# TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS

# DAVIESS COUNTY CARTER ROAD KY 2698 OVER U.S. 60 030B00156N

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	BID ITEM	Concrete Class "AA"	Steel Reinforcement, Epoxy Coated	Arrow Panel	Masonry Coating	Mech. Reinf. Coupler #5 Epoxy Coated	Mech. Reinf. Coupler #7 Epoxy Coated	Staking	Remove Concrete Masonry	PPC I-Beam Type 3	Temporary Signs	Maintain and Control Traffic	Lane Closure	Concrete Barrle Wall Type 9T	Pave Striping- Temp Rem Tape-B	Pave Striping- Temp Rem Tape-W	Pave Striping- Temp Rem Tape-Y
	UNIT	C.Y.	LBS.	EA.	S.Y.	EA.	EA.	L.S.	C.Y.	L.F.	S.F.	L.S.	EA.	L.F.	L.F.	L.F.	L.F.
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Substructure		-															
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	Superstructure	32.5	7398	2	162	462	16	1	44.2	81.25	288	1	2	900	2000	4000	4000
	BRIDGE TOTALS	32.5	7398	2	162	462	16	1	44.2	81.25	288	1	2	900	2000	4000	4000

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	BID ITEM CODE	02569	20738NS112	21669NN	2671	2898	2003	23121NN								
	BID ITEM	Demobilization	Temp Crash Cushion	Police Officer With Vehicle	Portable Changeable Message Sign	Relocate Crash Cushion	Relocate Temporary Barrier	Remount Sign On Bridge								
	UNIT	L.S.	EA.	Hour	EA.	EA.	LF	EA.								
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General Notes
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Removal Detalls
Diaphragm Replacement
lab Replacement
PC I-Beam, Type 3 Details
Construction Elevations
SDECIAL NOTES
SPECIAL NOTES
for Traffic Control on Bridge Repair Contracts
r Contract Completion Dates and Penalties on Bridge Repair Contract
for Bridge Plans
SPECIAL PROVISIONS
SECIAL FROVISIONS
TANDADD DDAMING
STANDARD DRAWINGS
Temporary Concrete Barrier Type 9T
Box Beam Stiffening
Lane Closure Multi-Lane Highway Case II
Delineators for Concrete Barriers
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SPECIFICATIONS
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**INDEX OF SHEETS** 

S1 Title Sheet



REVISION DATE

Division of Structural Design DATE: CHECKED BY

DESIGNED BY: J. Van Zee M. Bawithawng

DETAILED BY: M. Bawithawng J. Van Zee

TITLE SHEET

ROUTE BRIDGE ID COUNTY OF 030B00156N DAVIESS KY 2698 SHEET NO. DRAWING NUMBER

28915

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 17th edition of the AASHTO Standard Specifications for Highway Bridges.

DESIGN LOAD: The original bridge is designed for a HS-25 live load.

DESIGN STRESSES: Concrete Class "A"  $\sim$  f'c = 3500 psi Concrete Class "AA"  $\sim$  f'c = 4000 psi Steel Reinforcement  $\sim$  Fy = 60,000 psi

DESIGN METHOD: All damaged members are replaced in kind. The original bridge was designed by the load factor method.

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. 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.

BEVELED EDGES: Bevel all exposed edges 3/4", unless otherwise noted.

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: 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.

SUPERSTRUCTURE SLAB: Ensure the entire superstructure slab is poured continuously, out to out, before allowing any concrete to set.

 $\ensuremath{\mathsf{MASONRY}}$  COATING: Apply masonry coating to match existing in accordance with the specifications.

CONCRETE: Class AA concrete is to be used throughout this repair. Class D is to be used for the prestress beam.

SITE INSPECTION: The contractor shall familiarize themselves with all conditions at the bridge site. Submission of a bid shall be considered evidence that the contractor has performed a site visit and is familiar with all aspects of the existing bridge and requirements in these plans. The cabinet will not consider any claims due to changed site conditons.

CONSTRUCTION JOINTS: After slab has fully cured, seal construction joint between old and new concrete on the top of deck and barrier with an approved epoxy concrete sealer. All costs incidental to Class AA concrete.

# GENERAL NOTES

DAMAGE TO STRUCTURE: The contractor shall bear all responsibility and expense for any and all damage to the structure during repair work, even to the removal and replacement of the entire structure, should it be damaged by the contractors actions or inaction.

DIMENSIONS & ELEVATIONS: The existing bridge drawing number is 23078. All dimensions and elevations given in these plans are based on field surveyed data and dimensions from the old plans. Prior to beginning work or ordering any materials, the contractor shall verify all dimensions and elevations. No claim will be honored by the Department of Highways regarding site conditions.

CONCRETE REMOVAL: Saw cut a line 1" deep where necessary to help ensure a clean break along removal lines. All costs incidental to price bid for Remove Concrete Masonry.

CONSTRUCTION: Sheeting, shoring, dewatering, cofferdams, etc. may be required for construction. Include all costs in the lump sum price bid for Foundation Preparation.

BEARING PADS: Reuse existing bearing pads. If pads are damaged, replace in kind. All costs incidental to price bid for Prestressed beam.

MAINTAIN AND CONTROL TRAFFIC: Contractor is fully responsible for the safety of the public during all operations. Lanes underneath the structure may need to be temporary closed or shut down to allow for demolition or placement of beam. Submit proposed traffic disruptions to the Engineer for approval. All costs for temporary traffic control in addition to the temporary traffic control used on the bridge deck and shown on Std. Dwg. TTC-120, c.e. is incidental to the price bid for Maintain and Control Traffic.

MECHANICAL COUPLERS: Submit mechanical coupler specimens in accordance with Section 602.03.06 of the specifications. Tested specimens are incidental to unit price paid for mechanical couplers of each size.

REMOUNT SIGN ON BRIDGE: The bid item will include removing, storing and re-attaching the sign. Any additional items to complete this work shall be considered incidental to REMOUNT SIGN ON BRIDGE.

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

bet. Between Tan Tangent b.f. Back Face Thru Through BOF Bottom of Footing TOF Top of Footing BOS Bottom of Slab TOS Top of Slab Bottom Tot. Total bot. Brg. Bearing Тур. Typical C to C Center to Center Vert. Vertical Current Edition W.P. Working Point c.e. C.Y. Cubic Yard Yd. Yard Chd. Chord

Clr. Clear
Conc. Concrete
Cu. Cubic
Dwg. Drawing
e.f. Each Face

Center Line

CL

El. Elevation
eq. Equal
Est. Estimate
Ext. Exterior
F to F Face to Face
f.f. 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 M Meter

MPH Miles per Hou n.s. Near Side

O.D. Outside Diameter Opp. Opposite PC Point of Curve

Perp. Perpendicular PI Point of Intersection

PPC Precast Prestressed Concrete
PPCDU Precast Prestressed Concrete Deck Unit

PSI Pounds per Square Inch

PT Point of Tangent

R Radius

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

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS

REVISION DATE

Division of Structural Design DATE: June 2024 CHECKED BY
DESIGNED BY: J. Van Zee M. Bawithawng
DETAILED BY: M. BawiThawng J. Van Zee

GENERAL NOTES

CROSSING
US 60

ROUTE

ROUTE

030B00156N

Daviess

KY 2698

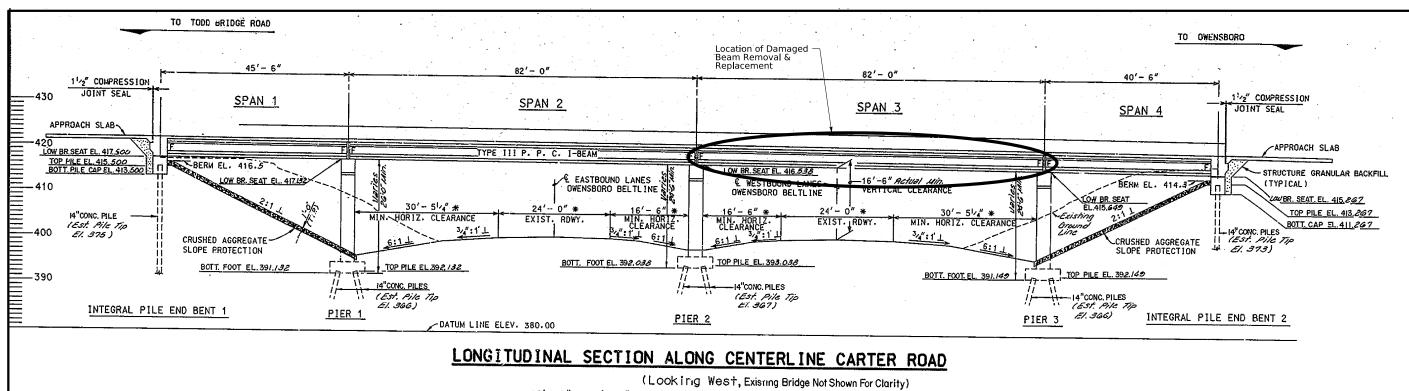
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S2

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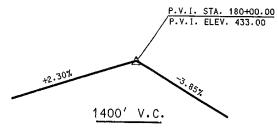
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FILE NAME: J:\District02\RS & M\Daviess\030B00156N Impact beam replacement\28915.dg



\* - INDICATES MEASURED PERPENDICULAR TO OWENSBORD BELTLINE

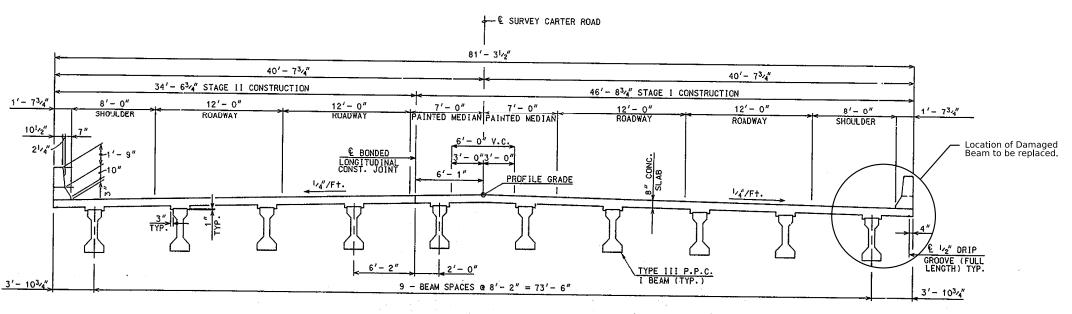
45'- 6" ~ 82'- 0" ~ 82'- 0" ~ 40'- 6" TYPE III P.P.C. I-BEAM SPANS (CONTINUOUS FOR LIVE LOAD; COMPOSITE) HS25 LOADING, 78'- 0" ROADWAY, , 25°37'09" SKEW RT. 86'- 0" OUT TO OUT SHOULDERS AT BRIDGE ENDS. 2:1 SLOPES



PROFILE GRADE

CARTER ROAD

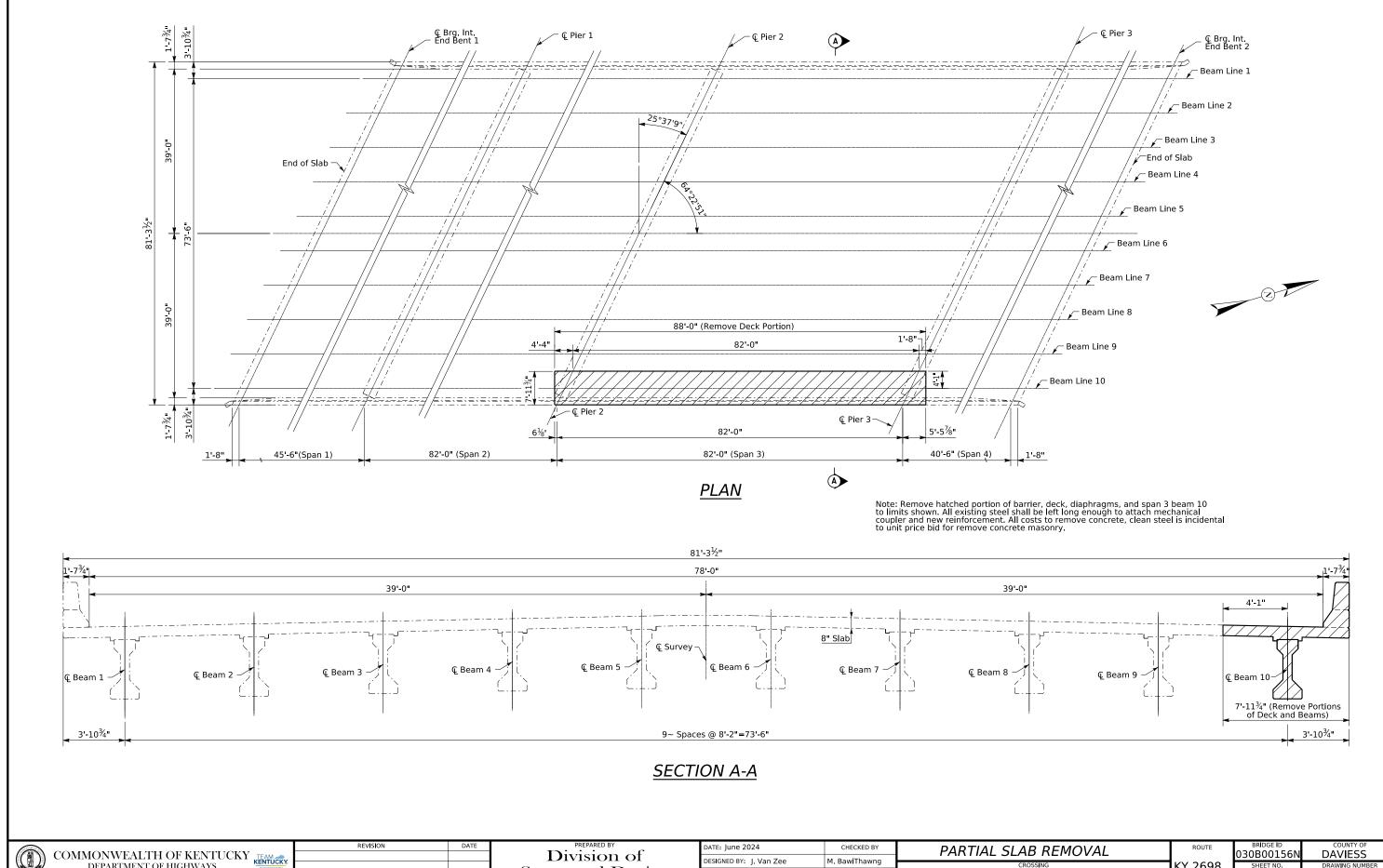
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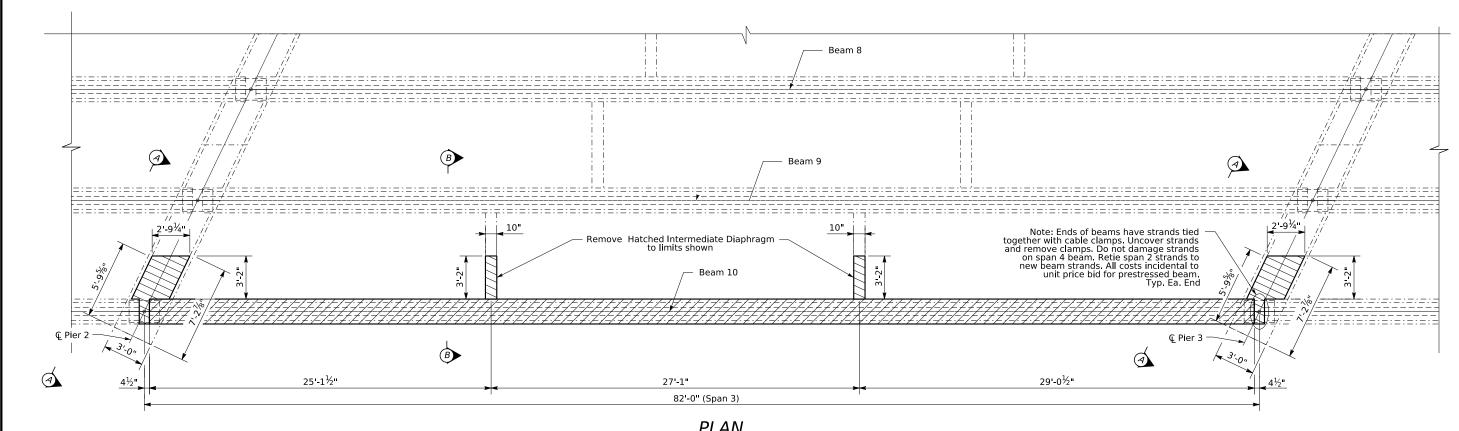
## TYPICAL DECK SECTION

(Looking Ahead Station)

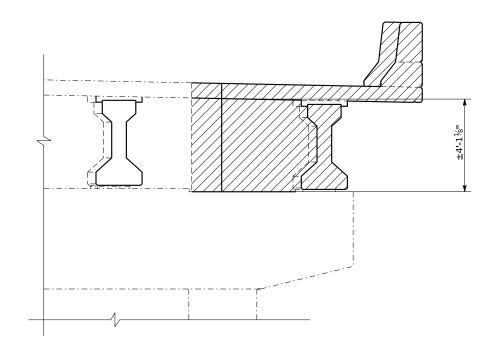
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	COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS		Division of	DESIGNED BY: J. Van Zee	M. BawiThawng		KY 2698	SHEET NO.	DRAVIESS DRAWING NUMBER
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DEPARTMENT OF HIGHWAYS



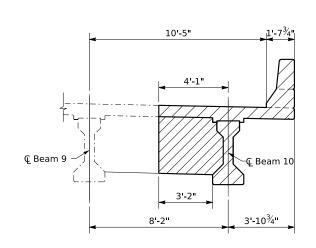
**PLAN**~Superstructure not shown~



**SECTION A-A** 

Note: Remove hatched portion of diaphragms, inter. Diaphragms, and span 3 beam 10 to limits shown. All existing steel shall be left long enough to attach mechanical coupler and new reinforcement. All costs to remove concrete, clean steel is incidental to unit price bid for remove concrete masonry.

Install  $^3\!4$ " Ø threaded inserts as necessary in beam at diaphragm locations, Intermediate and ends. See S6 & S9 for more details.



SECTION B-B



REVISION DATE

Division of Structural Design DATE: June 2024 CHECKED BY

DESIGNED BY: J. Van Zee M. BawiThawng

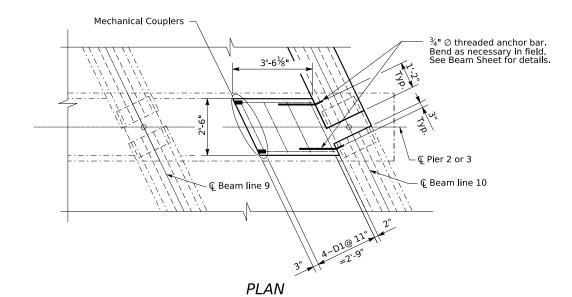
DETAILED BY: M. BawiThawng J. Van Zee

DIAPHRAGM REMOVAL DETAILS

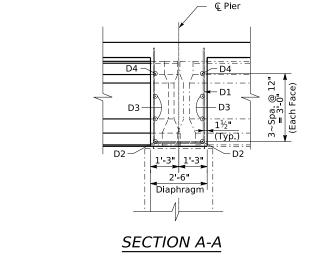
CROSSING
US 60

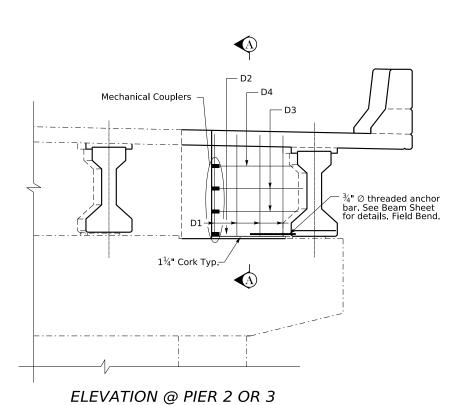
ROUTE 030B00156N COUNTY OF 030B00156N DAVIESS

KY 2698 SHEET NO. DRAWING NUMBER S5 28915



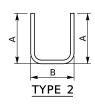
~Superstructure not shown~

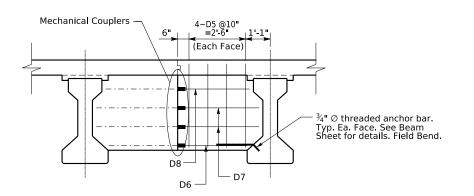




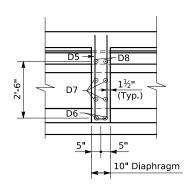
Note: Contractor to stabilize beam until deck and diaphragms are poured. Submit proposed stabilization method for approval.

### BILL OF REINFORCEMENT SIZE LENGTH MARK TYPE NO. LOCATION С Pier 2 or 3 Diaphragm 4- 2 D2e D3e D4e Pier 2 or 3 Diaphragm Pier 2 or 3 Diaphragm Inter. Diaphragm 3-6 0-7 Inter. Diaphragm Inter. Diaphragm Inter. Diaphragm





### INTERMEDIATE DIAPHRAGM ELEVATION



TYPICAL SECTION THRU INTERMEDIATE DIAPHRAGM ELEVATION

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS

REVISION

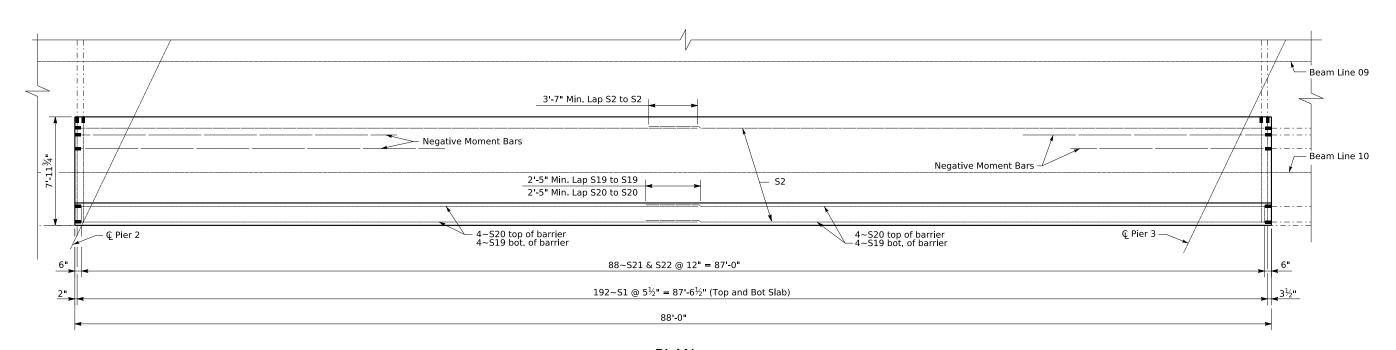
Division of Structural Design

DATE: June 2024 CHECKED BY DESIGNED BY: J. Van Zee M. BawiThawng DETAILED BY: M. BawlThawng

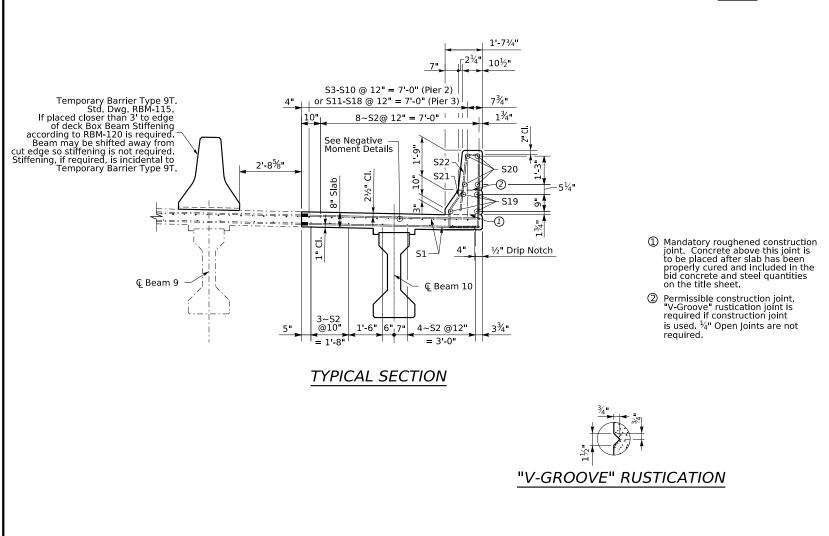
DIAPHRAGM REPLACEMENT US 60

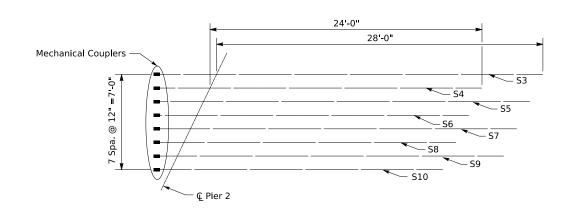
KY 2698

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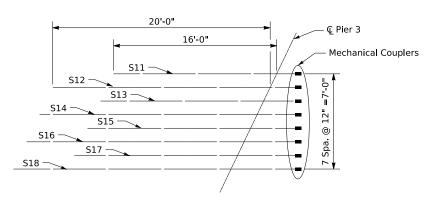


## PLAN



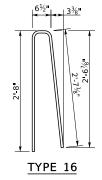


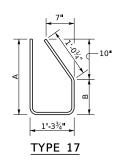
### NEGATIVE MOMENT REINFORCEMENT LAYOUT @ PIER 2



### NEGATIVE MOMENT REINFORCEMENT LAYOUT @ PIER 3

BIL					BILL	OF REINFORCEMEN	٧T			
	MARK	TYPE	NO.	SIZE	LENGTH	LOCATION	A/E	B/F	C/G	D/H
	Sle	Str.	384	5	7- 9	Top & Bot. of Slab				
	S2e	Str.	32	5	45-10	Top and Bottom Slab				
	S3e	Str.	- 1	7	32- 7	Negative Moment				
	S4e	Str.	- 1	7	27- 9	Negative Moment				
	S5e	Str.	1	7	31- 3	Negative Moment				
	S6e	Str.	1	7	26- 9	Negative Moment				
	S7e	Str.	1	7	30- 3	Negative Moment				
	S8e	Str.	- 1	7	25-10	Negative Moment				
	S9e	Str.	- 1	7	29- 4	Negative Moment				
	SI0e	Str.	1	7	24-10	Negative Moment				
	Slle	Str.	1	7	17-10	Negative Moment				
	S12e	Str.	- 1	7	22- 4	Negative Moment				
	SI3e	Str.	- 1	7	18-10	Negative Moment				
	SI4e	Str.	1	7	23- 4	Negative Moment				
	SI5e	Str.	1	7	19- 9	Negative Moment				
	SI6e	Str.	- 1	7	24- 3	Negative Moment				
	SI7e	Str.	I	7	20- 9	Negative Moment				
	SI8e	Str.	1	7	25- 3	Negative Moment				
	SI9e	Str.	8	5	45- 3	Bot. Barrier				
	S20e	Str.	8	5	45- 3	Top of Barrier				
	S21e	17	88	5	4- 8	Barrier	1-8	0- 91/2		
	S22e	16	88	5	5- 7	Barrier				



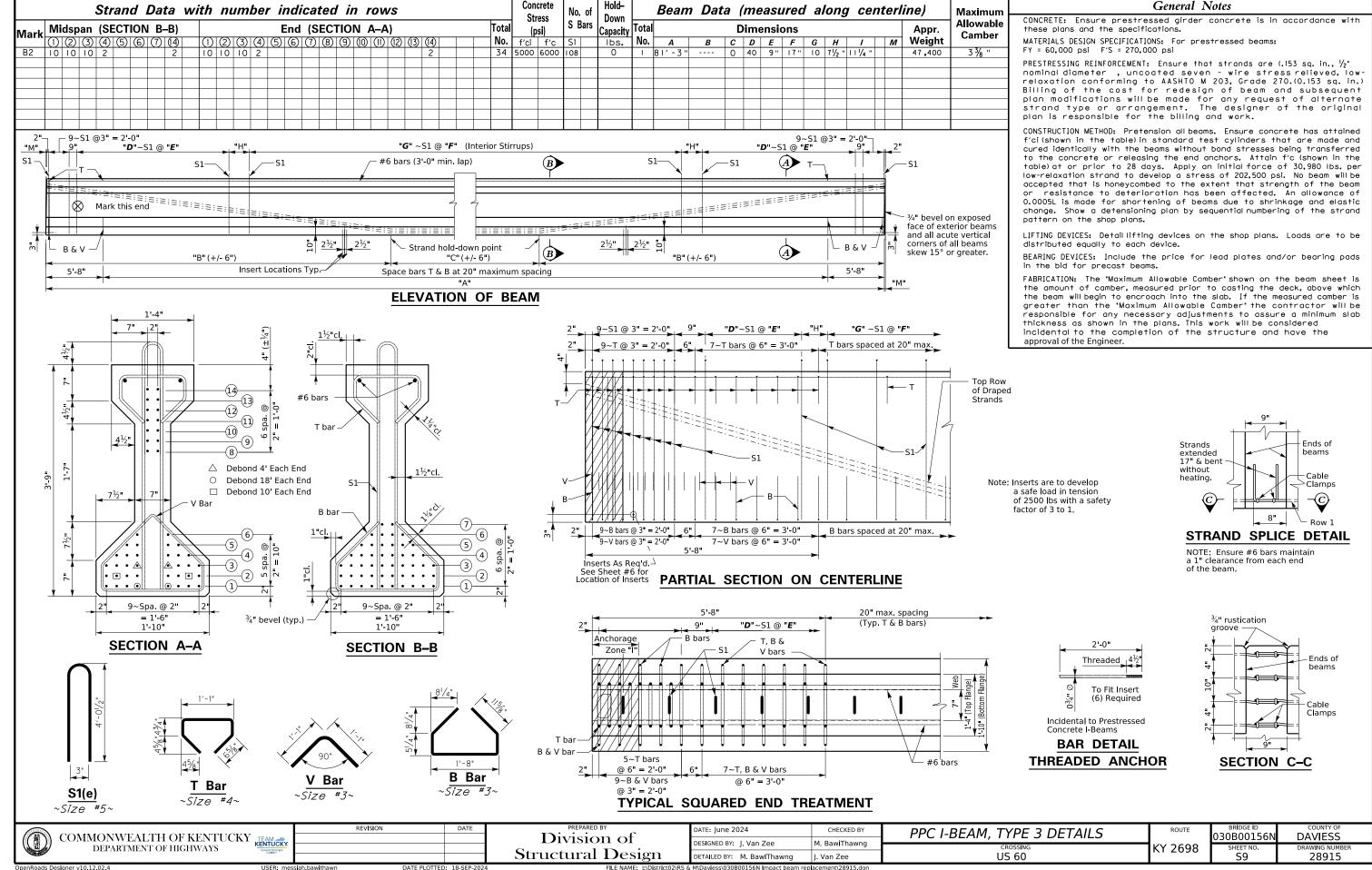


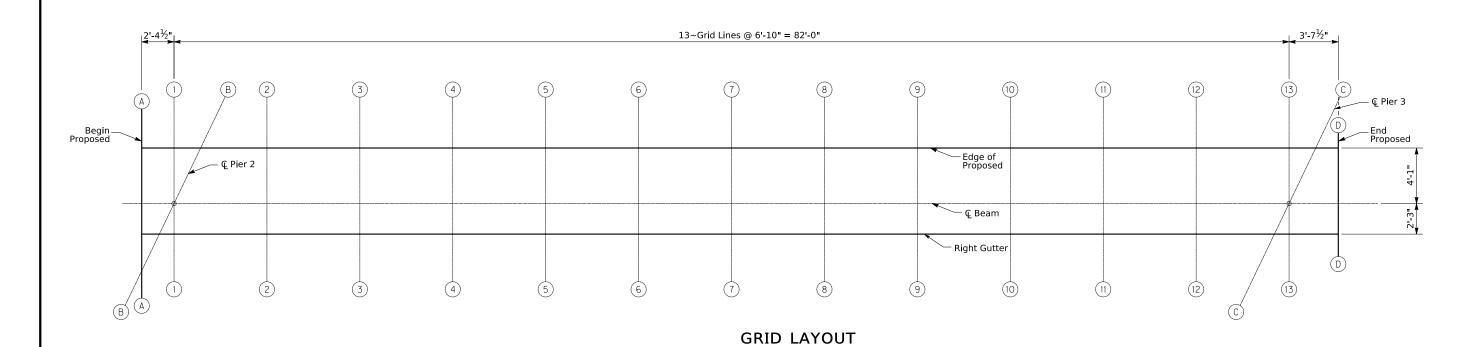
Division of Structural Design

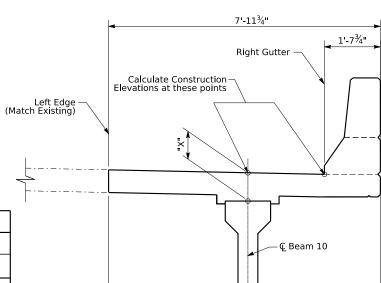
DATE: June 2024 CHECKED BY DESIGNED BY: J. Van Zee M. BawiThawng DETAILED BY: M. BawlThawng

PARTIAL SLAB REPLACEMENT crossing US 60

BRIDGE ID 030B00156N COUNTY OF DAVIESS KY 2698 DRAWING NUMBE 28915







### **BEAM 10 RIGHT GUTTER** LOCATION Const. El. (1+2=3) Skew Line AA 0.000 0.000 Skew Line BB 0.000 0.000 Skew Line CC 0.000 0.000 Skew Line DD 0.000 0.000 Grid Line 01 0.000 0.026 0.000 0.026 Grid Line 02 0.050 0.050 Grid Line 03 0.072 0.072 Grid Line 04 0.089 0.089 Grid Line 05 Grid Line 06 0.100 0.100 Grid Line 07 0.104 0.104 0.100 0.100 Grid Line 08 0.089 0.089 Grid Line 09 0.072 0.072 Grid Line 10 0.050 0.050 Grid Line 11 0.026 0.026 Grid Line 12 0.000 0.000 Grid Line 13

### TYPICAL SECTION

### NOTES FOR CONSTRUCTION ELEVATIONS ON PRESTRESSED BEAM

Contractor shall calculate all construction elevations required on this structure in accordance with these notes and the table above. All costs for surveying and calculations shall be included in the lump sum price bid for Staking.

Prior to removing any concrete, contractor shall take shots and record elevations at top of existing deck at the Left Gutter and Beam 10 at the grid line locations and record in the Top Slab Surveyed El. (#1) columns in the table above. These shots must be done before any concrete is removed, with no equipment on the bridge, and no shoring under the beams.

After beam is erected, shots must be taken at the top of beam 10 at the grid line locations shown on the plan view. These shots must be recorded in the Top Beam Surveyed El. (#3) columns under Beam 10.

Read and record all elevations to three decimal places.

Calculate the Left Gutter Construction Elevation by taking the number recorded in column #1 and adding column #2. Record the result in column #3 of the Left Gutter.

Calculate the "X" dimensions over Beam 10 for setting the template over the beam by taking the surveyed elevation recorded in Column #1, add column #2, and subtract the surveyed top of beam elevation in column #3. Record the result in column #4. Measuring Dimension "X" over each beam gives the final check on beam tolerances for camber, beam damage, and errors in erection that produces reverse cambers, sags, and unsightly fascia beams. Set the template over the beams by measuring dimension "X" above the top of the beams for the top of the template. Do not set the template by elevations over the beams.

Under no circumstances should any temporary supports be supporting any portions of any girders when taking initial elevations, top of beam shots, or pouring the concrete deck.

Construct the barrier to roadway grade. Do not add camber to the barrier.

			REVISION		DATE
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Division of Structural Design

4'-1"

DATE: June 2024 CHECKED BY DESIGNED BY: J. Van Zee M. BawiThawng DETAILED BY: M. BawlThawng

CONSTRUCTION ELEVATION 30B00156N **DAVIESS** KY 2698 SHEET NO US 60

28915

3'-10¾"

**CONSTRUCTION ELEVATIONS**