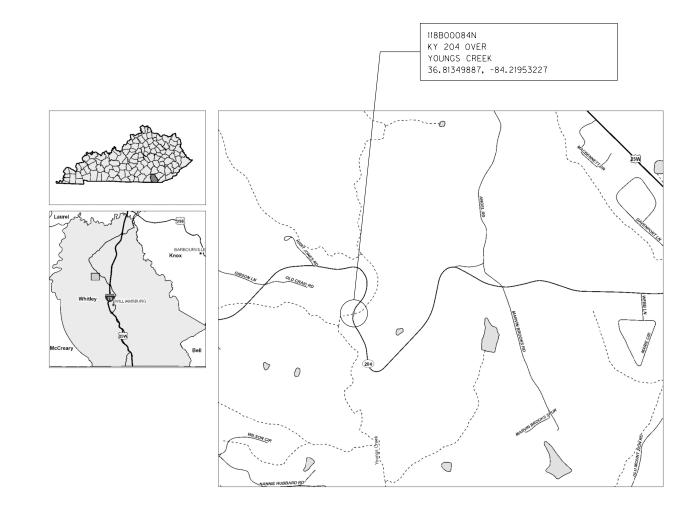
KENTUCKY TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS BRIDGE REHABILITATION PLANS



LOCATION MAP

	INDEX OF SHEETS								
Sheet No.	Description								
SI	Title Sheet and Location Map								
S2	General Notes								
S3	Plan and Elevation Typical Sections Abutments								
S4									
S5									
S6	Pier								
S7	CB17×36 Box Beam Details								
S8	Environmentally-Cleared Area								
	SPECIAL NOTES								
for Contr	act Completion Date and Liquidation								
Dama	ages on Bridge Repair Contracts								
for Traff	ic Control on Bridge Repair Contracts								
	g Bridge Overlay, Approach Pavement								
	ete Sealing								
for Erosio									
	the Side Drainage								
	onal Environmental Commitments								
	anding State Resource Water								
for Tree	Clearing Restrictions								
	ACTIVE SEPIAS								
	ACTIVE SEPIAS								
	STANDARD DRAWINGS								
BDP-001-0	6 Box Beam General Notes and References								

	STANDARD DRAWINGS
BDP-001-06	Box Beam General Notes and References
BDP-002-03	Box Beam Bearing Details
BDP-003-03	Box Beam Miscellaneous Details
BDP-004-04	Box Beam Tension Rod Details
BDP-007-05	Box Beam BI7 and CBI7 Details
BGX-006-10	Stencils for Structures
BHS-011	Railing System Side Mounted MGS Details
RB1-001-12	Typical Guardrail Installations
RBR-001-13	Steel Beam Guardrail ("W" Beam)
RBR-005-11	Guardrail Components
RBR-010-06	Guardrail Terminal Sections
RBR-015-06	Steel Guardrail Posts
RBR-018	Guardrail System Transition
RBR-050-08	Guardrail End Treatment Type 7
RBR-055-01	Delineators for Guardrail

SPECIFICATIONS

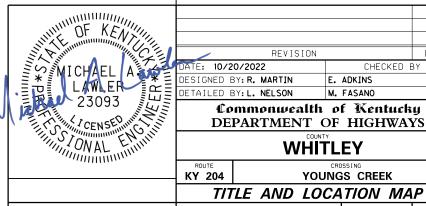
2019 Standard Specifications for Road and Bridge Construction.

ASHTO LRFD Bridge Construction Specifications with

DATE

28365

CHECKED BY



BRIDGE NUMBER

Stantec 118B00084N

Σ

GENERAL NOTES

A. 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 current edition of the AASHTO LRFD Bridge Construction Specifications, with

DESIGN LOAD: This superstructure is designed for KY-HL93 Live Load, (i.e. 1.25xAASHTO HL93 live load). This bridge is designed for a future wearing surface of 15 psf.

<u>DESIGN METHOD</u>: 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

ON-SITE INSPECTION: Each Contractor submitting a bid for this work shall make a thorough inspection of the project site 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. All claims resulting from the site conditions will not be honored by the Department of Highways.

<u>VERIFYING FIELD CONDITIONS</u>: The Contractor is not to order any materials, produce any shop drawings, or begin any construction activities until after verifying dimensions and conditions in the field. Dimensions and details shown on these Plans in relation to the existing structure shall be considered approximate. Existing plans, if available, shall not be considered accurate. It shall be the Contractor's responsibility to verify such dimensions and details in the field and to notify the Project Engineer and the Designer of any differences. Failure to notify either may delay drawing and other approvals. Thereafter make the necessary approved adjustments prior to construction or ordering materials. All Specification requirements shall remain in effect. Any variations shall not be cause for additional compensation fo a change in the scope of work; however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work. In addition, the overrun and underrun formulas may be applied to appropriate repairs provided that the requirement of Article 104.02.02 of the Standard Specifications is satisfied. The cost of all labor, equipment, surveying, and materials necessary to verify field dimensions shall be included in the lump sum price for "Staking".

PLANS OF EXISTING STRUCTURE: Plans of the existing structure are not available.

CONSTRUCTION LOAD: The Contractor shall abide by the posted bridge limits. Storage of material on the bridge is prohibited.

Construction Identification: The names of the Prime Contractor and any Subcontractor shall be imprinted in the concrete with one 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. See Standard Drawing BGX-006, c.e.

 $\underline{\textit{UTILITIES}}\textsc{:}$ Before beginning work, locate all existing utilities. Consider location of utilities shown on the drawings to be approximate and for informational purposes only. The Department does not warrant the locations and assumes no responsibility for the accuracy or completeness. The Contractor must make his own determination. Except as shown on the Plans, work around and do not disturb existing utilities.

DAMAGE OUTSIDE ENVIRONMENTALLY-CLEARED AREA: Any area used outside the environmentally-cleared area shall obtain full environmental approvals prior to use. Once cleared, any area that is disturbed outside of the modified environmentally-cleared area during the life of the project shall be repaired by the Contractor at his expense, should any damage result from the Contractor's actions.

DAMAGE TO THE STRUCTURE: The Contractor shall bear full responsibility and expense for repair of any and all damage to the structure, should such damage result from the Contractor's actions. The Contractor is completely responsible for the stability of the structure from the time of mobilization until after the bridge has been reopened to normal traffic following completion of all work required in the Contract. After completion of all operations, the structure and site shall be left in a condition that is in accordance with Section 105.12 of the Specifications.

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

REMOVE SUPERSTRUCTURE: This pay item for "Remove Superstructure" shall consist of the removal of the superstructure (beams), and partial removal of the abutments and pier as shown in the Plans. Portions of the existing abutments and pier shall remain in place to be reused in the rehabilitated structure. Care shall be exercised not to damage areas of remaining concrete or reinforcing steel during concrete removal operations.

Remove concrete by means of approved pneumatic hammers employing pointed and blunt chisel tools. Hydraulic hoe-ram type hammers will not be permitted. The weight of the hammer shall not be more than 35 pounds for removal within 18 inches of portions to be preserved. Outside the 18 inch limit, the Contractor may use hammers not exceeding 90 pounds upon the approval of the Engineer. Do not place pneumatic hammers in direct contact with reinforcing steel that is to be retained. Care shall be taken to not damage bond to adjacent non-exposed reinforcing steel during concrete removal processes. The perimeter of all areas where concrete is removed shall be tapered at an approximately 45° angle, except that the outer edges of all chipped areas shall be saw cut to minimum depth of linch to prevent feather edging unless otherwise approved by the Engineer. After all concrete has been removed, the repair surface shall be prepared by abrasive blast cleaning. Abrasive blast cleaning shall remove all fractured surface concrete and all traces of any unsound material or contaminants such as oil, grease, dirt, slurry, or any materials which could interfere with the bond of freshly placed concrete. The Contractor shall dispose all removed material off state right of way in an approved site.

WELDING REINFORCEMENT: The welding and welding material shall conform to the "Recommended Practices for Welding Reinforcing Steel" American Welding Society Specifications Current Edition. No direct payment shall be made for welding or weld material, but the cost of these items shall be included in the unit price bid for the repair being completed.

 $\underline{\mbox{DISPOSAL}}$ OF MATERIALS: All materials and debris removed from or beneath the bridge shall become the property of the Contractor and shall be removed from the right-of-way.

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 for the work involved and otherwise considered incidental to the Contract. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of the existing structure, phase construction, incidental materials, labor, or anything else required to complete the structure.

BEFORE YOU DIG: The Contractor shall be responsible for all requirements and conformation with the Underground Facility Damage Prevention Act of 1994. The Contractor will be responsible for locating any utilities on this project. All underground utilities shall be located prior to construction. Any utilities disturbed or damaged as a result of the Contractor's operations will be repaired to the satisfaction of the utility owner at the Contractor's expense. The Contractor is advised to call (800) 752-6007 a minimum of two working days prior to excavation for information on the location of some, but not necessarily all underground utilities.

B. GENERAL NOTES REHABILITATION PROJECTS MATERIALS FOR DESIGN SPECIFICATIONS:

For Class "A" Concrete: F'C = 3.500 psiFor Class "AA" Concrete: F'C = 4,000 psiFor Class "M" Concrete: F'C = 4,000 psiFY = 60,000 psi For Steel Reinforcement:

The Specifications, Current Edition, as designated below shall govern the following materials furnished:

Specification <u>Material</u>

AASHTO M270 or ASTM A709, Grade 50 Structural Steel

Bolts F3125 Grade A325

C1107

LEAD PAINT (RESIDUAL): The Contractor is advised to take all necessary protective measures, including worker safety and environmental regulations, when performing surface preparation and/or removal work. The Department will not consider any claims based on residual lead paint.

CONCRETE: Class "AA" Concrete is to be used throughout the superstructure and Class "A" concrete is to be used in the substructure. Prestressed beam concrete shall be in accordance with the plans and specifications.

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

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacina 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.

EXISTING STEEL REINFORCEMENT: The cost of cutting, bending, and cleaning existing steel reinforcement shall be incidental to the repair item being completed.

<u>BEVELED EDGES</u>: Bevel all exposed edges $\frac{3}{4}$ " unless otherwise

 $\underline{\text{CONCRETE SEALING:}}$ Apply concrete sealing in accordance with the Special Note for Concrete Sealing.

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.

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.

SHOP DRAWINGS: The fabricator shall submit all required shop plans, by email to SHOP_XXXXxxxxxN@docs.e-Builder.net, for review. These submissions shall depict the shop plans in .PDF format, as either II"xI7" 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 Bridge Program GEC 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 Bridge Program GEC 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 XXXXxxxxxN refers to the Bridge ID number which is located on the Title Sheet, Sl of the Bridge Plans. Example: SHOP_042B000191N@docs.e-Builder.net

C. JOINT WATERPROOFING AT ABUTMENTS

The joint between the abutment seats and superstructure and between the abutment wings and superstructure shall be waterproofed as detailed on these Plans.

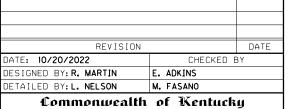
Mastic Tape used to seal joints shall meet the requirements of ASTM C-877 Type I, II, or III. The joint is to be covered with 12-inch wide mastic tape. Prior to application, the joint surface shall be clean and free of dirt, debris, or deleterious material. Primer, if required by the tape manufacturer,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

Mastic Tape shall be either: EZ-WRAP RUBBER by PRESS-SEAL GASKET CORPORATION, SEAL WRAP by MAR MAC MANUFACTURING CO. INC., CADILLOC by UP RUBBER CO. INC. or an approved equivalent.

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

Additionally, the Contractor shall place Mastic Tape along vertical joints between the Concrete Box Beams. The vertical joints should be covered after the abutment seat interface, in the same manner as outlined above.

The cost of this work, including all materials, labor, equipment, tools and incidentals necessary for furnishing and installing Mastic Tape shall be considered incidental to the unit price bid for the Concrete Box Beams and no separate measurement or payment shall be made.



DEPARTMENT OF HIGHWAYS

WHITLEY

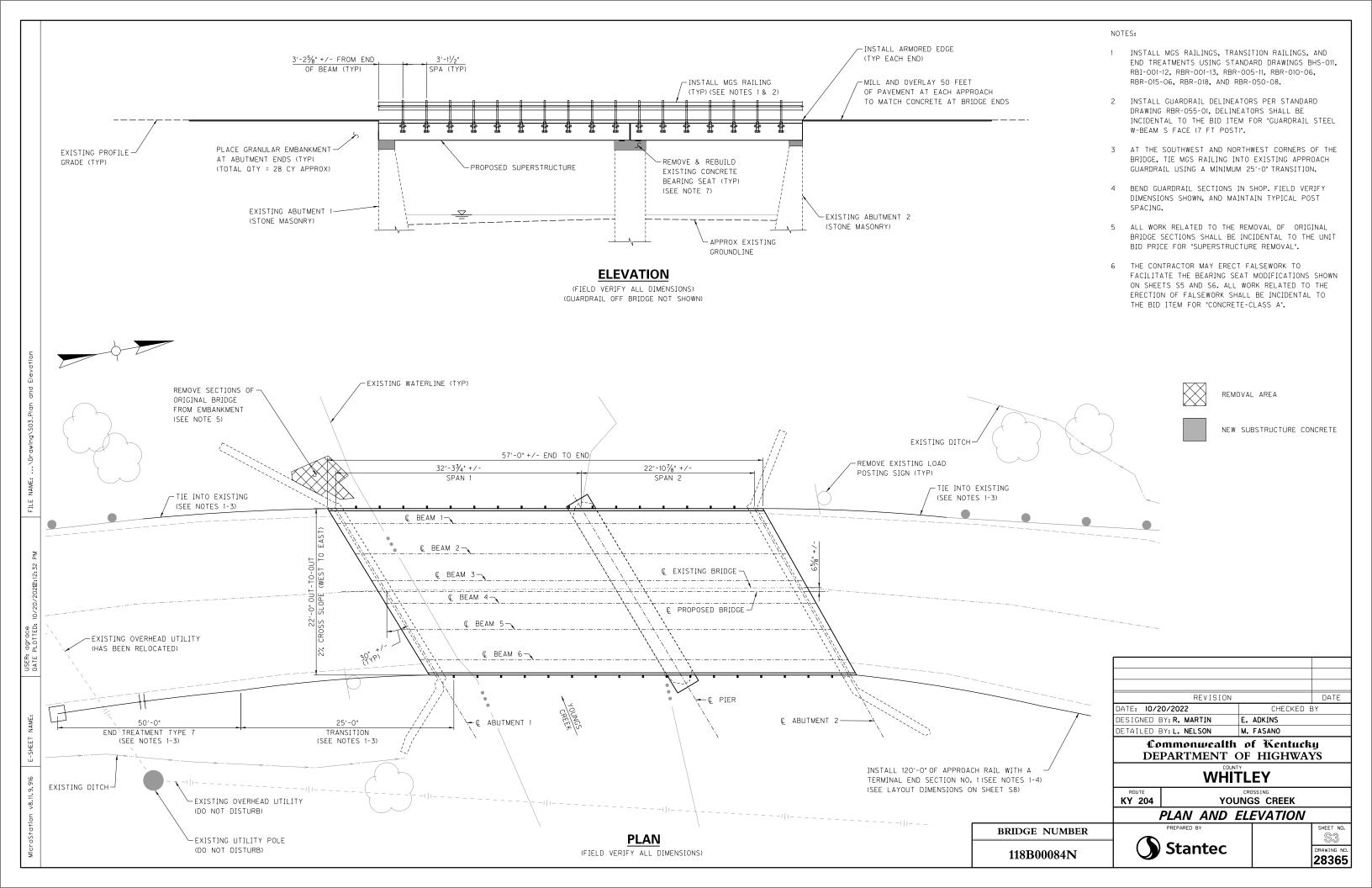
KY 204

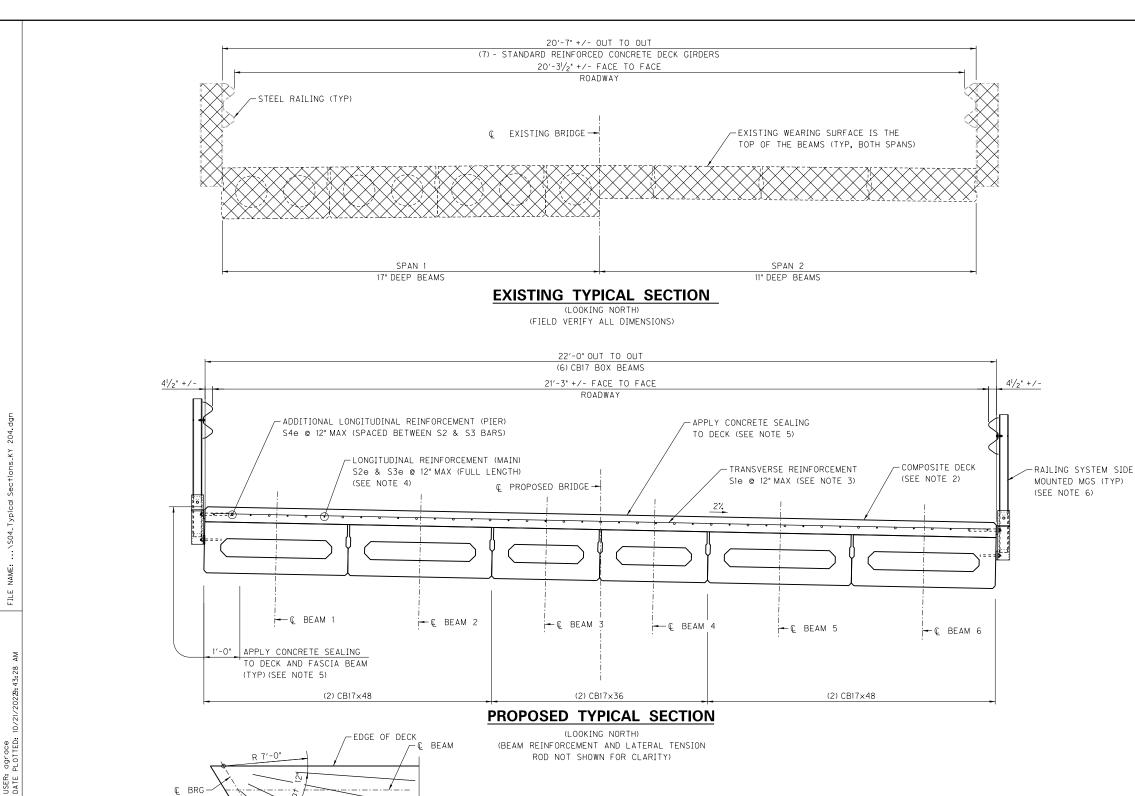
YOUNGS CREEK GENERAL NOTES

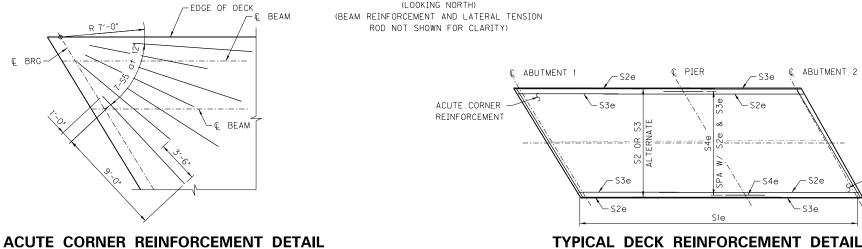
BRIDGE NUMBER 118B00084N



SHEET NO. $\mathbb{S}2$ 28365







(Sie - Sie NOT SHOWN FOR CLARITY)

- REPLACE EXISTING SUPERSTRUCTURE WITH (6) PRECAST BOX BEAMS AND COMPOSITE DECK, MODIFYING THE SUBSTRUCTURE AS SHOWN ON SHEETS S5 AND S6.
- 2 COMPOSITE DECK THICKNESS TO BE 5" THROUGHOUT.
- TRANSVERSE REINFORCEMENT SHALL BE PLACED PARALLEL TO THE SUBSTRUCTURE UNITS AND MAINTAIN A $2^{1}\!/_{2}$ " CLEAR COVER WITH THE TOP OF THE DECK.
- 4 LONGITUDINAL REINFORCEMENT TO BE LAPPED A MINIMUM OF
- 5 APPLY CONCRETE SEALING TO THE PROPOSED SUPERSTRUCTURE, PER SPECIAL NOTE.
- 6 INSTALL DRIP STRIPS ALONG BOTH SIDES OF THE BRIDGE, PER SPECIAL NOTE.
- 7 PLACE THE ACUTE CORNER REINFORCEMENT BENEATH THE LONGITUDINAL AND TRANSVERSE REINFORCEMENT IN THE DECK.

BOX BEAM NOTES:

- CB17×48 BOX BEAMS SHALL BE FABRICATED IN ACCORDANCE WITH STANDARD DRAWING BPD-007-05. THE BEAM LENGTH SHALL MATCH EXISTING CONDITIONS BUT THE STRAND PATTERN SHALL CORRESPOND TO A CB17×48 WITH A 36' LENGTH AND THE SHEAR REINFORCEMENT SHALL CORRESPOND TO A CB17×48 WITH A 44' LENGTH.
- 2 CB17×36 BOX BEAMS SHALL BE FABRICATED IN ACCORDANCE WITH BEAM DETAILS SHOWN ON SHEET ST.
- 3 ALL BOX BEAMS SHALL BE INSTALLED AS SHOWN AND IN COMPLIANCE WITH STANDARD DRAWINGS BDP-001-06, BDP-002-03, BDP-003-03, BDP-004-04, AND BHS-011.

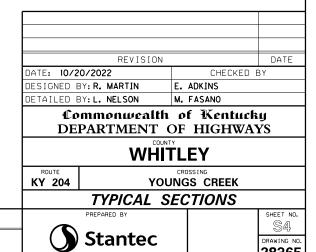


- ACUTE CORNER REINFORCEMENT

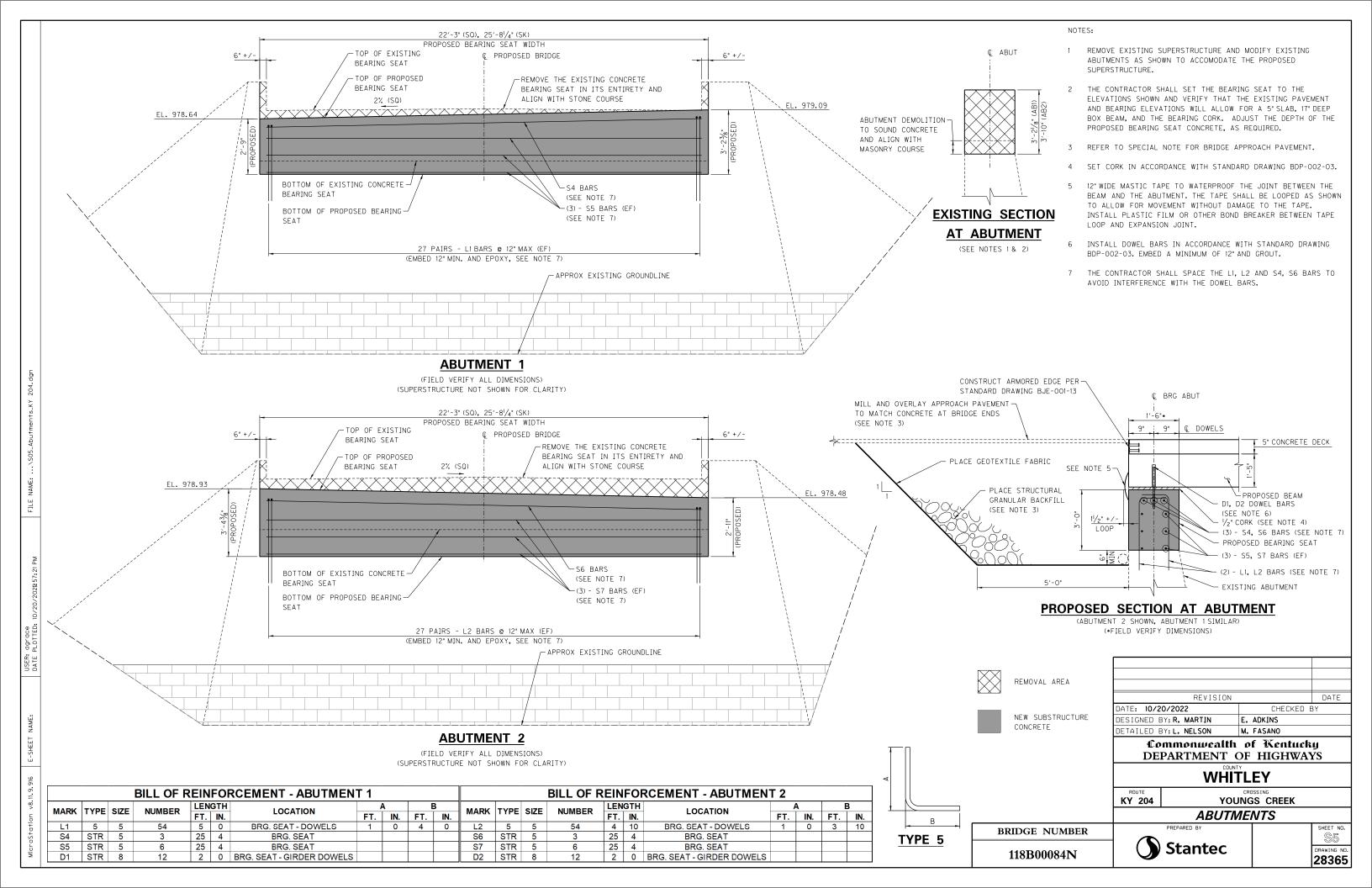
BRIDGE NUMBER

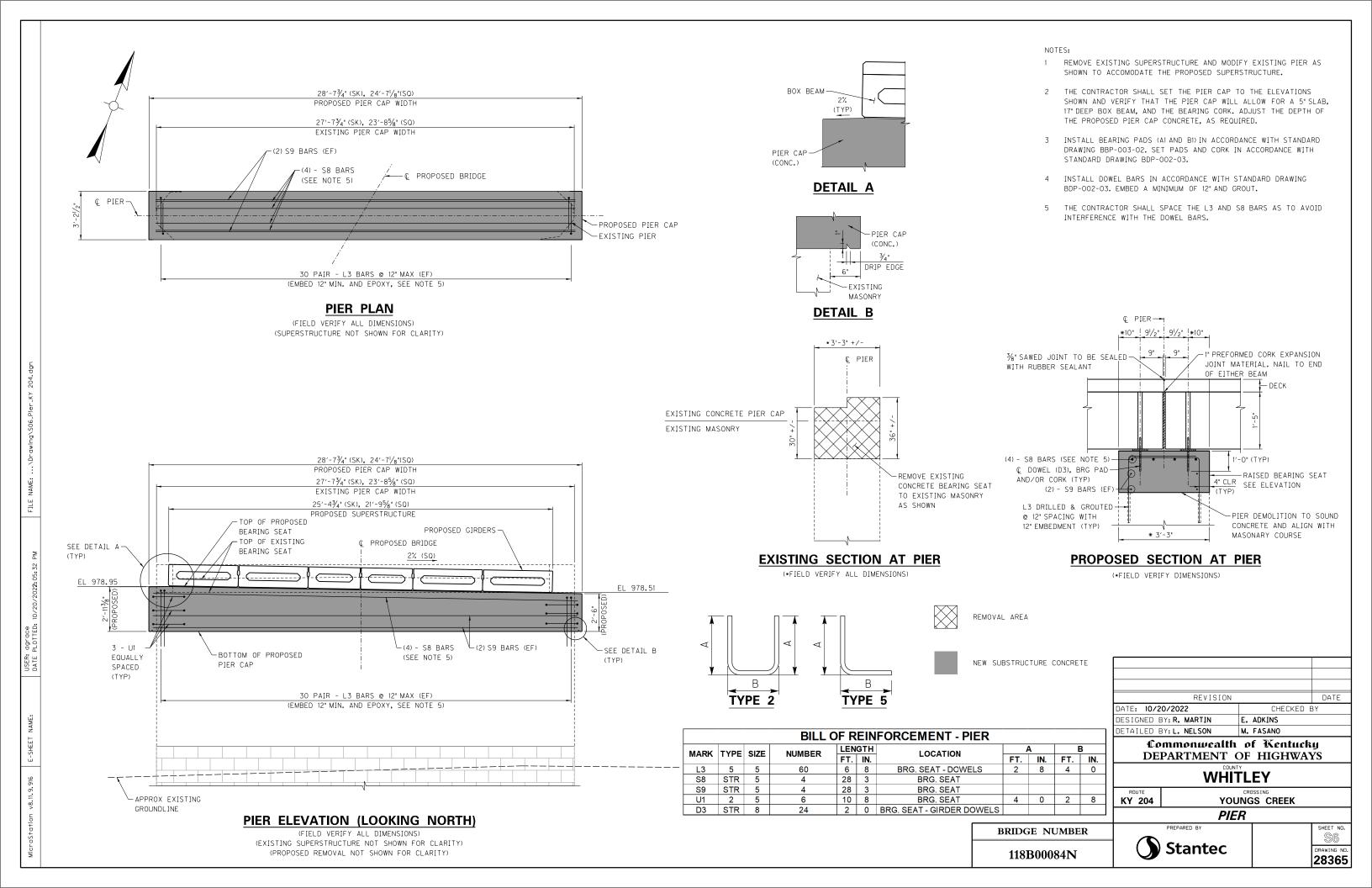
118B00084N

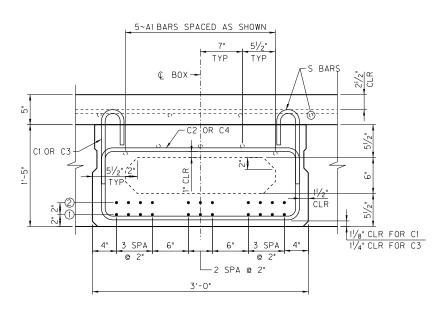
BILL OF REINFORCEMENT										
MARK	TYPE	CIZE	NUMBER	LEN	GTH	LOCATION				
WAKK	ITE	SIZE	NOMBEK	FT.	LOCATION					
S1e	STR	5	58	25	0	DECK - TRANSVERSE				
S2e	STR	5	23	40	0	DECK - LONGITUDINAL (MAIN)				
S3e	STR	5	23	20	0	DECK - LONGITUDINAL (MAIN)				
S4e	STR	5	22	8	0	DECK - LONGITUDINAL (PIER)				
S5e	STR	5	14	10	0	DECK - ACUTE CORNER				



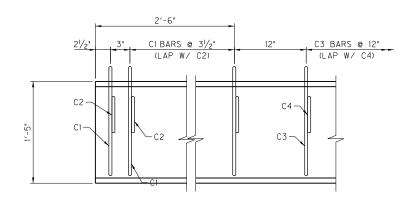
28365



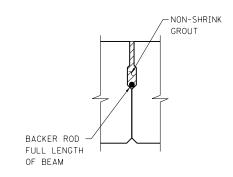




CB17 BEAM



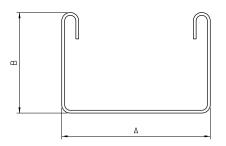
CB17 ELEVATION OF 30° SKEW*



SHEAR KEY DETAIL

		BEAM DIMENSIONS (MEASURED ALONG ©)			STRAND DATA WITH NUMBER INDICATED IN ROWS					CONCRETE NO. OF STRENGTHS CI(e)		NO. OF C2(e)	NO. OF C3(e)	NO. OF C4(e)		
SPAN	NO. REQ'D.	. * LENGTH APPROXIMATE		(SE	MIDSPAN ECTION B-B) (2 3 (1)		(SI	END ECTION A (2)	Δ-A)	TOTAL (psi)			BARS BAR	BARS REQ'D	BARS REQ'D	BARS REQ'D
1	2	32′-10"	15,908	10	7	0	10	7	0	34	5500	7000	10	10	27	27
2	2	23′-6"	11,544	10	0	0	10	0	0	20	5500	7000	10	10	18	18

• BEAM DIMENSIONS LISTED IN THE TABLE HAVE BEEN ADJUSTED FOR THE EFFECTS OF SLOPE WHERE APPLICABLE. ALLOWANCE FOR SHRINKAGE AND ELASTIC SHORTENING IS NOT INCLUDED IN THE TABLE DIMENSIONS.



C1(e) & C3(e) BARS



C2(e) & C4(e) BARS

BILL OF REINFORCEMENT - CB17x36 - (SPAN 1)											
MARK SIZE	SIZE	NUMBER	LENGTH		LOCATION	ļ ,	4	В			
	NOWIDER	FT.	IN.	LOCATION	FT.	IN.	FT.	IN.			
A1	4	10	32	10	BOX BEAM						
C1e	5	20	10	6	BOX BEAM	2	9	1	6 3/8		
C2e	5	20	3	9	BOX BEAM	2	9	-	6		
C3e	4	54	10	6	BOX BEAM	2	9	1	6 1/4		
C4e	4	54	3	9	BOX BEAM	2	9	-	6		

BILL OF REINFORCEMENT - CB17x36 - (SPAN 2)												
MARK	CIZE	SIZE	NUMBER	LEN	NGTH	LOCATION	<i> </i>	4		В		
WARK SI	SIZE	NUMBER	FT.	IN.	LOCATION	FT.	IN.	FT.	IN.			
A1	4	10	23	6	BOX BEAM							
C1e	5	20	10	6	BOX BEAM	2	9	1	6 3/8			
C2e	5	20	3	9	BOX BEAM	2	9	-	6			
C3e	4	36	10	6	BOX BEAM	2	9	1	6 1/4			
C4e	4	36	3	9	BOX BEAM	2	9	_	6			

