TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS ANDERSON COUNTY BIRDIE ROAD KY 395 OVER BRANCH OF INDIAN CREEK STA. 11+18.64

											 _	 							
	ESTIMATE OF QUANTITIES																		
BID ITEM CODE	08003	08002	08100	08104				23378EC											
BID ITEM	Foundation Preparation	Structure Excavation, Solid Rock	Concrete Class "A"	Concrete Class "AA"	Steel Reinforcement	Steel Reinforcement Epoxy Coated	Armored Edge for Concrete	Concrete Sealing	PPC BOX BEAM CB21	RAIL System Side Mounted MGS									
UNIT	L.S.	C.Y.	C.Y.	C.Y.	LBS	LBS	L.F.	S.F.	L.F.	L.F.									
Abutment 1		94.7	173.1		15988			1678											
⊕ Abutment 2		98.4	173.1		15988			1678											
[]																			
[ž																			
ubsti	ļ			-															
[3]————————————————————————————————————															-	-			
S																			
Superstructure	1			23.2		3856	67.9	1896	375	112.5									
BRIDGE TOTALS	1	193.1	346.2	23.2	31976	3856	67.9	5252	375	112.5									

OLD BRIDGE NUMBER: 003B00041N

	INDEX OF SHEETS
Sheet No.	Description
	Title
	General Notes
	ayout
	Abutment 1
	Abutment 2
	Abutment Bill of Reinforcement
	Box Beam B21 & CB21 Details
	Box Beam General Notes & Reference
	Superstructure
	Construction Elevations
	Roadway Plan
12 F	Roadway Profile
 	
 	
 	
 	
	CDECIAL COSTS
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Special Note for	r Concrete Sealing
opecial frace to	- concrete seaming
	SPECIAL PROVISIONS
	SELCIAL FINOVISIONS
S	TANDARD DRAWINGS
S BDP-001-06	STANDARD DRAWINGS Replaced by sheet S8
S BDP-001-06	STANDARD DRAWINGS Replaced by sheet S8
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ANDERSON KY 395 28845



SPECIFICATIONS: All references to the 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 LOAD: This bridge is designed for 1.25*HL93 (KYHL93) live load.

FUTURE WEARING SURFACE: This bridge is designed for a 15 PSF future wearing surface load.

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

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. Class "A" concrete is to be used in the substructures. 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. Clear distance to face of concrete is 2", unless otherwise noted. Epoxy coat bars designated by suffix (e) in accordance with Section 811.10 of the Standard Specifications. Use stirrup bend diameters for bars designated by suffix (s) in a Bill of Reinforcement.

SHOP DRAWINGS: Submit shop drawings that are required by the plans and specifications directly to the Division of Structural Design. If any changes in the design plans are proposed by a fabricator or supplier, submit those changes to the Department through the Contractor.

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

FOOTING EXCAVATION: Ensure excavation for footings is in accordance with Subsection 603.03.03 of the specifications.

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, back filling, removal of all or parts of existing structures, phase construction, incidental materials, labor,or anything else required to complete the structure.

COFFERDAMS: Cofferdams may be necessary for construction of substructure. Include the cost of this work in the bid for Foundation Preparation.

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

BEVELED EDGES: Bevel all exposed edges $\frac{3}{4}$ ", unless otherwise noted.

CONSTRUCTION NOTE: Sheeting, shoring, cofferdams, and dewatering methods may be required. Include all costs in the price bid for Foundation Preparation.

MASONRY COATING: Contrary to the Specifications, do not apply Masonry Coating. Apply Concrete Sealing in place of Masonry Coating as noted in Concrete Sealer note.

CONCRETE SEALER: All areas detailed in the specifications as requiring masonry coating shall be sealed in accordance with the special note for concrete sealing. The substructures to 6 inches below ground, superstructure deck, barriers, overhangs and approach slabs shall also be sealed as shown herein these plans. Concrete surfaces (except the deck) shall recieve the ordinary surface finish as described in section 601.03.18(A) prior to being sealed.

GENERAL NOTES

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The following abbreviations may have been used in the preparation of these plans:

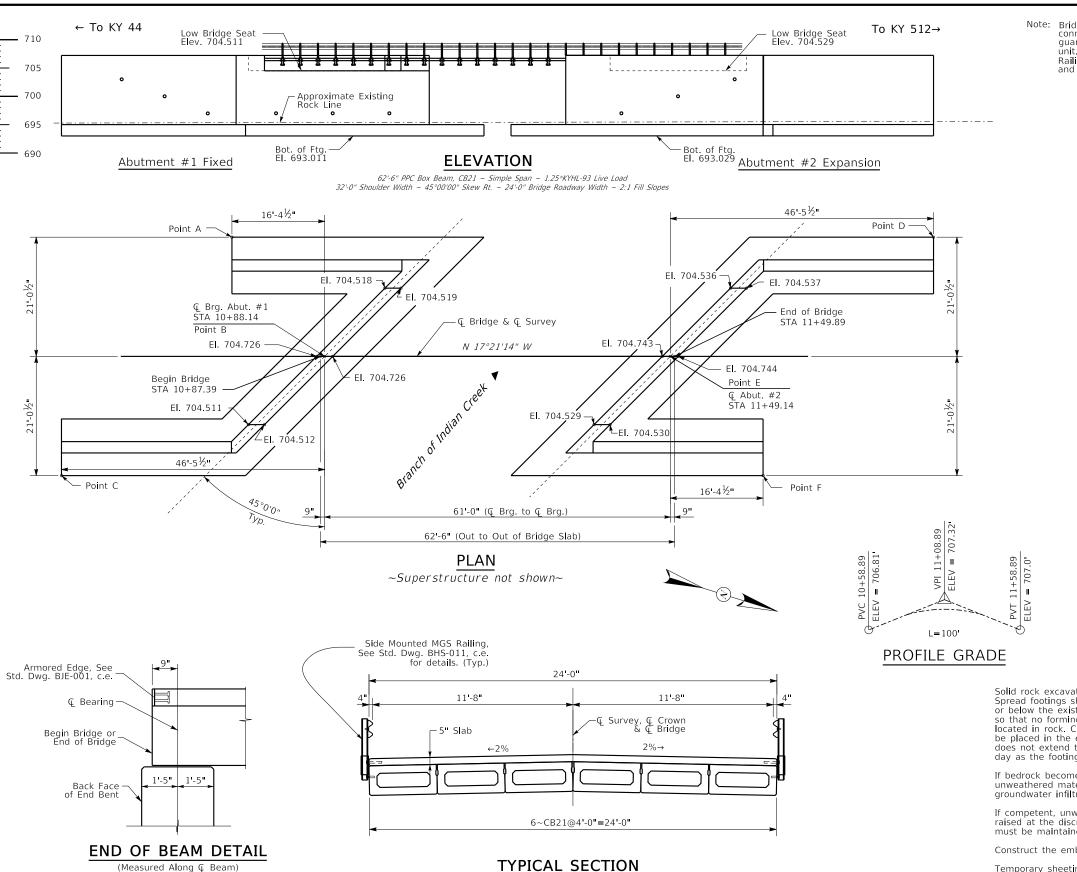
bet.	Between
b.f.	Back Face
BOF	Bottom of Footing
bot.	B o t t om
Brg.	Bearing
C to C	Center to Center
с.е.	Current Edition
С.Ү.	Cubic Yard
Chd.	Chord
CL	Center Line
CI.	Clear
Conc.	Concrete
Cu.	Cubic
Dwg .	Drawing
e f	Each Face
EI.	Elevation
eq.	Equal
Est.	Estimate
Ext.	Exterior
F to F f f	Face to Face Front Face
f.s.	Far Side
fr	Front
ft	Feet
I D	Inside Diameter
in.	Inch
Int.	Interior
L	Left
LBS	Low Bridge Seat
LBS.	Pounds
М	Meter
MPH	Miles per Hour
n.s.	Near Side
O.D.	Outside Diameter
Орр.	Opposite
PC	Point of Curve
Perp.	Perpendicular
P I PPC	Point of Intersection Precast Prestressed Concrete
PPCDU	Precast Prestressed Concrete Deck Unit
PS I	Pounds per Square Inch
PT	Point of Tangent
R	Radius
R	Right
RCBC	Reinforced Concrete Box Culvert
RCDG	Reinforced Concrete Deck Girder
Req'd.	Required
RR	Railroad
Shld	Shoulder
spa.	Spaces
Sta.	Station
Std.	Standard
Str.	Straight
Tan	Tangent
Thru	Through
TOF	Top of Footing
Tot.	Total
Typ.	Typical Vortical
Vert W P	Vertical Working Point
w P Yd	Yard
ıu.	Tutu

Division of Structural Design

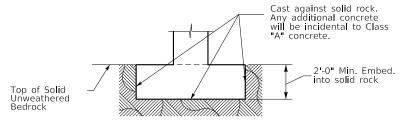
COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	KENTUCKY TRANSPORTATI CABINET

	REVISION	D/
(K)		
KENTUCKY NSPORTATION		
CABINET		

	DATE: October 2023	CHECKED BY	GENERAL NOTES		GENERAL NOTES ROUTE		7-0000	COUNTY OF ANDERSON	
	DESIGNED BY: K. Ee	K. Ee	CROSSING	KY 395	SHEET NO.	DRAWING NUMBER			
<u>)</u>	DETAILED BY: M. BawiThawng	K. Ee	BRANCH OF INDIAN CREEK		S2	28845			



Note: Bridge guardrail is to be connected to approach guardrail to form a continuous unit. For details see Railing System Side Mounted MGS Details and Roadway Details.



Note: If competent, unweathered bedrock is encountered at higher elevations, the spread footings may be raised at the discretion of the Engineer, however, two foot of embedment into unweathered bedrock must be maintained.

Spre	ead Foo	ting	Spread Footing				
Record	Abutm	ent#1	Record	Abutm	ent #2		
Point	Plan Footing Elevation	As-Built Footing Elevation	Point	Plan Footing Elevation	As-Built Footing Elevation		
А	693.011		D	693.029			
В	693.011		Е	693.029			
C	693.011		F	693.029			
Footing is d	locianod for a		Footing is d	locianod for a			

Footing is designed for a maximum pressure of 8 KSF. The allowable bearing capacity is 12 KSF Service. Footing is designed for a maximum pressure of 8 KSF. The allowable bearing capacity is 12 KSF Service.

ANDERSON

28845

The Project Resident Engineer is to record the "As-Built Footing Elevation" taken at the bottom of footing and submit one copy of this sheet to:

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

If the spread footing foundation is stepped due to unsuitable material found at the given elevation, record the location and elevation of the step as well.

FOUNDATION LAYOUT

Solid rock excavation will be required for installation of this structures spread footings. Spread footings shall be embedded into unweathered bedrock a minimum of 2.0 feet and shall be at or below the existing base of footing elevations. All 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. The footing steel and concrete should be placed the same day as the footing excavation is made. Water must be kept out of the footing excavations.

If bedrock becomes softened at bearing elevation, the softened material should be undercut to unweathered material prior to placing the concrete. Seasonal groundwater fluctuations may cause groundwater infiltration into footing excavation, and a dewatering method may be necessary.

If competent, unweathered bedrock is encountered at higher elevations, the spread footings may be raised at the discretion of the Engineer; however, 2.0 foot of embedment into unweathered bedrock must be maintained

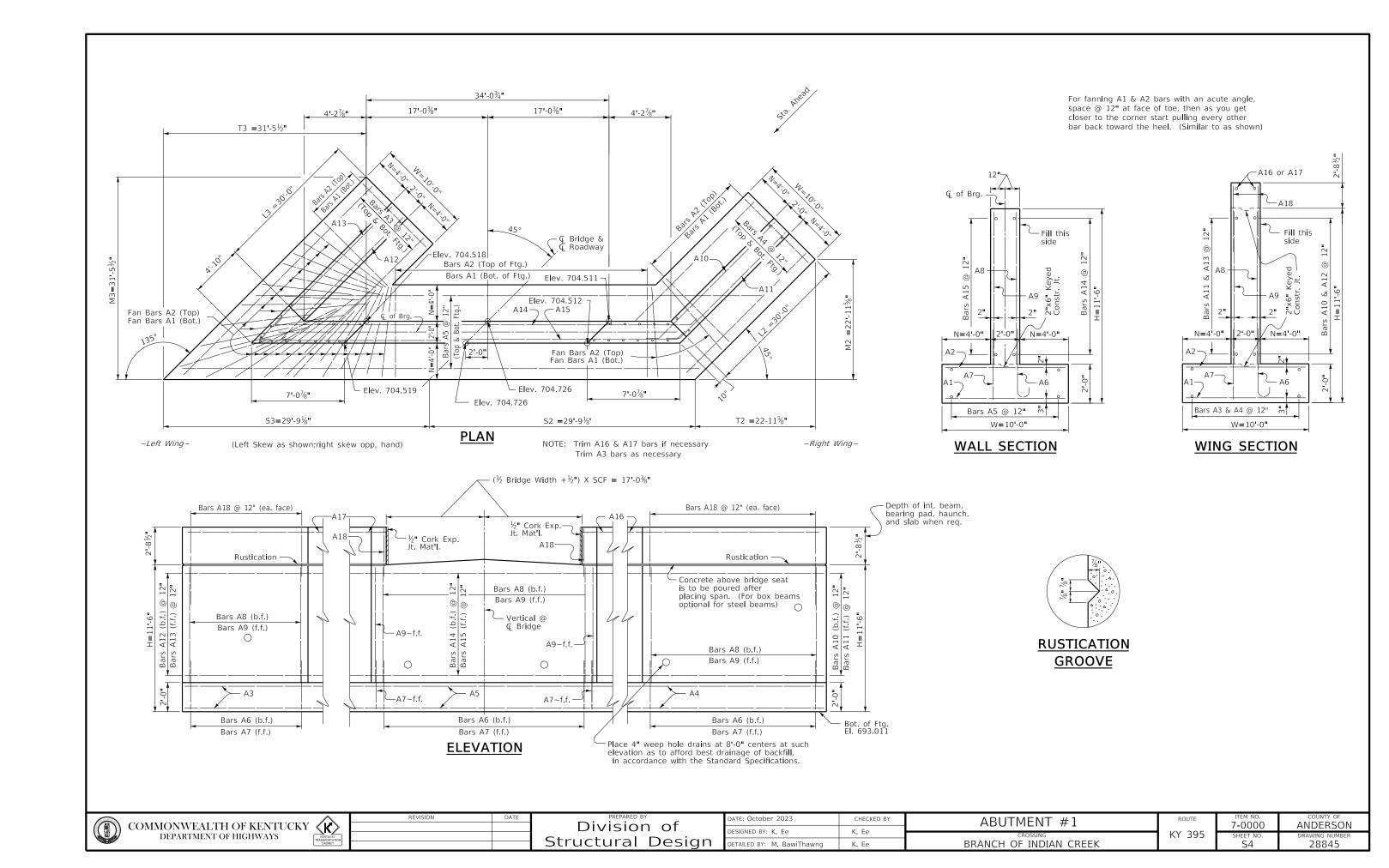
Construct the embankments in accourdance with Special Provision 69.

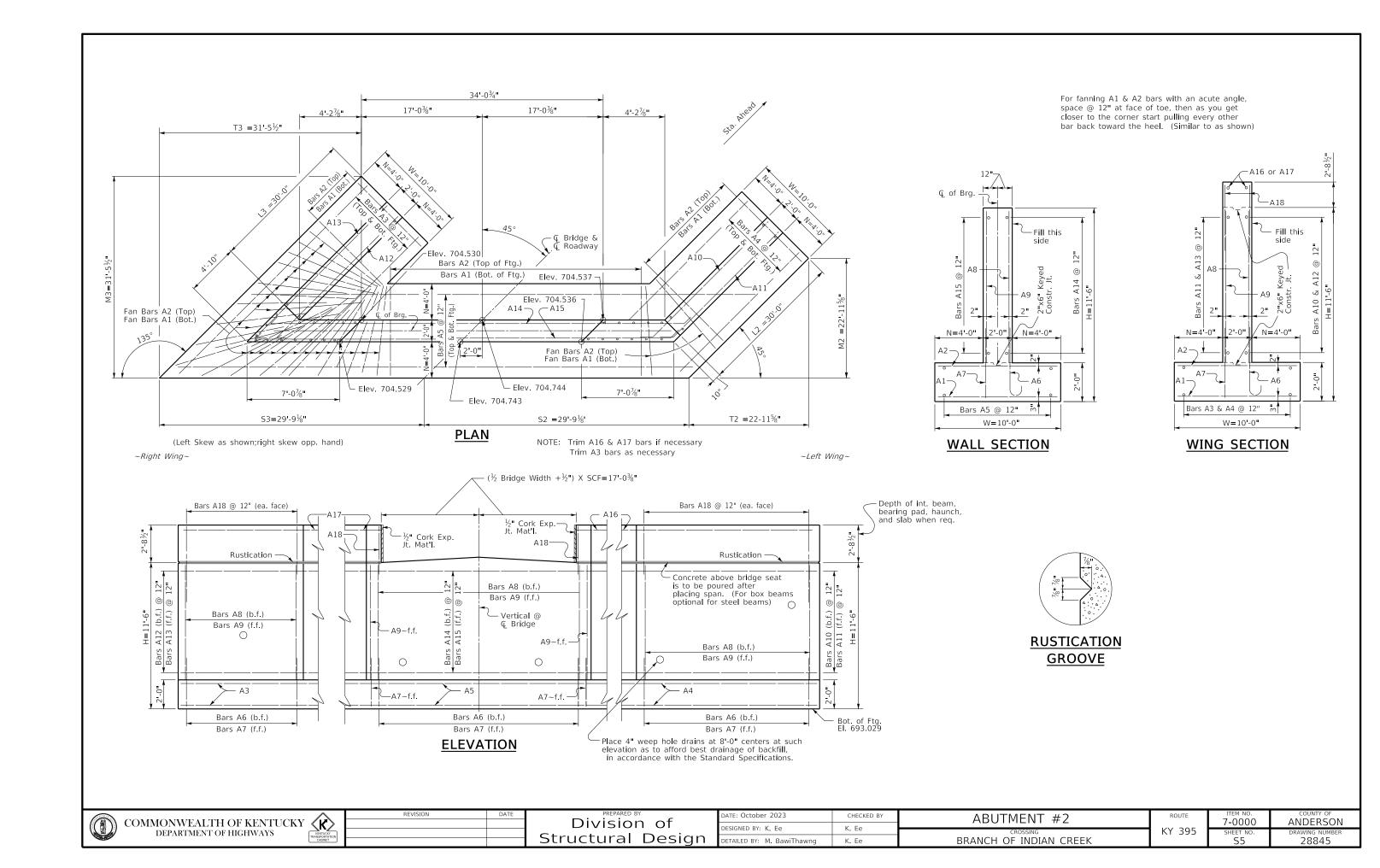
Temporary sheeting, shoring, cofferdams, and a dewatering method may be necessary for installation of the footings and will be incidental to the price bid for Foundation Preparation.

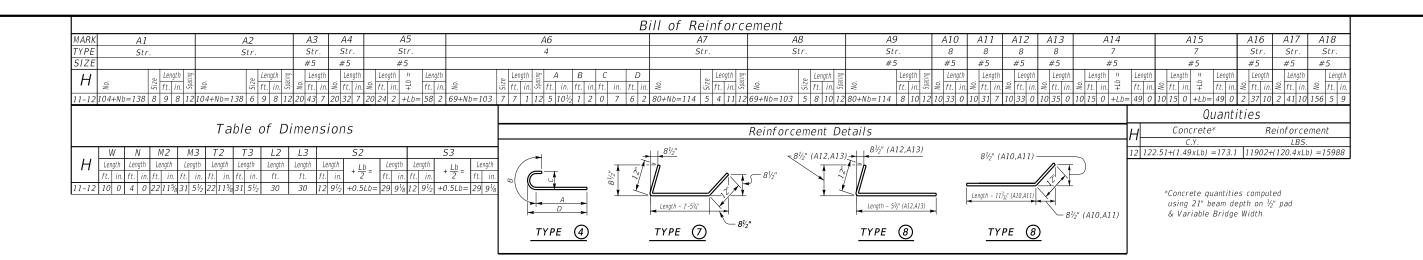


Division of Structural Design

ATE: October 2023	CHECKED BY	LAYOUT	ROUTE	7-0000	Ī
DESIGNED BY: K. Ee	K. Ee	CROSSING	KY 395	SHEET NO.	ŀ
DETAILED BY: M. BawiThawng	K. Ee	BRANCH OF INDIAN CREEK		S3	







ABUTMENT SKEW CORRECTION FACTOR (SCF) = 1.414

NUMBER OF BARS TO ADD (Nb) = Bridge Width (feet) x SCF = 33.936 (round up to nearest whole number)

LENGTH OF ABUTMENT TO ADD (Lb) = Bridge Width (feet) x SCF = 33.936 (convert decimal to architectural)

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, current edition. Dimensions may be adjusted to allow for any out to out bridge width. Abutments are also adequate for Std. Dwg. slabs or steel beam superstructures.

FOUNDATION PRESSURE: Construct abutment footings on solid rock bearing material that can support a pressure of 8000 psf service or 10,800 psf strength factored as recommended by a geotechnical engineer.

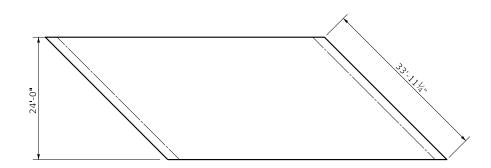
WING LENGTHS: Calculated assuming 21" superstructure depth and stream bank elevation at top of footing.

FOOTING ELEVATION: Construct bottom of footing below the anticipated scour elevation. (This typically entails embedding the footings 1'-0" to 2'-0" into rock and pouring concrete directly against cut rock faces. as recommended by geotechnical engineer.)

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

MATERIAL SPECIFICATIONS:

Concrete, Class "A" = 3500 psi Steel Reinforcement = Grade 60



PLAN OF SUPERSTRUCTURE SLAB

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	KENTUCKY TRAMSPORTATI CABINET

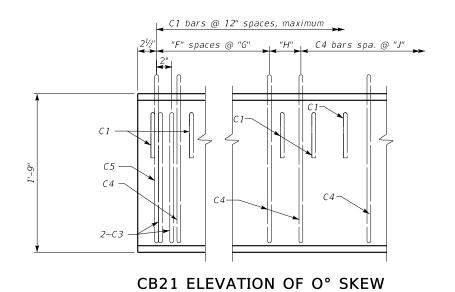
\wedge	REVISION	(
(K)		
KENTUCKY		
CABINET		

PREPARED E	BY
Divisio	n of
Structural	Design

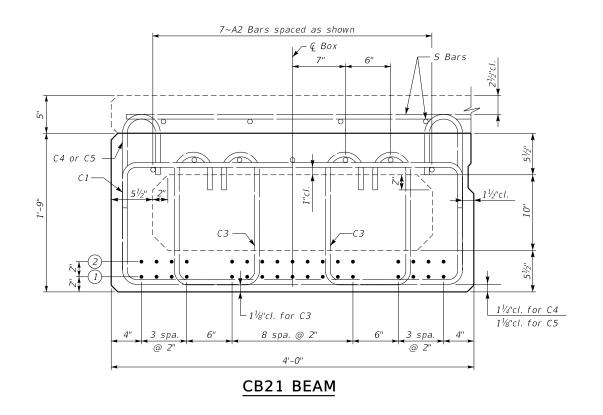
DATE: October 2023	CHECKED BY
DESIGNED BY: K. Ee	K. Ee
DETAILED BY: M. BawiThawng	K. Ee

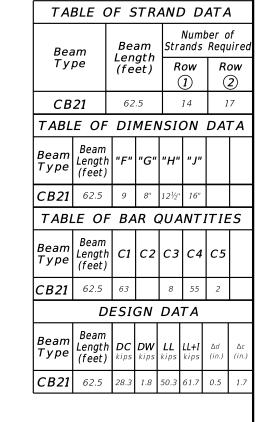
ABUTMENT BILL OF REINFORCEMENT	ROUTE	7-0000
crossing BRANCH OF INDIAN CREEK	KY 395	SHEET NO. S6

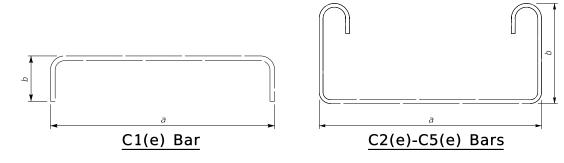
ANDERSON
DRAWING NUMBER
28845



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







Straight Reinforcement					
Mark	ark Size		Length		
A2(E)	#4	Beam Length Minus 1		1inus 3"	
D(E)	#8		2'-0"		
Bent Rei		info	rcem	ent	
Mark	Size	а	b		
C1(e)	#5	3'-9"	6"		
C3(e)	#5	11 ³ /8"	1'-53/8"		

		03(0)	" >	11/8	1-578	
		C4(e)	#4	3'-9"	1'-101/4"	1
		C5(e)	#5	3'-9"	1'-103/8"]
CHECKED BY	BOX BEAM B21 & CB21 DETAILS	ROUTE	7-000		COUNTY OF ANDERSON	1
K. Ee	20,7 22,11 221 6 3221 221,123		7-000	,0	ANDERSON	
K. Le	CROSSING	KY 395	SHEET N	10.	DRAWING NUMBER	1



	REVISION	DA
(K)		
KENTUCKY		
CABINET		

Division of	
Structural Desigr	1

TE: October 2023	CHECKED BY	BOX BEAM B21 & CB21 DETAILS	
SIGNED BY: K. Ee	K. Ee	CROSSING	
TAILED BY: M. BawiThawng	K. Ee	BRANCH OF INDIAN CREEK	

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,

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

DESIGN LOAD DISTRYBUTION: CONTINITY TO AASHTO WRFD Bridge Design Specifications, the design moment(is 0.5 lanes and shear distribution is 0.5 lanes for all beams.

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

SUBSTRUCTURE DESIGN LOADS: Unfactored design reaction forces per beam end.

DC (kips): Beam, Slab (if applicable), and side mounted MGS 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 PSIfor Prestressed Girder Concrete (Typ. U.N.O.) F'C = 7000 PSIF'CI = 5500 PSI F'C = 4000 PSI for Class "AA" Concrete F'S = 270000 PSIfor Prestressing Steel

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'Cl 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 3/4".

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 $5\frac{1}{2}$ " 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

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.

SIDE MOUNTED MGS RAILING SYSTEM: Furnish this material per these specifications.

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TTEM	DESCRIPTION	MATERIAL SPECIFICATION	COATING SPECIFICATION
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Post	₩6×25	ASTM A36 or A572	A123
Channel	C7 x 9.8	ASTM A36 or A572	A123
Plate	½"x7"	ASTM A36 or A572	A123
Tubing	8x4x0.1875	ASTM A500 or A501	A123
Bolts	5/8"	ASTM A307	A153
Nuts	for 5%"	ASTM A563, Grade A or better	A153
Washers	for 5%"	ASTM A563, Grade A or better	A153
Stud	11/4"	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	3/8"	ASTM A510 (1018 Steel)	B633, Type II, Class 25
Nut	for 1½" Bolt	ASTM A108 (12L14 Steel)	B633, Type II, Class 25
Nut	for 1½" Stud	ASTM A325M	B633, Type II, Class 25
Washers	for 1½" Stud	ASTM A325M	B633, Type II, Class 25

Note: Changes to Standard have been clouded.

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

STANDARD DRAWINGS

BHS-007 Railing System Type II (See Side Mounted MGS Railing Std. Details)

BJE-001 Armored Edge & Neoprene Joints

RBR-001 Steel Beam Guardrail

RBR-005 Guardrail Components

SPECIAL NOTES

for Corrosion Inhibitors



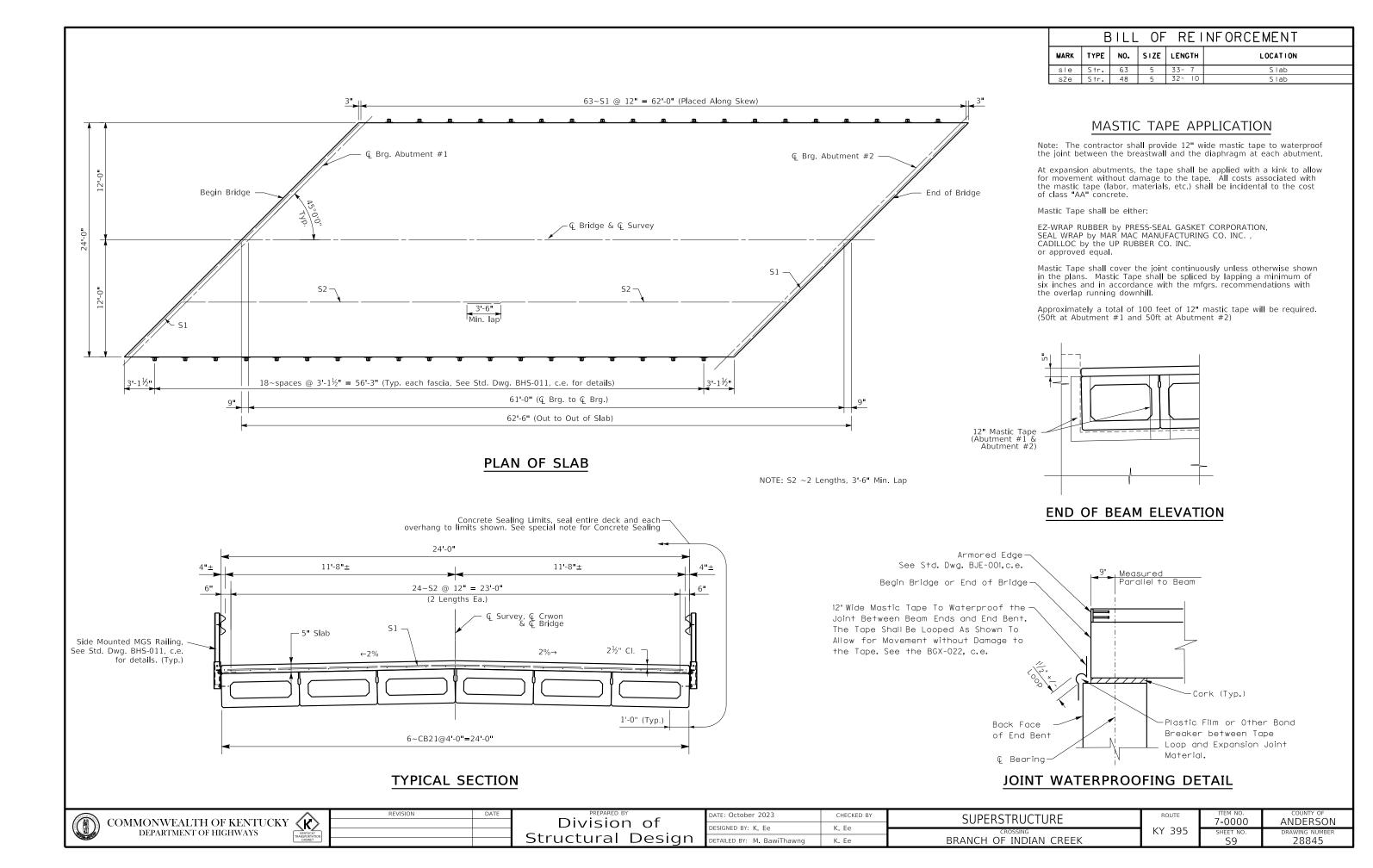


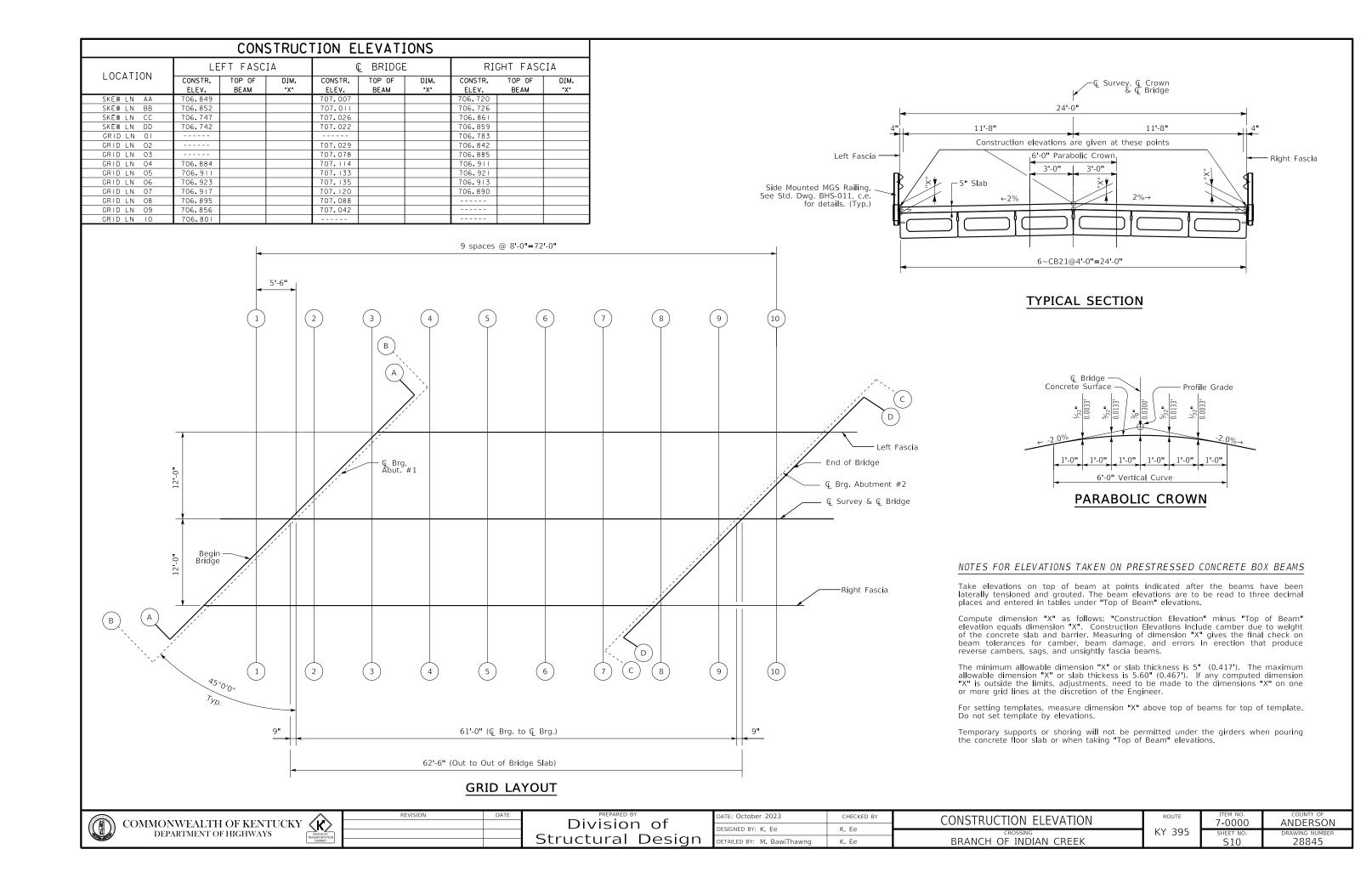


DATE: October 2023	CHECKED BY
DESIGNED BY: K. Ee	K. Ee
DETAILED BY: M. BawiThawng	K. Ee

E R	BOX BEAM GENERAL NOTES & REFERENCE
KY	CROSSING RRANCH OF INDIAN CREEK

:	ROUTE	TEM NO. 7-0000	COUNTY OF ANDERSON
	KY 395	SHEET NO. S8	drawing number 28845





CENTERLINE CONTROL POINTS

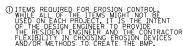
POINT	State Plane Coordinates				
	NORTH (Y)	EAST (X)	STATION		
POB	3893744.51	5138560.18	10+00.00		
PC	3893896.29	5138512.75	11+59.01		
PI	3893912.68	5138507.63	11+76.19		
PT	3893928.69	5138501.39	11+93.36		
POE	3893968.38	5138485.93	12+35.95		

COORDINATE CONTROL POINTS

POINT	Proj	ect Coordinates	STATION and OFFSET	
POINT	NORTH (Y) EAST (X) ELEV. (Z)	STATION and OFFSET		
CP 100	3893901.23	5138525.28	705.68	11+59.96, 13.44 Right
CP 101	3893849.32	5138562.86	698.62	10+99.23, 33.82 Right
CP 102	3893866.55	5138495.41	698.17	11+35.80, 25.42 Left
CP 103	3893928.75	5138490.64	706.17	11+97.32, 9.99 Left

GENERAL SUMMARY

ITEM	DESCRIPTION	UNIT	TOTAL PROJECT
2014	BARRICADE-TYPE III	EACH	2
2159	TEMP DITCH ①	LF	118
2351	GUARDRAIL-STEEL W BEAM-S FACE	LF	100
2367	GUARDRAIL END TREATMENT TYPE 1	EACH	4
2399	EXTRA LENGTH GUARDRAIL POST	EACH	20
2569	DEMOBILIZATION	LS	1
2575	DITCHING AND SHOULDERING	LF	300
2585	EDGE KEY	LF	36
2650	MAINTAIN & CONTROL TRAFFIC	LS	1
2697	EDGELINE RUMBLE STRIPS	LF	243
2701	TEMPORARY SILT FENCE ①	LF	118
2703	SILT TRAP TYPE A ①	EACH	1
2704	SILT TRAP TYPE B ①	EACH	1
2705	SILT TRAP TYPE C ①	EACH	1
2706	CLEAN SILT TRAP TYPE A ①	EACH	1
2707	CLEAN SILT TRAP TYPE B ①	EACH	1
2707	CLEAN SILT TRAP TYPE C ①	EACH	1
2726	STAKING	LS	1
2731	REMOVE STRUCTURE	LS	1
3304	BRIDGE OVERLAY APPROACH PAVEMENT	SQ YD	263
5952	TEMP MULCH ①	SQ YD	480
5953	TEMP SEEDING AND PROTECTION $lacktriangle$	SQ YD	360
5963	INITIAL FERTILIZER ①	TON	0.1
5964	MAINTENANCE FERTILIZER ①	TON	0.1
5985	SEEDING AND PROTECTION ①	SQ YD	420
6514	PAVE STRIPING-PERM PAINT-4 IN (YELLOW)	LF	436



PI STA 11+76.19 $\Delta = 03^{\circ}56'08"$ LT T = 17.18' R = 500.00' E = 0.30'

12+00

BRIDGE APPROACH OVERLAY-Exist. R/W EDGE KEY--EDGE KEY Exist. R/W △CP 101

BRIDGE APPROACH OVERLAY-

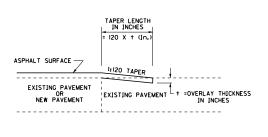
BRIDGE OVERLAY APPROACH PAVEMENT: The contractor shall provide a minimum of 8" DGA, 2-4" lifts of asphalt base, and 1.5" asphalt surface with tack as required by Current Specifications where full depth pavement is required near ends of

Elsewhere, the contractor shall provide surface as necessary to provide a smooth transition from end of bridge to existing pavement. Pavement limits are shown in the plans however, pavement work and limits are at the direction of the Engineer.

ON-SITE INSPECTION: Each contractor submitting a bid for this work shall make a thorough inspection of the project sire prior to submitting a bid and shall be thoroughly familiarized with existing conditions so that work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made. Any claims resulting from site conditions will not be honored by the Department of Highways.

UTILITIES: The contractor shall be responsible for calling 811 (BUD) and/or all local utility companies as required for utility locating services prior to beginning work. The state shall not be liable for any utilities damaged during work.

MAINTENANCE OF TRAFFIC: The contractor shall be responsible for all maintenance and control of traffic in accordance with Section 112 of the Specificaitons.



EDGE KEY DETAIL

COMMONWEALTH OF KENTUCKY (K) DEPARTMENT OF HIGHWAYS

Division of Structural Design

CHECKED BY ROADWAY PLAN DESIGNED BY: DETAILED BY: Branch of Indian Creek

7-0000 ANDERSON KY 395 28845

