement: 2'-0" (TYP.).
- Notes:**
 - CONST. AND BRIDGE ALL DIMENSION AND REINFORCEMENT SYMMETRICAL ABOUT THIS C.
 - MANDATORY CONSTRUCTION: BOX BEAMS, WINGS ARE SET AND TENSION (TYP. EACH WING).

ELEVATION

— MANDATORY CONSTRUCTION JOINT FOR SIDE BY SIDE BOX BEAMS. WINGS SHALL BE POURED AFTER BEAMS ARE SET AND TENSIONING RODS ARE TIGHTENED (TYP. EACH WING).

REVISION		DATE	
DATE: May 24, 2019		CHECKED BY	
DESIGNED BY: NDR		DJW	
DETAILED BY: RJN		NDR	
<p align="center">Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS</p>			
<p align="center">COUNTY WHITLEY</p>			
ROUTE KY 3175		CROSSING WHITE SULPUR FORK	
<p align="center">END BENT 1 DETAILS</p>			
 <p align="center">PREPARED BY STRAND ASSOCIATES®</p>		 <p align="center">BRIDGING KENTUCKY A Division of The Kentucky Transportation Cabinet</p>	
		SHEET NO. S4 DRAWING NO. 28045	

ITEM NUMBER

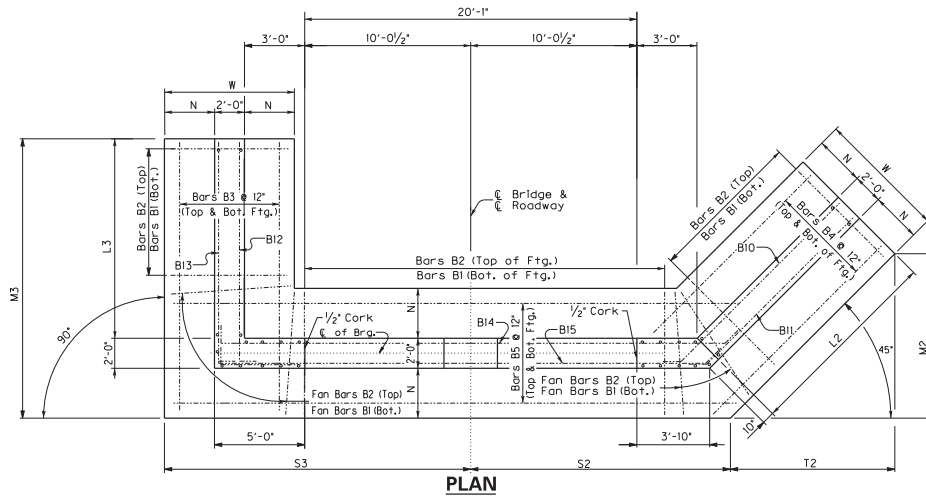
5-10003

Bill of Reinforcement																			
MARK	B1	B2	B3	B4	B5	B6				B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
TYPE	Str.	Str.	Str.	Str.	Str.	4				Str.	Str.	Str.	8	8	5	5	7	7	Str.
SIZE	#5					#5				#5				#5				#5	
H	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.
	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.
15-16	86	10	11	8	12	86	7	11	8	12	26	31	2	26	20	9	26	35	10
13-14	84	9	10	8	12	84	7	10	8	12	24	31	2	24	20	6	24	35	2

Table of Dimensions

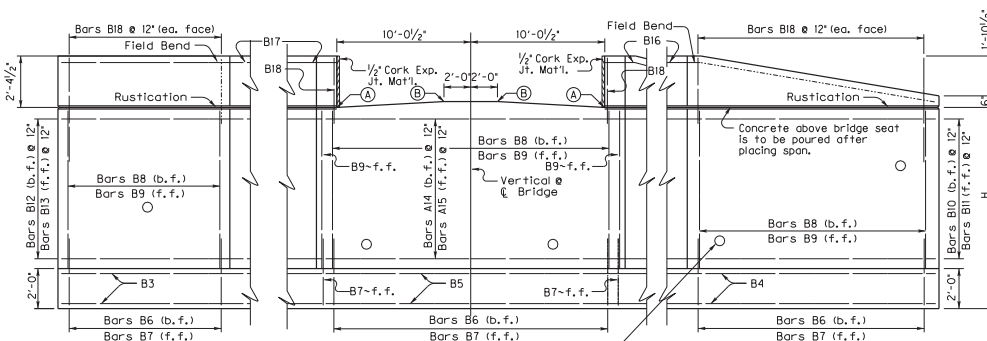
H	W	N	M2	M3	T2	T3	L2	L3	S2	S3
Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length
15-16	12	0	5	0	14	9	3	6	14	9
13-14	11	0	4	6	14	7	3	6	14	7

BEAM SEAT ELEV.	
ABUT. 2	
A	677.16
B	677.32



PLAN

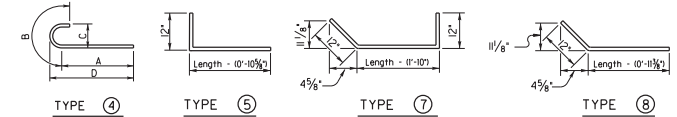
Note: Trim B16 & B17 bars if necessary



ELEVATION

Place 4" weep hole drains at 8'-0" centers at such elevation as to afford best drainage of backfill, in accordance with the Standard Specifications.

Reinforcement Details



GENERAL NOTES

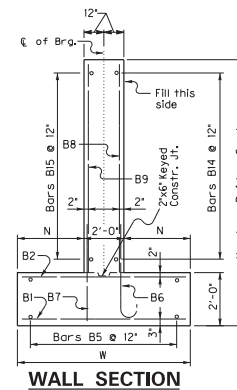
SPECIFICATIONS: Construct abutments according to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction. Abutments are designed for side by side box beams as detailed in Standard Drawings BDP-001 through BDP-012 and all applicable active sepals, current edition.

FOUNDATION PRESSURE: See Sheet S1 General Notes.

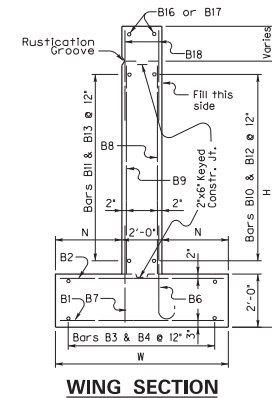
FOOTING ELEVATION: See Sheet S1 General Notes.

NOTE: Distances to bars shown are clear dimensions unless otherwise noted.

MATERIAL SPECIFICATIONS:
Concrete, Class 'A' = 3500 psi
Steel Reinforcement = Grade 60



WALL SECTION



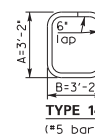
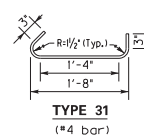
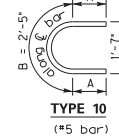
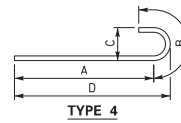
WING SECTION

REVISION		DATE
DATE: May 24, 2019	CHECKED BY:	
DESIGNED BY: NDR	DJW	
DETAILED BY: RJN	NDR	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY HENRY		
ROUTE KY 3175	CROSSING WHITE SULPHUR CREEK	
ABUTMENT 2 DETAILS		
PREPARED BY	STRAND ASSOCIATES [®]	BRIDGING KENTUCKY
ITEM NUMBER	5-10003	SHEET NO. S5 DRAWING NO. 28049

Bill of Reinforcement

MARK	P1	P2	P3	P4	P5	P6	P7	P8	P9(e)	P10(e)	P11(e)
TYPE	Str.	Str.	Str.	Type 4	Type 10	Str.	Type 31	Str.	Str.	Str.	Type 14
SIZE	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5
H	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
14-15	35	8	12	8	8	26	6	23	2	12	35
16-17	35	8	12	8	8	26	6	23	2	12	35
18-19	35	8	12	8	8	26	6	23	2	12	35

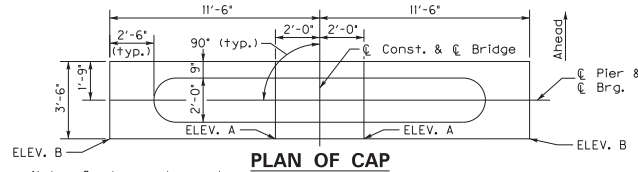
Reinforcement Details



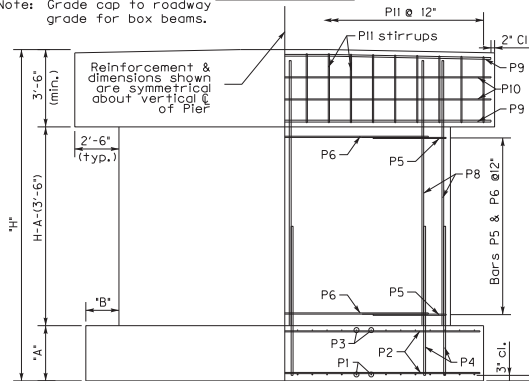
DIMENSIONS TABLE				
H	A	B	C	D
14-15	2'6"	2'9"	1'9"	5'6"
16-17	2'6"	2'9"	1'9"	5'6"
18-19	2'6"	2'9"	1'9"	5'6"

Note: All bars in cap shall be epoxy coated.

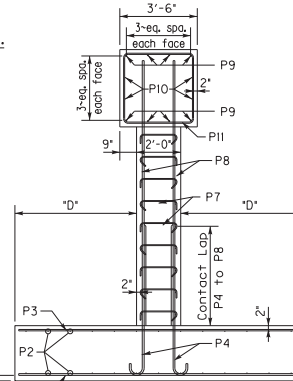
TOP OF CAP ELEV.		
	A	B
PIER 1	676.93	676.77
PIER 2	677.12	676.97



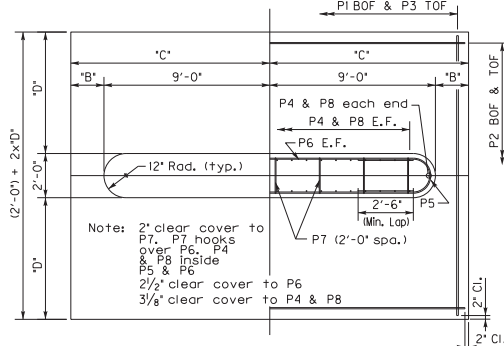
Note: Grade cap to roadway grade for box beams.



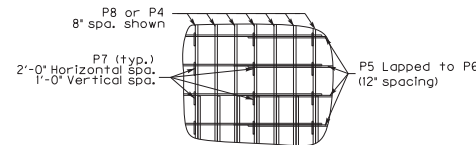
ELEVATION



END ELEVATION



PLAN OF FOOTING



P7 BAR PLACEMENT

(alternate 90° & 135° bar ends)

GENERAL NOTES

SPECIFICATIONS: Construct piers according to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction. Piers are designed for side by side box beams as detailed in Standard Drawings BDP-001 through BDP-012 and all applicable active Sepias, current edition.

FOUNDATION PRESSURE: See Sheet SI General Notes.

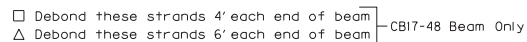
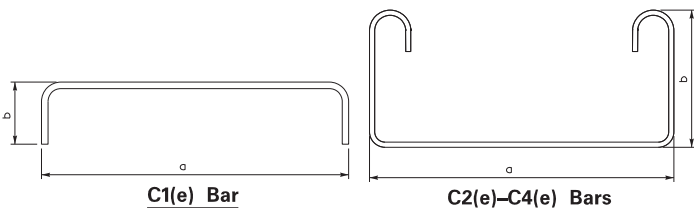
NOTE: Distances to bars shown are clear dimensions unless otherwise noted.

MATERIAL SPECIFICATIONS:
Concrete, Class 'A' = 3500 psi
Steel Reinforcement = Grade 60

REVISION		DATE
DATE: May 24, 2019	CHECKED BY: DJW	
DESIGNED BY: NDR	DETAILED BY: RJN	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS COUNTY: HENRY ROUTE: KY 3175 CROSSING: WHITE SULPHUR FORK		
PIER DETAILS PREPARED BY: STRAND ASSOCIATES® BRIDGING KENTUCKY SHEET NO. S6 DRAWING NO. 28049		

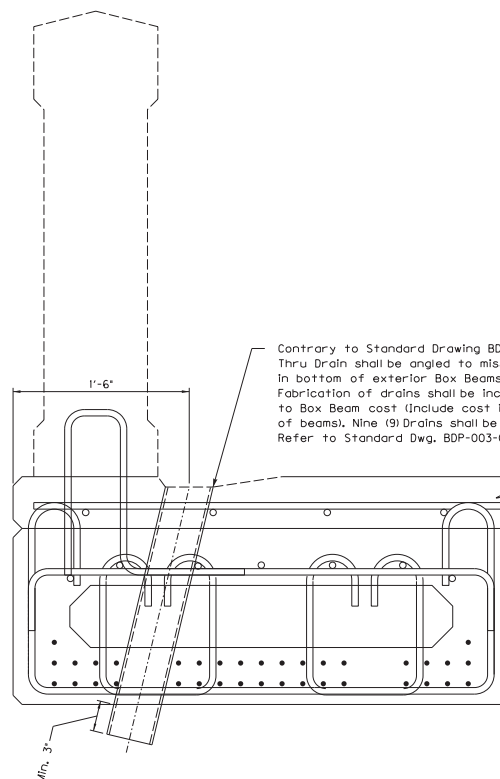
ITEM NUMBER

5-10003

**CB17 BEAM**

C1(e) Bar

C2(e)–C4(e) Bars



CB17 BEAM

<i>Straight Reinforcement</i>				
Mark	Size	Length		
A1(E)	#5	Beam	Length	Minus
A2(E)	#4	Beam	Length	Minus
D(E)	#8	2'-0"		

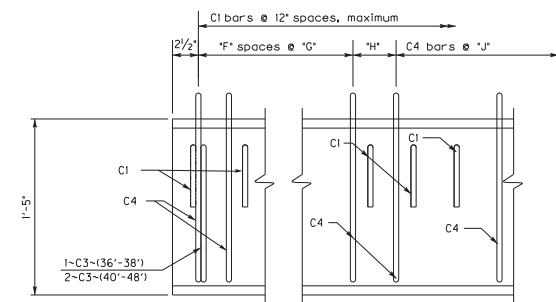
<i>Bent Reinforcement</i>				
Mark	Size	a	b	
C1(e)	#5	3'-9"	6"	
C2(e)	#4	3'-9"	1'-1/4"	
C3(e)	#5	11 3/8"	1'-1 3/8"	
C4(e)	#4	3'-9"	1'-6 1/4"	

ITEM NUMBER
5-10003



TABLE OF STRAND DATA					
Beam Type	Beam Length (feet)	Number of Strands Required			
		Row ①	Row ②		
CB17	36	14			

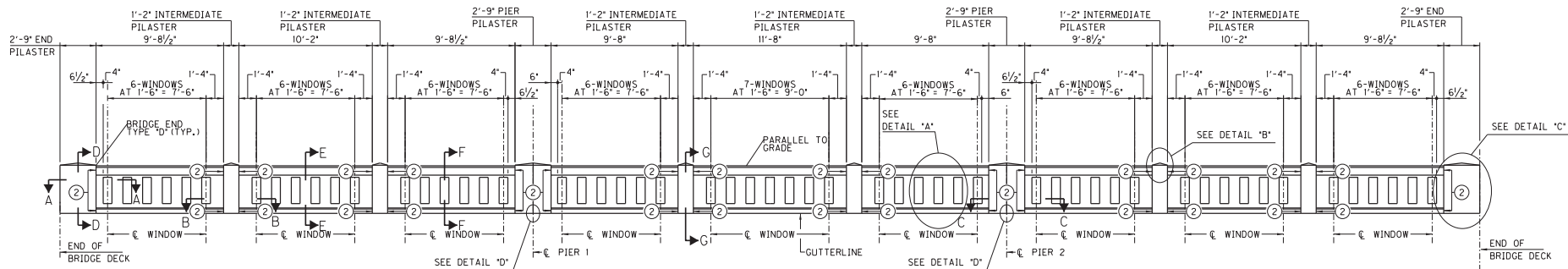
TABLE OF DIMENSION DATA					
Beam Type	Beam Length (feet)	"F"	"G"	"H"	"J"
CB17	36	6	8"	11½"	14"

BAR QUANTITIES TABLE						DESIGN DATA				
Beam Type	Beam Length (feet)	C1	C2	C3	C4				$\Delta \delta$ (in.)	$\Delta \phi$ (in.)
CB17	36	37		2	37				0.2	0.6

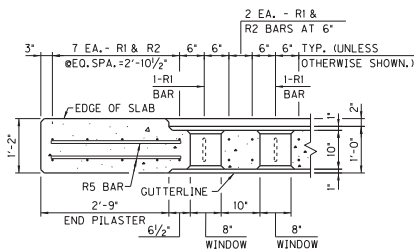


CB17 ELEVATION OF 0° SKEW
(Refer to BDP-003, for skewed details)

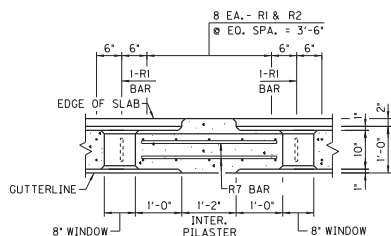
		REVISION		DATE	
DATE: May 24, 2019		CHECKED BY			
DESIGNED BY: NDR		ADW			
DETAILED BY: RJN		NDR			
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS COUNTY HENRY					
ROUTE		CROSSING			
KY 3175		WHITE SULPHUR FORK			
BOX BEAM CB17 DETAILS					
 PREPARED BY STRAND ASSOCIATES®		 BRIDGING KENTUCKY		SHEET NO. S7 DRAWING NO. 2804	



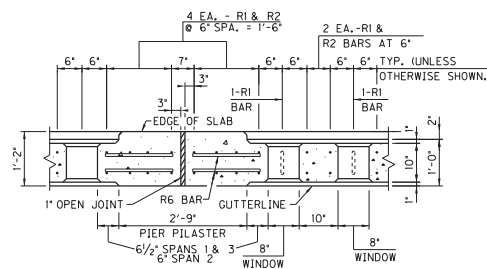
ROADWAY ELEVATION



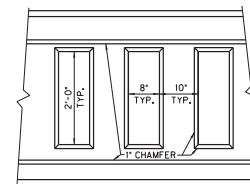
SECTION A-A



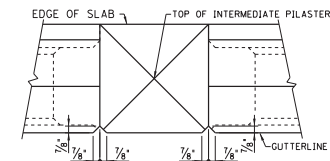
SECTION B-B



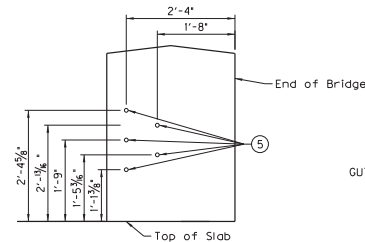
SECTION C-C



DETAIL "A"

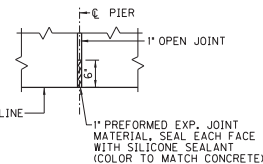


DETAIL "B"



DETAIL "C"

(BOLT HOLES FOR THREE-BEAM GUARDRAIL TRANSITION, TL-3)



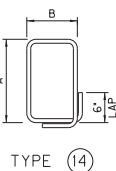
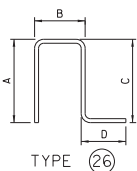
DETAIL "D"

NOTATIONS:

- ① MANDATORY ROUGHENED CONSTRUCTION JOINT.
- ② RUSTICATION GROOVE, SEE DETAIL "B".
- ③ AS AN AID IN SUPPORTING REINFORCEMENT, ADDITIONAL LONGITUDINAL BARS MAY BE USED IN THE SLAB WITH THE APPROVAL OF THE ENGINEER. SUCH BARS SHALL BE FURNISHED AT THE CONTRACTOR'S EXPENSE.
- ④ TOP LONGITUDINAL SLAB BARS MAY BE ADJUSTED Laterally 3" PLUS OR MINUS TO TIE REINFORCING.
- ⑤ FORM 1" HOLES FOR THE 1/4" BOLTS W/ PLASTIC PIPE IN THE PROPOSED BRIDGE ENDS.

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH FT. IN.	LOCATION	A FT. IN.	B FT. IN.	C FT. IN.	D FT. IN.
R1	26	450	5	3 10	EXT. BEAM/RAIL	1 4 0	6 1 4	1 0	
R2	14	340	5	7 9	RAILING	3 2 0	6 1 4	1 0	
R3	Str.	12	7	35 8	TOP OF RAILING				
R4	Str.	12	5	35 8	BOT. OF RAILING				
R5	Str.	16	5	2 11	END PILASTER				
R6	Str.	32	5	1 6	PIER PILASTER				
R7	Str.	48	5	2 10	INTER. PILASTER				



NOTES:
FACE OF RAIL AND PILASTERS SHALL BE VERTICAL.

ALL CONCRETE FOR RAILING SHALL BE CLASS "AA".

RAILING SYSTEM AND PILASTERS TO RECEIVE AN ORDINARY SURFACE FINISH IN ACCORDANCE WITH SECTION 601.03.18 OF THE SPECIFICATIONS. UPON COMPLETION OF THE FINISHING PROCESS ALL SURFACES ARE TO BE COATED IN ACCORDANCE WITH SPECIAL NOTE CONCRETE COATING.

ITEM NUMBER

5-10003

REVISION		DATE
DATE: May 24, 2019	CHECKED BY	
DESIGNED BY: NDR	ADW	
DETAILED BY: RJN	NDR	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS COUNTY HENRY		
ROUTE KY 3175	CROSSING WHITE SULPHUR FORK	
CLASSIC BRIDGE RAILING PREPARED BY STRAND ASSOCIATES		
BRIDGING KENTUCKY (Member / Partner / Supplier)		SHEET NO. 28049