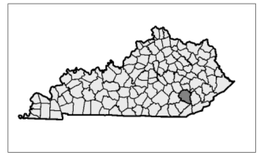
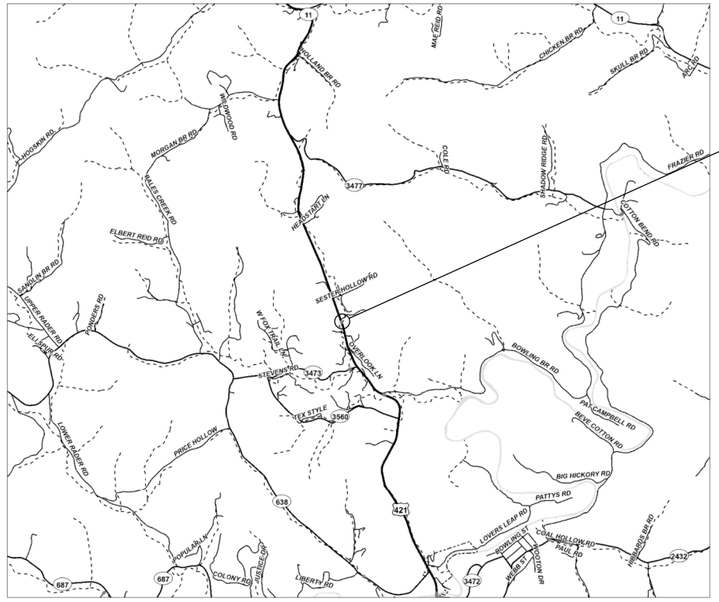
LETTING DATE

CONSTRUCTION PROJECT NO.

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
BRIDGE REHABILITATION PLANS





026B00002N
US-421 OVER BRANCH
OF ISLAND CREEK
37.19277777, -83.779722222

LOCATION MAP

INDEX OF SHEETS

Sheet No.	Description
S1	TITLE & LOCATION MAP
S2	GENERAL NOTES
S3	LAYOUT
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S5	MAINTENANCE OF TRAFFIC
S6	SOUTH ABUTMENT
S7	NORTH ABUTMENT
S8	ABUTMENT DETAILS
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S10	DECK AND FRAMING PLAN
S11	PPC I-BEAM, TYPE 1 DETAILS
S12	DIAPHRAGM DETAILS
S13	CONSTRUCTION ELEVATIONS
S14	MODIFIED RAILING SYSTEM TYPE T631

SPECIAL NOTES

- Bridge Overlay Approach Pavement
- Concrete Sealing
- Erosion Prevention and Sediment Control
- Liquidated Damages
- Structures With Over The Side Drainage
- Traffic Control on Bridge Repair Contracts
- Utilities and Rail Certification

STANDARD DRAWINGS

RBI-001-12	Typical Guardrail Installations
RBR-001-13	Steel Beam Guardrail ("W" Beam)
RBR-015-06	Steel Guardrail Posts
RBR-055-01	Delineators for Guardrail
RBR-018	Guardrail System Transition
BHS-011	Railing System Side Mounted MGS Details
BHS-012	Railing System Type T631 Details
BBP-001-12	Elastomeric Bearing Pads for Prestressed Beams
BBP-002-04	Bearing Details
BJE-001-13	Neoprene Expansion Dams and Armored Edges
RBM-115-10	Concrete Barrier Wall Type 9T (Temporary)
RBR-005-11	Guardrail Components
RBR-010-06	Guardrail Terminal Sections
RBR-016-06	Timber Guardrail Posts
RGX-050-02	Gabion Retaining Walls

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.

AASHTO LRFD Bridge Construction Specifications with Current Interims.

STATE OF KENTUCKY
TRAVIS M. BAKER
27019
LICENSED PROFESSIONAL ENGINEER

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: J. Corley	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE
US-421

CROSSING
BRANCH OF ISLAND CREEK

TITLE & LOCATION MAP

BRIDGE NUMBER
026B00002N

PREPARED BY
AECOM

BRIDGING KENTUCKY
Restore | Renew | Replace

SHEET NO.
S01

DRAWING NO.
27931

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 Interims.

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.

DESIGN METHOD: All superstructure members are designed to be equivalent or greater than the load and resistance factor design method as specified in the current AASHTO Specifications.

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 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.

VERIFYING FIELD CONDITIONS: Dimensions shown on these Plans are taken from field measurements. The Plan dimensions and details relative to the existing structure are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make the necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the 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.

PLANS OF EXISTING STRUCTURE: Plans of the existing structure are not available. Existing superstructure is assumed to be constructed according to Standard Drawing G-24. The completeness of these drawings is not guaranteed and no responsibility is assumed for their accuracy.

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 the Sub-Contractor shall be imprinted in the concrete with 1" 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.

UTILITIES: 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 CONSTRUCTION LIMITS: 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 limits of the construction 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 deck/asphalt), and partial removal of the abutments and wingwalls as shown in the Plans. Portions of the existing abutments and wingwalls 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 1 inch 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.

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. If 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 psi
For Class "AA" Concrete:	F'C = 4,000 psi
For Class "M" Concrete:	F'C = 4,000 psi
For Steel Reinforcement:	FY = 60,000 psi

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

Material	Specification
Anchor Bolts	F1554, Grade 55
Grout	C1107
Anchor Dowels	A311, Grade 1018 Smooth Steel Rods

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.

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. 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.

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

BEVELED EDGES: Bevel all exposed edges ¾" unless otherwise noted.

STAY-IN-PLACE METAL FORMS: Stay-In-Place Metal Forms may be used on bridge decks under the following additional conditions:

The valleys of forms shall be filled with trimmed styrofoam to eliminate increased dead load from concrete.

The welding shall be performed by a certified welder.

CONCRETE SEALER: Apply concrete sealer 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 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 XXXXxxxxxN refers to the Bridge ID number which is located on the Title Sheet, SI of the Bridge Plans. Example: SHOP_042B00019IN@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 joint.

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.

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 Class AA Concrete and no separate measurement or payment shall be made.

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

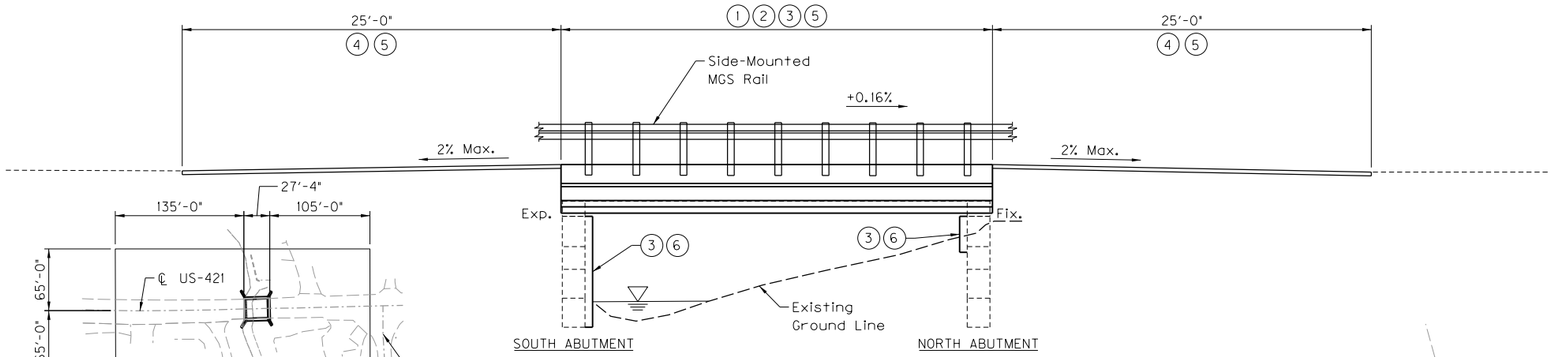
COUNTY
CLAY

ROUTE	CROSSING
US-421	BRANCH OF ISLAND CREEK

GENERAL NOTES

BRIDGE NUMBER	PREPARED BY		SHEET NO.
026B00002N	AECOM	BRIDGING KENTUCKY Restore | Renew | Replace	S02
			DRAWING NO. 27931

FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832



ENVIRONMENTALLY CLEARED AREA

ELEVATION

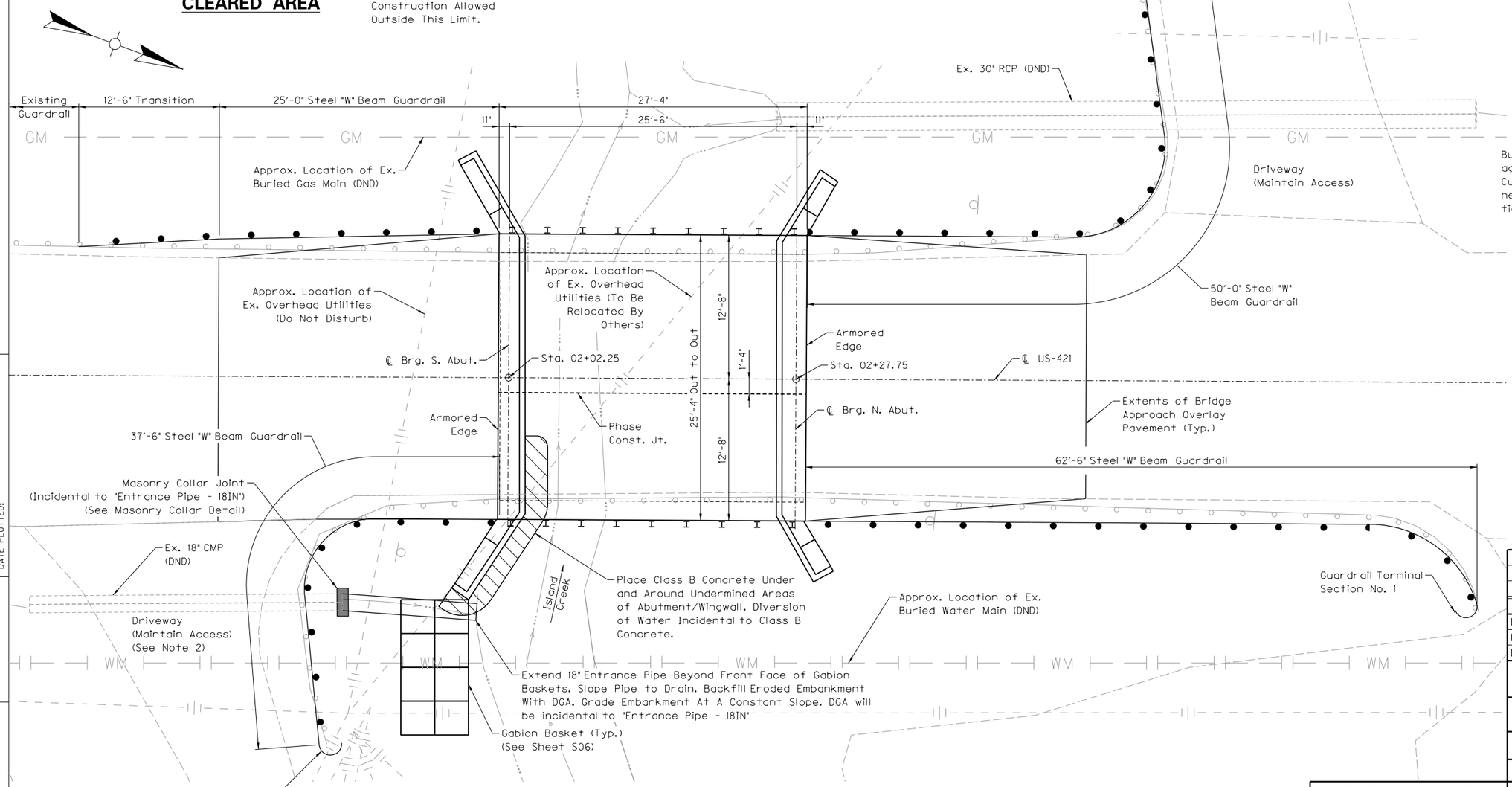
NOTES

1. Widen shoulders and provide extra long guardrail posts as directed by Engineer to install new guardrail. The estimated quantities include contingency quantites of 32 Extra Long Guardrail Posts and 28 C.Y. Granular Embankment to be used for this purpose, as directed by the Engineer.

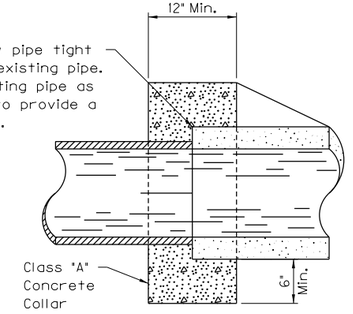
2. Transition driveways at a slope less than or equal to existing from proposed edge of pavement. Maintain 1¼" minimum pavement thickness. If required, replace portions of driveways in-kind, as directed by the Engineer. All work to maintain and rebuild driveways transitions shall be incidental to Bridge Approach Overlay Pavement.

REPAIRS

Repair No.	Description
(1)	Remove Superstructure and Portions of Wingwalls
(2)	Place New Prestressed Concrete Beams, Concrete Deck and Armored Edges
(3)	Apply Concrete Sealing
(4)	Place Bridge Overlay Approach Pavement
(5)	Install New Bridge and Approach Railing
(6)	Wingwall Repair and Abutment Encasement



PLAN



MASONRY COLLAR DETAIL

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: J. Corley	K. Compton

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE	CROSSING
US-421	BRANCH OF ISLAND CREEK

LAYOUT

BRIDGE NUMBER	PREPARED BY	SHEET NO.
026B00002N	AECOM	S03
	BRIDGING KENTUCKY Restore | Renew | Replace	DRAWING NO. 27931

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DATE PLOTTED:
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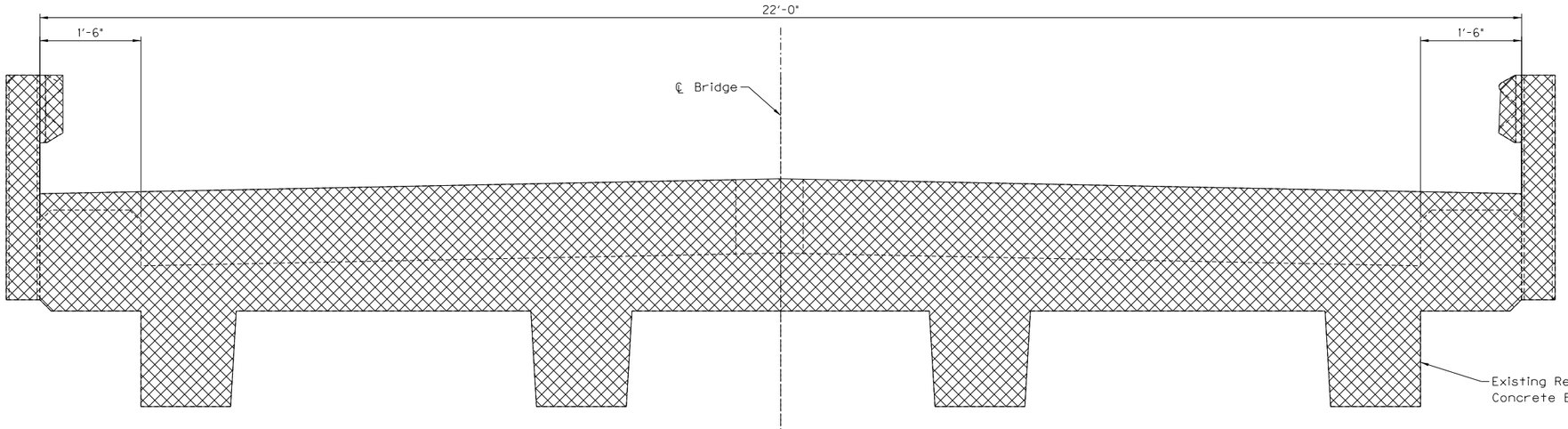


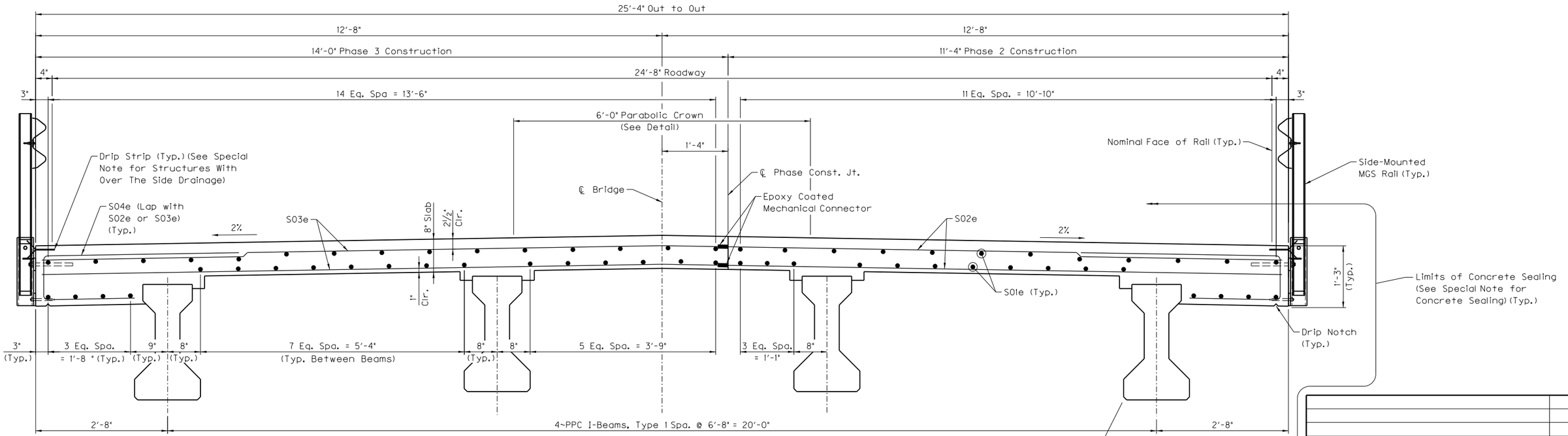
EXISTING

NOTES

1. See Sheet S10 for Deck Plan.
2. See Sheet S12 for End Diaphragm details.
3. See Std. Dwg. BHS-011 for Side-Mounted MGS Rail Details.

LEGEND

Removal Area



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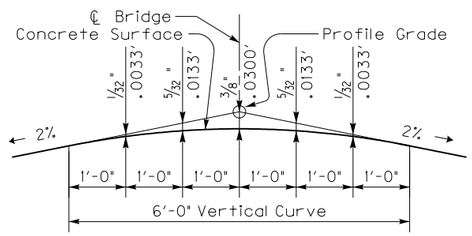
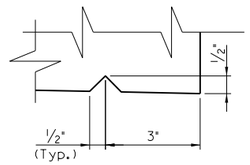


PARABOLIC CROWN



DRIP NOTCH DETAIL

(Full Length of Slab)

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	B. Shrestha
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE
US-421

CROSSING
BRANCH OF ISLAND CREEK

TYPICAL SECTIONS

BRIDGE NUMBER
026B00002N

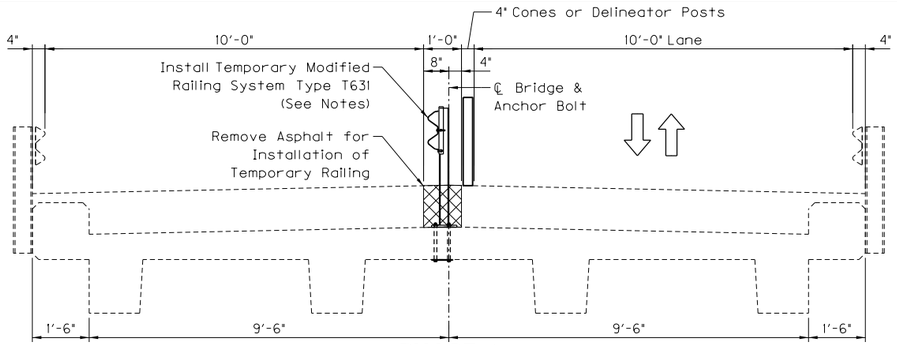
PREPARED BY
AECOM

BRIDGING KENTUCKY
Restore | Renew | Replace

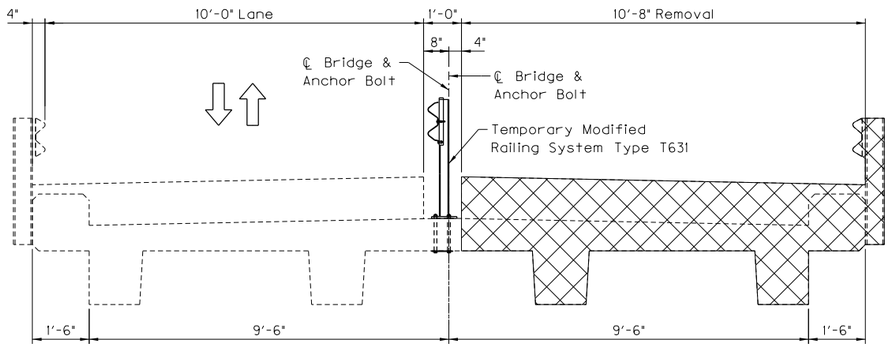
SHEET NO.
S04

DRAWING NO.
27931

FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832



PHASE 1



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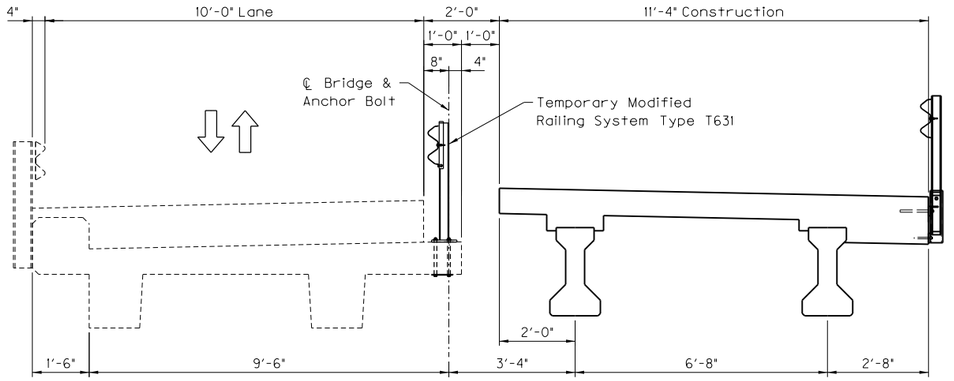

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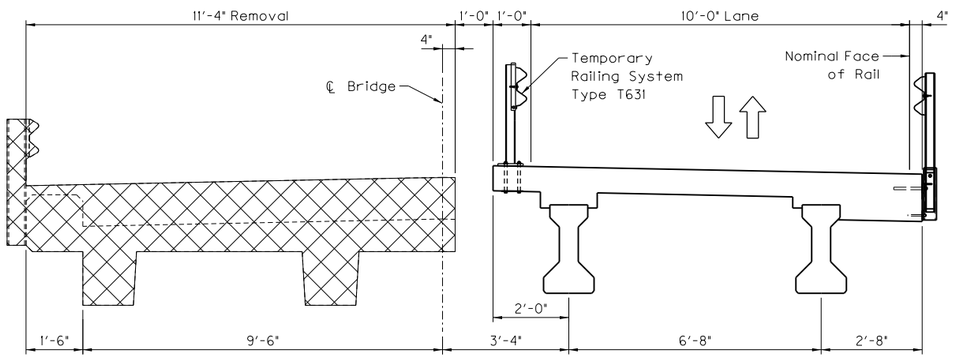

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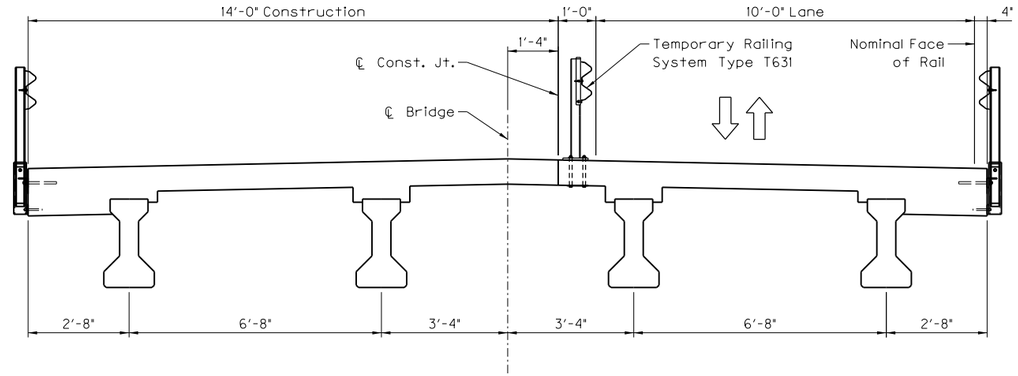
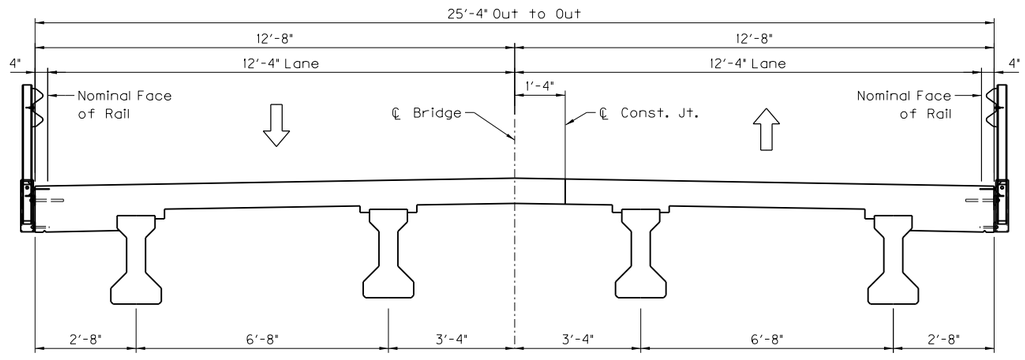


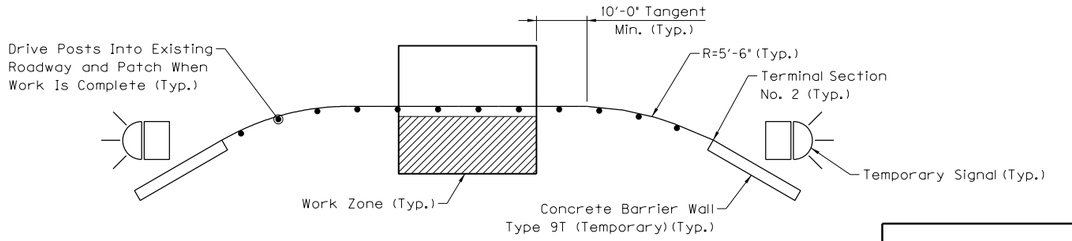
PHASE 3B



FINAL

LEGEND

Removal Area



WORK ZONE PLAN

(Phase 2 Shown, Phase 3 Similar)

NOTES

1. See Std. Dwg. BHS-012 for Railing System Type T631 details. Remove anchors and fill holes with non-shrink grout in accordance with Section 601.03 prior to completing construction. All work related to the temporary railing and work zone shall be incidental to Maintain and Control Traffic.
2. Maintain access to driveways during all phases.
3. Modified Railing System Type T631 shall be used during Phases 1 & 2 only. See Sheet S14 for details. Standard Railing System Type T631 per Std. Dwg. BHS-012 shall be used during Phase 3.
4. See Special Note for Traffic Control on Bridge Repair Contracts for more details.

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE	CROSSING
US-421	BRANCH OF ISLAND CREEK

MAINTENANCE OF TRAFFIC

BRIDGE NUMBER	PREPARED BY		SHEET NO.
026B00002N	AECOM	BRIDGING KENTUCKY Restore | Renew | Replace	S05
			DRAWING NO. 27931

FILE NAME:
USER:
DATE PLOTTED:
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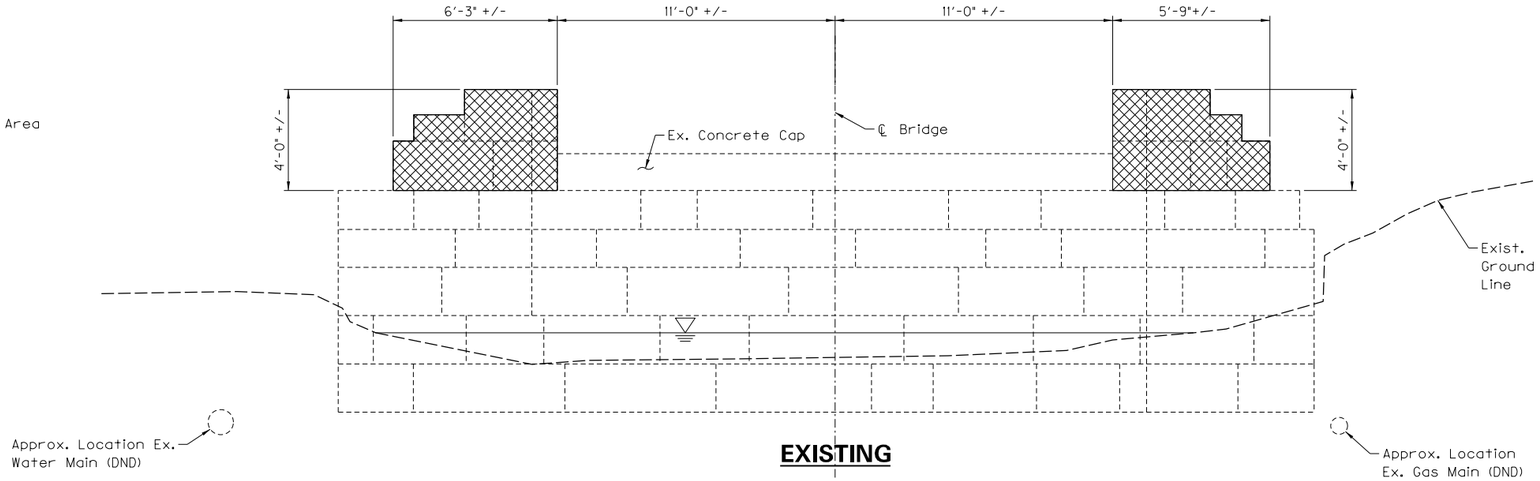
Power GEOPAK v8.11.9.832

LEGEND

Removal Area



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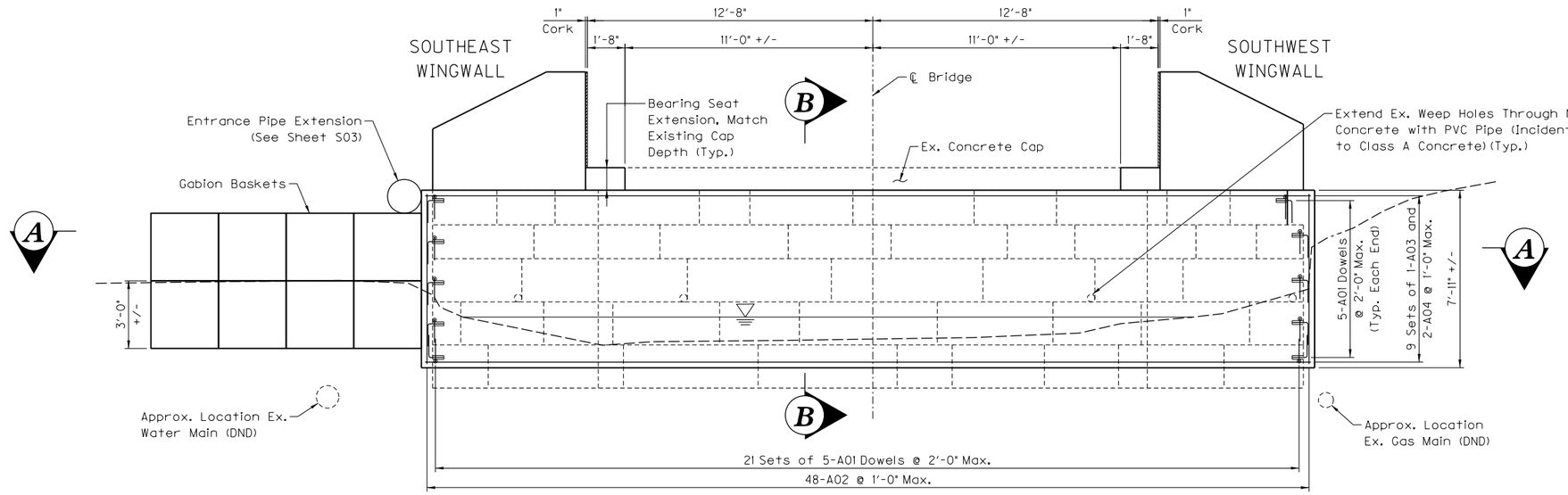

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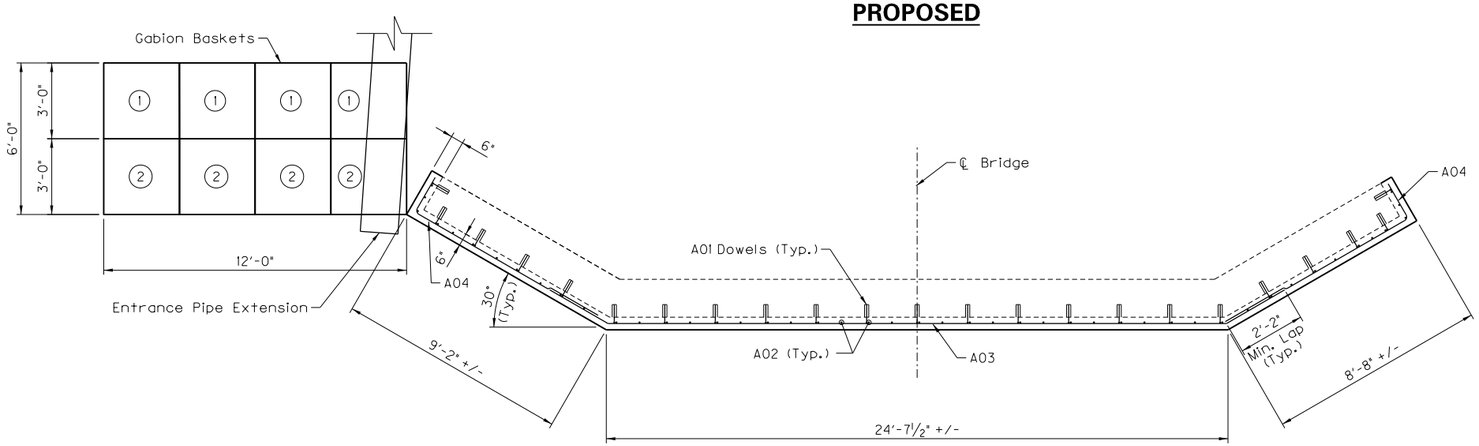

SECTION A–A

SECTION B–B

NOTES

1. Field bend and cut bars as necessary.
2. Excavation and temporary diversion of water shall be incidental to Class A concrete.
3. Seal abutments, wingwalls and end diaphragms according to the Special Note for Concrete Sealing.
4. See Sheet S07 for Dowel Details.
5. Adjust spacing as needed such that dowels are anchored into stones with 2" min. edge distance.
6. For additional abutment details and reinforcing, see Sheets S08 & S09.

GABION BASKET NOTES

1. Install per Std. Dwg. RGX-050-02. Contrary to Std. Dwg. RGX-050-02, structure excavation will not be measured for payment and will be considered incidental to Retaining Wall - Gabion.
2. (#) Denotes number of baskets in a column.
3. Do not excavate below bottom of existing abutment footing to install gabion baskets. Do not disturb existing waterline during installation.

REVISION	DATE
DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE
US–421

CROSSING
BRANCH OF ISLAND CREEK

SOUTH ABUTMENT

BRIDGE NUMBER
026B00002N

PREPARED BY
AECOM

BRIDGING KENTUCKY
Restore | Renew | Replace

SHEET NO.
S06

DRAWING NO.
27931

FILE NAME:
USER:
DATE PLOTTED:
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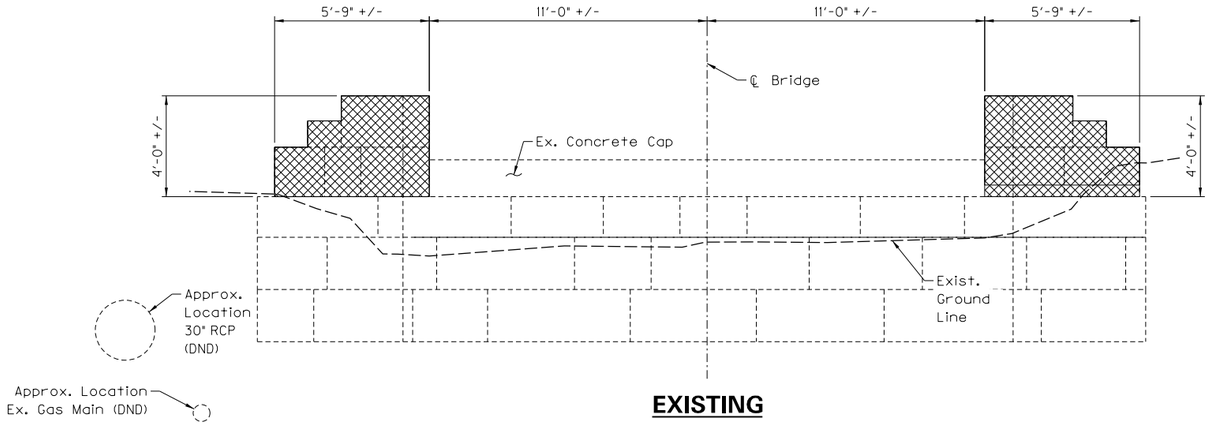
Power GEOPAK v8.11.9.832



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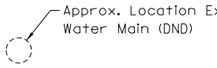

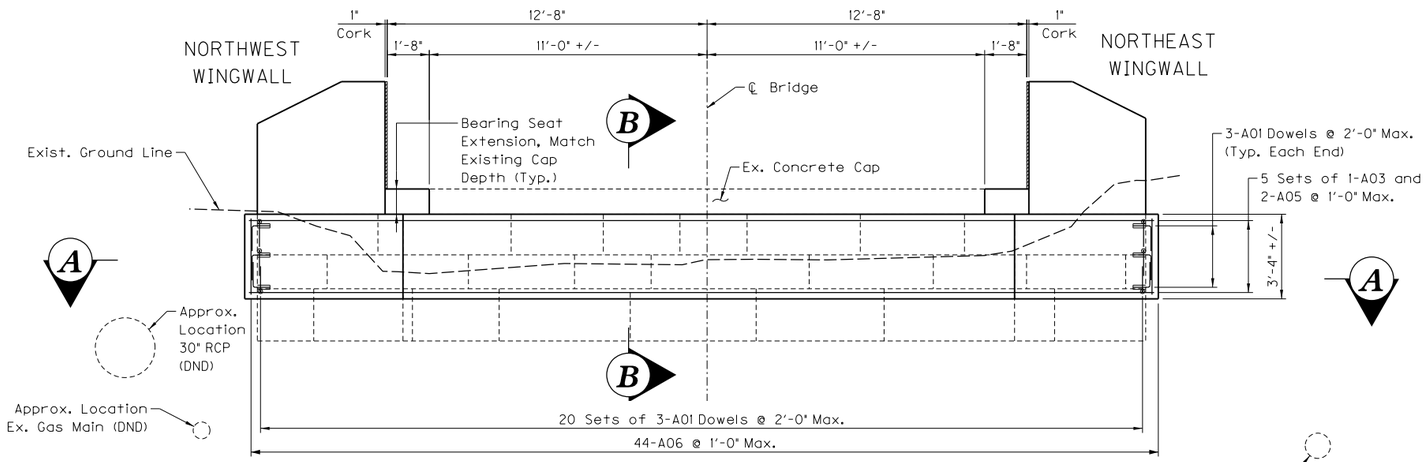

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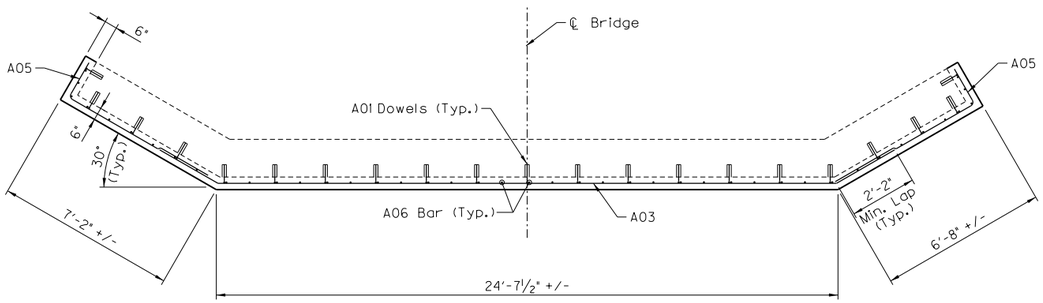
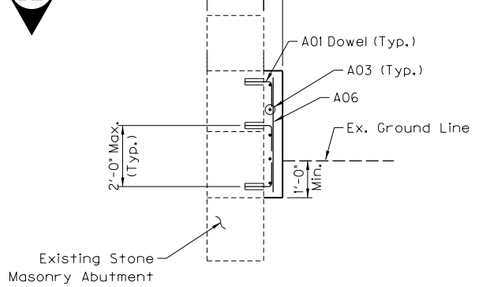


SECTION A–A



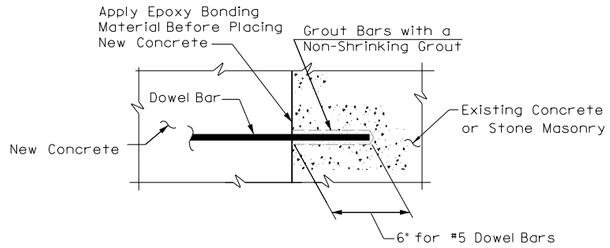
SECTION B–B

LEGEND

Removal Area

NOTES

1. Field bend and cut bars as necessary.
2. Excavation and temporary diversion of water shall be incidental to Class A concrete.
3. Seal abutments, wingwalls and end diaphragms according to the Special Note for Concrete Sealing.
4. Adjust spacing as needed such that dowels are anchored into stones with 2" min. edge distance.
5. For additional abutment details and reinforcing, see Sheets S08 & S09.



DOWEL DETAIL

Note: Dowel embedment lengths shown are approximate. Follow manufacturer's recommendations for developing the full tensile strength of the dowel into stone or 2500 psi concrete. The cost of drilling holes, grouting, and epoxy bonding grouting, and epoxy bonding material shall be incidental to the cost of Steel Reinforcement.

REVISION	DATE
DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CLAY

ROUTE: US–421

CROSSING: BRANCH OF ISLAND CREEK

NORTH ABUTMENT

BRIDGE NUMBER: 026B00002N

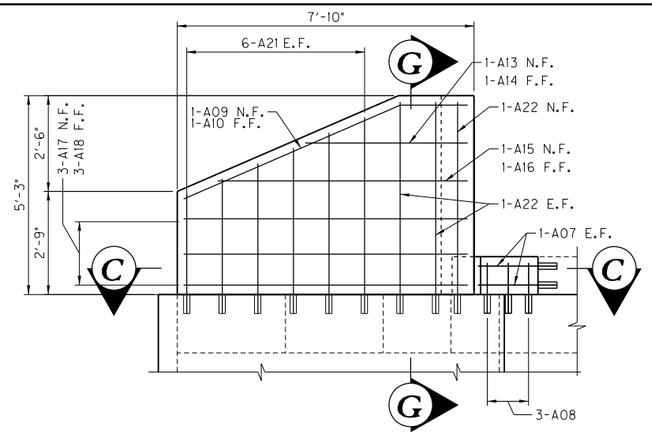
PREPARED BY: AECOM

BRIDGING KENTUCKY — Restore | Renew | Replace

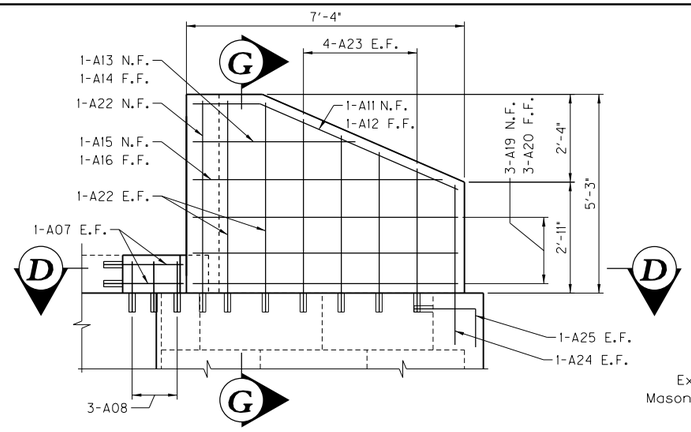
SHEET NO. S07

DRAWING NO. 27931

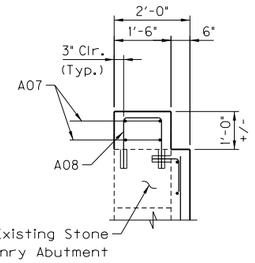
FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832



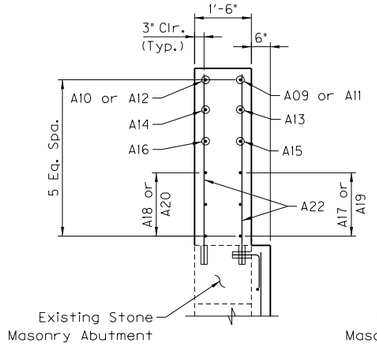
SOUTHEAST WINGWALL



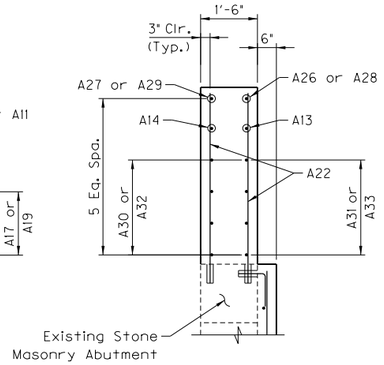
SOUTHWEST WINGWALL



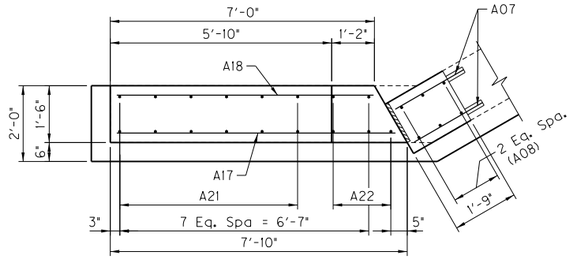
TYPICAL SECTION THRU BEARING SEAT EXTENSION



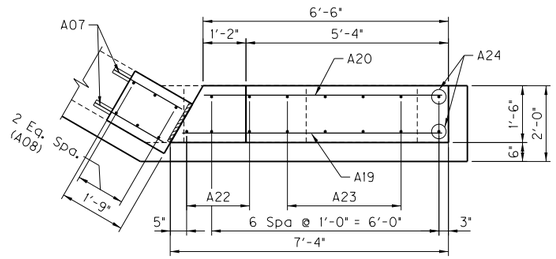
SECTION G–G



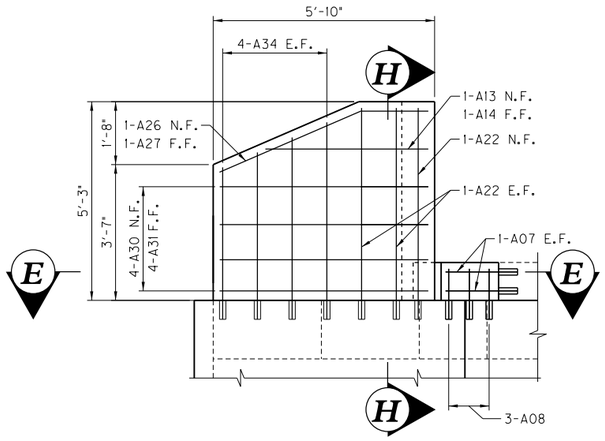
SECTION H–H



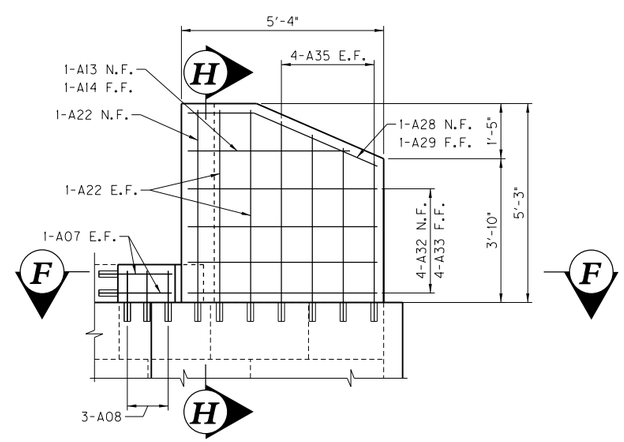
SECTION C–C



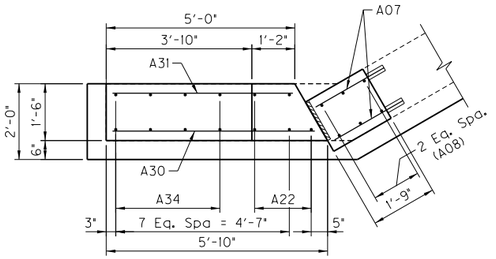
SECTION D–D



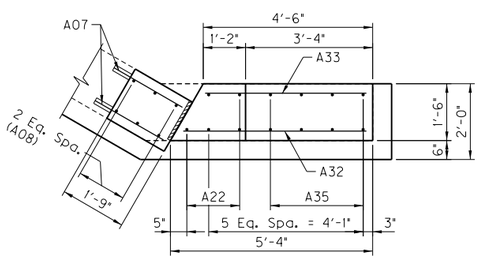
NORTHWEST WINGWALL



NORTHEAST WINGWALL



SECTION E–E



SECTION F–F

NOTES

1. All abutment and wingwall concrete shall be Class A Concrete.
2. For Bill of Reinforcement, see Sheet S09.
3. For dowel detail, see Sheet S07.
4. Adjust spacing as needed such that dowels are anchored into stones with 2" min. edge distance.

LEGEND

E.F. = Each Face
F.F. = Far Face
N.F. = Near Face

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CLAY

ROUTE: US–421

CROSSING: BRANCH OF ISLAND CREEK

ABUTMENT DETAILS

BRIDGE NUMBER: 026B00002N

PREPARED BY: AECOM

BRIDGING KENTUCKY — Restore | Renew | Replace

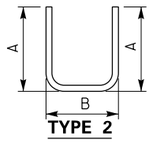
SHEET NO. S08

DRAWING NO. 27931

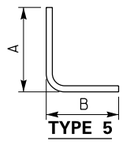
FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832

Bill of Reinforcement - Abutment

Mark	Type	Size	S. Abut. No.	N. Abut. No.	Length Ft.	Length In.	Location	A Ft.	A In.	B Ft.	B In.	C Ft.	C In.	D Ft.	D In.
A01	5	5	115	66	1	10	Abutment	0	10	1	0				
A02	Str.	5	48	0	7	6	Abutment								
A03	6	5	9	5	29	10	Abutment	24	6	2	8	1	4	2	4
A04	5	5	18	0	9	8	Abutment	8	6	1	2				
A05	5	5	0	10	7	8	Abutment	6	6	1	2				
A06	Str.	5	0	44	3	0	Abutment								
A07	Str.	5	8	8	2	1	Wingwalls								
A08	2	5	6	6	3	6	Wingwalls	1	3	1	0				
A09	8	5	1	0	7	10	Wingwalls	1	7	6	3	2	6	5	9
A10	8	5	1	0	7	3	Wingwalls	1	0	6	3	2	6	5	9
A11	8	5	1	0	7	3	Wingwalls	1	7	5	8	2	3	5	2
A12	8	5	1	0	6	8	Wingwalls	1	0	5	8	2	3	5	2
A13	Str.	5	2	2	4	1	Wingwalls								
A14	Str.	5	2	2	3	7	Wingwalls								
A15	Str.	5	2	0	6	5	Wingwalls								
A16	Str.	5	2	0	5	10	Wingwalls								
A17	Str.	5	3	0	7	4	Wingwalls								
A18	Str.	5	3	0	6	9	Wingwalls								
A19	Str.	5	3	0	6	10	Wingwalls								
A20	Str.	5	3	0	6	3	Wingwalls								
A21	Str.	5	12	0	4	2	Wingwalls								
A22	Str.	5	10	10	5	7	Wingwalls								
A23	Str.	5	8	0	4	6	Wingwalls								
A24	Str.	5	2	0	4	3	Wingwalls								
A25	5	5	2	0	2	8	Wingwalls	1	8	1	0				
A26	8	5	0	1	5	7	Wingwalls	1	7	4	0	1	7	3	9
A27	8	5	0	1	5	0	Wingwalls	1	0	4	0	1	7	3	9
A28	8	5	0	1	5	1	Wingwalls	1	7	3	6	1	4	3	3
A29	8	5	0	1	4	6	Wingwalls	1	0	3	6	1	4	3	3
A30	Str.	5	0	4	5	4	Wingwalls								
A31	Str.	5	0	4	4	9	Wingwalls								
A32	Str.	5	0	4	4	10	Wingwalls								
A33	Str.	5	0	4	4	3	Wingwalls								
A34	Str.	5	0	8	4	7	Wingwalls								
A35	Str.	5	0	8	4	9	Wingwalls								



TYPE 2



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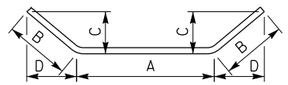

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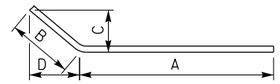

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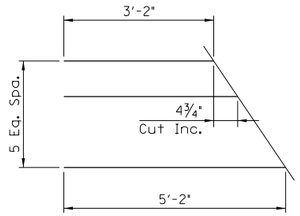
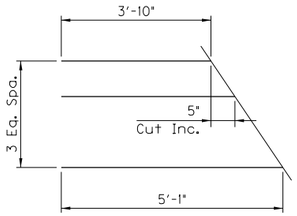
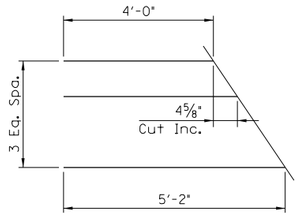


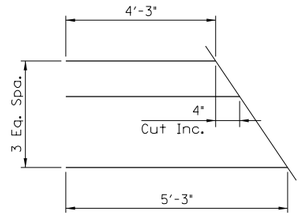
A21 x 4'–2" (Avg.)



A23 x 4'–6" (Avg.)



A34 x 4'–7" (Avg.)



A35 x 4'–9" (Avg.)

BAR CUTTING DIAGRAMS

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE
US–421

CROSSING
BRANCH OF ISLAND CREEK

ABUTMENT DETAILS

BRIDGE NUMBER
026B00002N

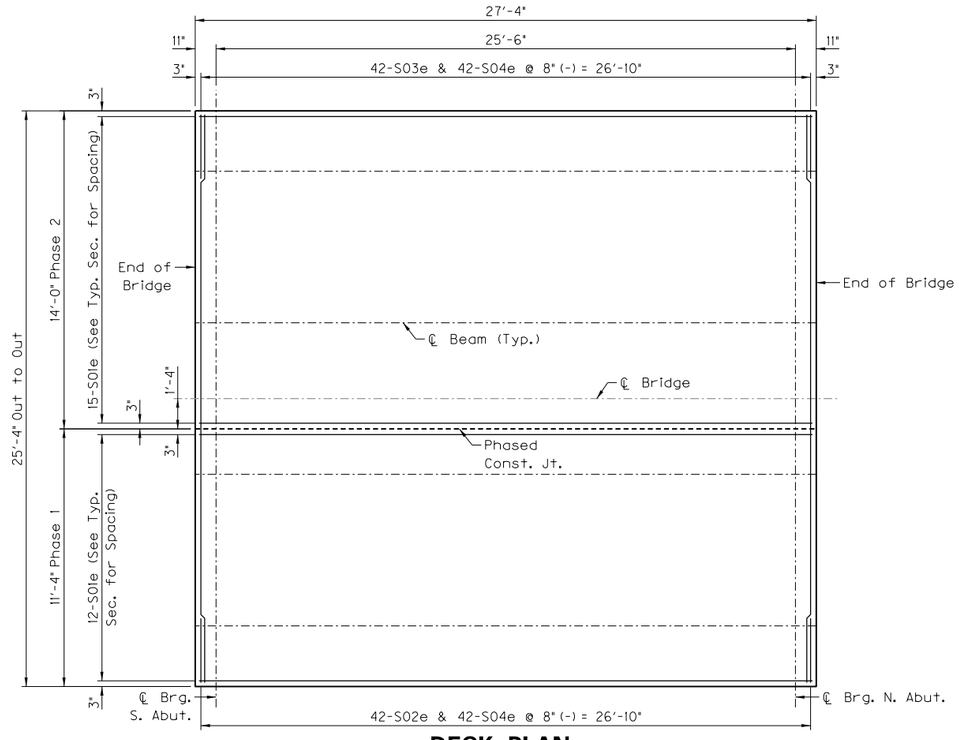
PREPARED BY
AECOM

BRIDGING KENTUCKY
Restore | Renew | Replace

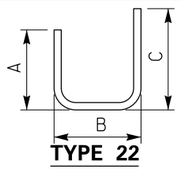
SHEET NO.
S09

DRAWING NO.
27931

FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832



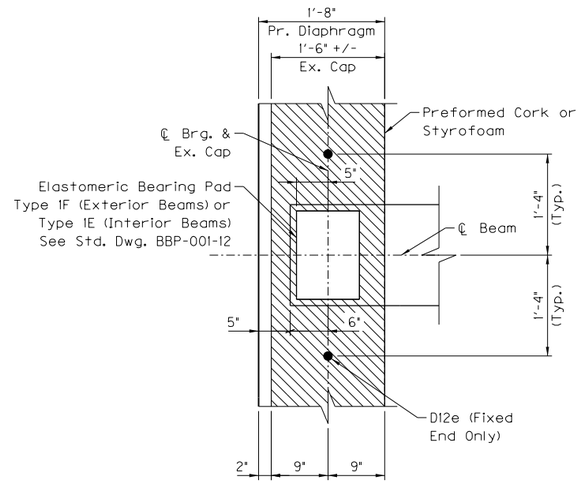
DECK PLAN
(Showing Top Rebar)



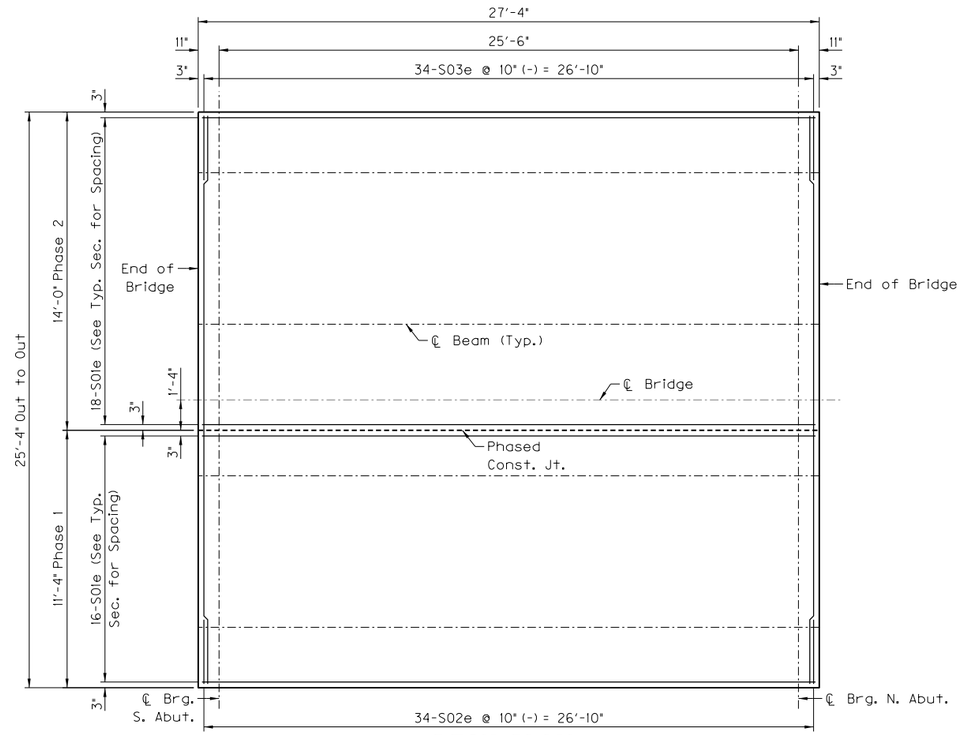
TYPE 22

Bill of Reinforcement - Deck

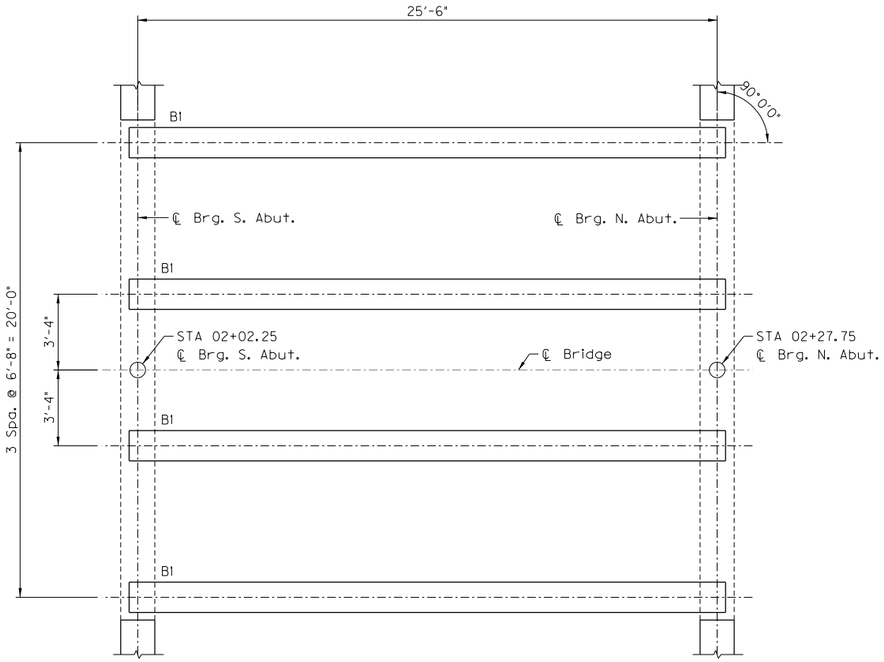
Mark	Type	Size	Phase 1	Phase 2	Length Ft.	Length In.	Location	A Ft.	A In.	B Ft.	B In.	C Ft.	C In.	D Ft.	D In.
S01e	Str.	5	28	33	27	0	Deck								
S02e	Str.	6	76	-----	11	2	Deck								
S03e	Str.	6	-----	76	13	10	Deck								
S04e	22	6	42	42	5	0	Deck	2	6	0	10	1	10		



BEARING DETAIL



DECK PLAN
(Showing Bottom Rebar)



FRAMING PLAN

NOTES

1. For Typical Section, see Sheet S04.

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: A. Foley	K. Compton

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE
US-421

CROSSING
BRANCH OF ISLAND CREEK

DECK AND FRAMING PLAN

BRIDGE NUMBER
026B00002N

PREPARED BY
AECOM

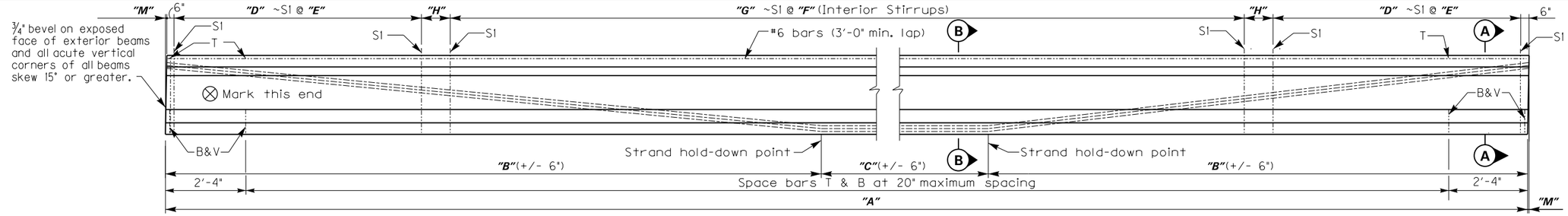
BRIDGING KENTUCKY
Restore | Renew | Replace

SHEET NO.
S10

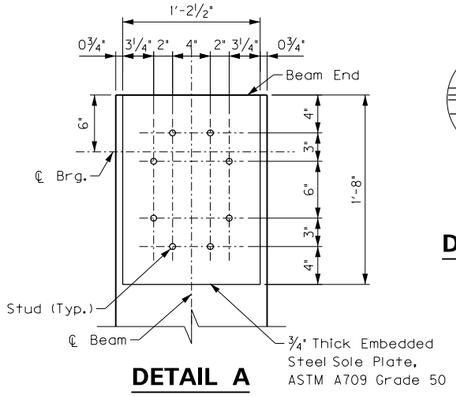
DRAWING NO.
27931

FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832

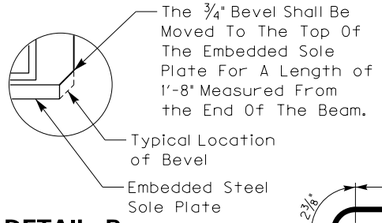
ADDED 3-11-21



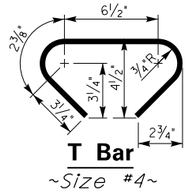
ELEVATION OF BEAM



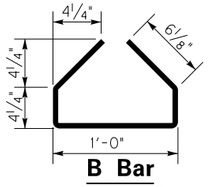
DETAIL A



DETAIL B

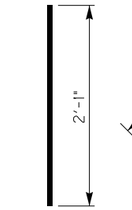


T Bar
~Size #4~

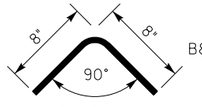


B Bar
~Size #3~

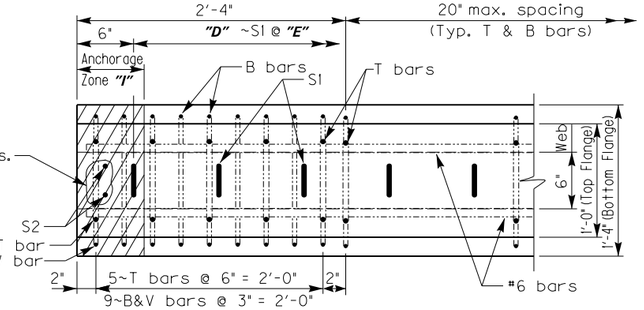
S1(e)
~Size #4~



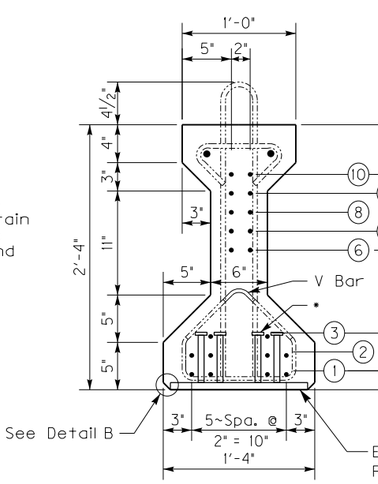
S2
~Size #5~



V Bar
~Size #3~



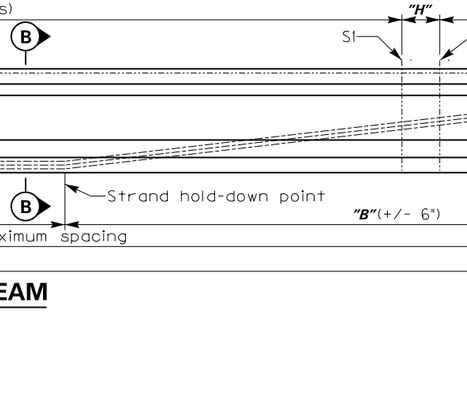
TYPICAL SQUARED END TREATMENT



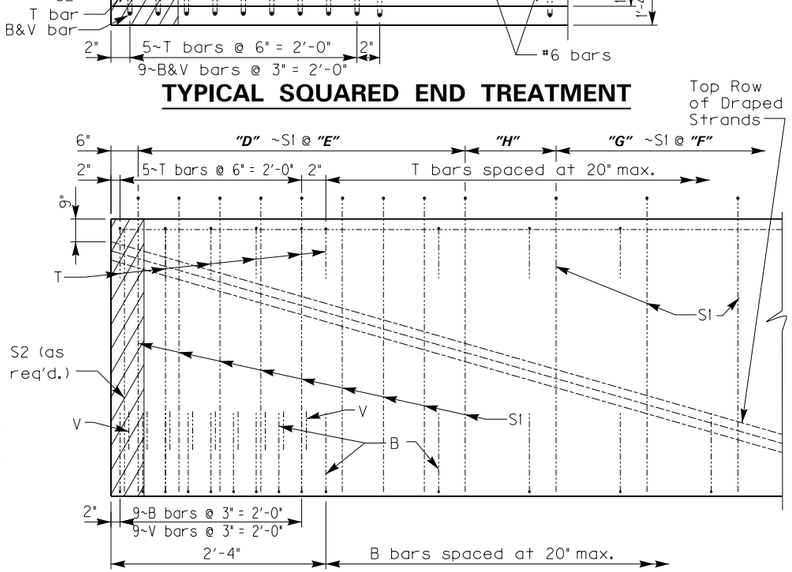
SECTION A–A

• ⅝" End Welded Stud (Typ.)

NOTE: Ensure #6 bars maintain a 1" clearance from each end of the beam.



SECTION B–B



PARTIAL SECTION ON CENTERLINE

(Embedded Sole Plate and Studs Not Shown)

General Notes

CONCRETE: Ensure prestressed girder concrete is in accordance with these plans and the specifications.

MATERIALS DESIGN SPECIFICATIONS: For prestressed beams:
FY = 60,000 psi F'S = 270,000 psi

PRESTRESSING REINFORCEMENT: Ensure that strands are ½" (nominal diameter, 0.153 sq. in.), uncoated seven-wire stress relieved, low-relaxation conforming to AASHTO M 203, Grade 270. Billing of the cost for redesign of beam and subsequent plan modifications will be made for any request of alternate strand type or arrangement. The designer of the original plans is responsible for the billing and work.

CONSTRUCTION METHOD: Pretension all beams. Ensure concrete has attained f'ci (shown in the table) in standard test cylinders that are made and cured identically with the beams without bond stresses being transferred to the concrete or releasing the end anchors. Attain f'c (shown in the table) at or prior to 28 days. Apply an initial force of 31,003 lbs. per low-relaxation strand to develop a stress of 202,500 psi. No beam will be accepted that is honeycombed to the extent that strength of the beam or resistance to deterioration has been affected. An allowance of 0.0005L is made for shortening of beams due to shrinkage and elastic change. Show a detensioning plan by sequential numbering of the strand pattern on the shop plans.

LIFTING DEVICES: Detail lifting devices on the shop plans. Loads are to be distributed equally to each device.

BEARING DEVICES: Include the price for lead plates and/or bearing pads in the bid for precast beams.

FABRICATION: The "Maximum Allowable Camber" shown on the beam sheet is the amount of camber, measured prior to casting the deck, above which the beam will begin to encroach into the slab. If the measured camber is greater than the "Maximum Allowable Camber" the contractor will be responsible for any necessary adjustments to assure a minimum slab thickness of eight (8) inches as shown in the plans. This work will be considered incidental to the completion of the structure and have the approval of the Engineer.

Strand Data with number indicated in rows

Mark	Midspan (SECTION B–B) ①	②	③	④	⑤	End (SECTION A–A) ①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	Total No.	Concrete Stress (psi) f'ci	f'c	No. of S Bars S1	S2	Hold-Down Capacity lbs.
B1	4	4	2			2	2	2				2	2			10	5500	7000	39	4	14514

Beam Data (measured along centerline)

Total No.	Dimensions A	B	C	D	E	F	G	H	I	M	Approx. Weight	Maximum Allowable Camber
4	26'-6"	10'-7"	5'-4"	9	3"	12"	21	9"	7"	0	7,984 LB	1⅞"

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: A. Foley	K. Compton

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CLAY

ROUTE: US–421 CROSSING: BRANCH OF ISLAND CREEK

PPC I–BEAM, TYPE 1 DETAILS

BRIDGE NUMBER: 026B00002N

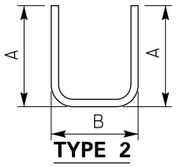
PREPARED BY: AECOM

BRIDGING KENTUCKY — Restore | Renew | Replace

SHEET NO. S11

DRAWING NO. 27931

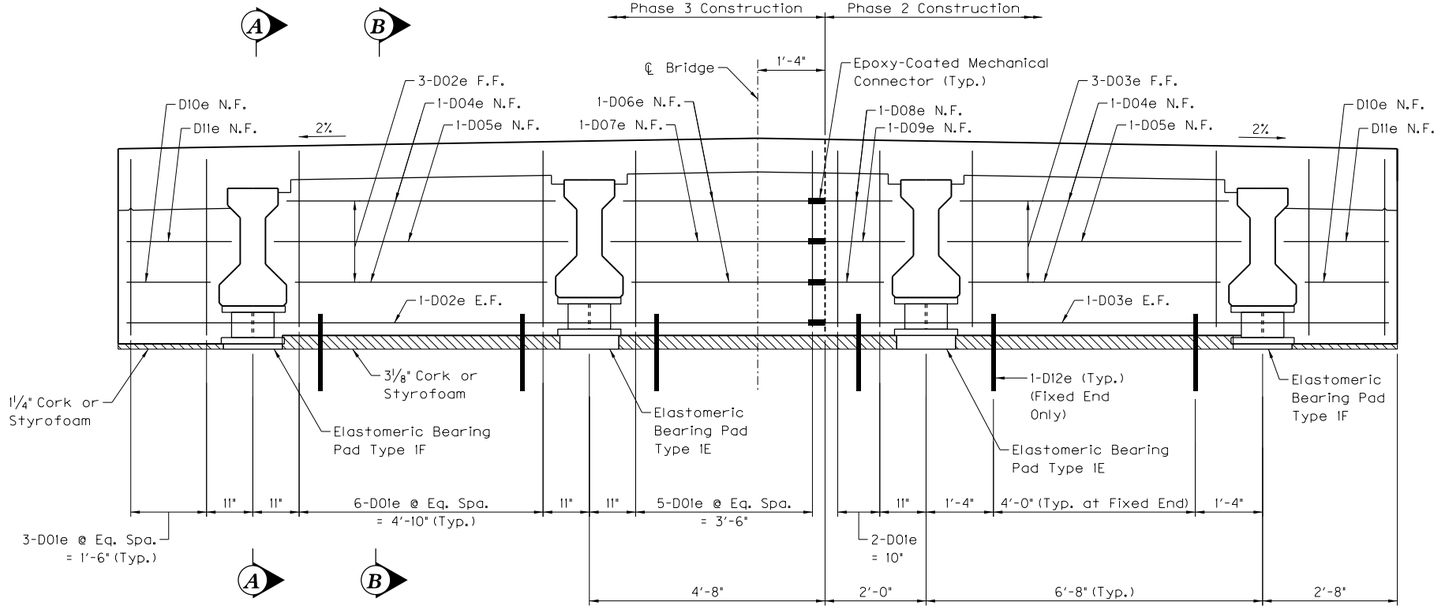
FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832



Bill of Reinforcement - Diaphragm

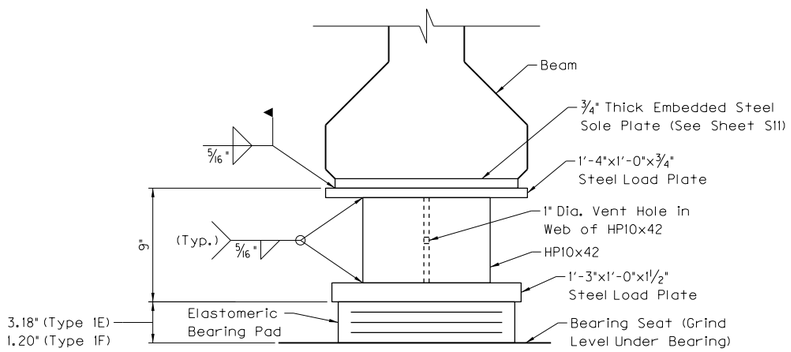
Mark	Type	Size	Phase 2 No.	Phase 3 No.	Length Ft.	Length In.	Location	A Ft.	A In.	B Ft.	B In.	C Ft.	C In.	D Ft.	D In.
D01e	2	5	22	28	8	0	Diaphragm	3	4	1	4				
D02e	Str.	5	-----	10	13	10	Diaphragm								
D03e	Str.	5	10	-----	11	2	Diaphragm								
D04e	Str.	5	4	4	5	0	Diaphragm								
D05e	Str.	5	2	2	5	10	Diaphragm								
D06e	Str.	5	-----	4	3	10	Diaphragm								
D07e	Str.	5	-----	2	4	3	Diaphragm								
D08e	Str.	5	4	-----	1	2	Diaphragm								
D09e	Str.	5	2	-----	1	7	Diaphragm								
D10e	Str.	5	2	2	1	8	Diaphragm								
D11e	Str.	5	2	2	2	1	Diaphragm								
D12e	Str.	*	3	3	1	7	Diaphragm								

* D12e - 1" Smooth Round Bar, ASTM A311, Grade 1018, Epoxy Coated.

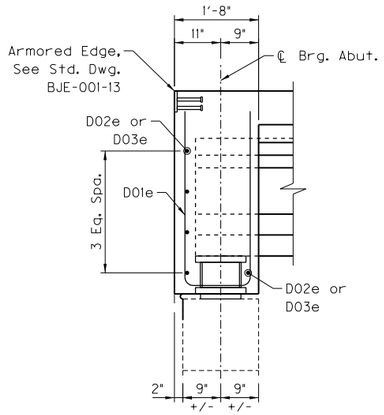


ABUTMENT DIAPHRAGM

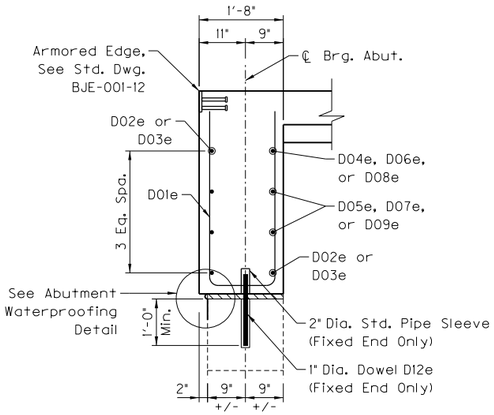
(North Abutment Diaphragm Shown, South Abutment Similar)



BEARING DETAIL

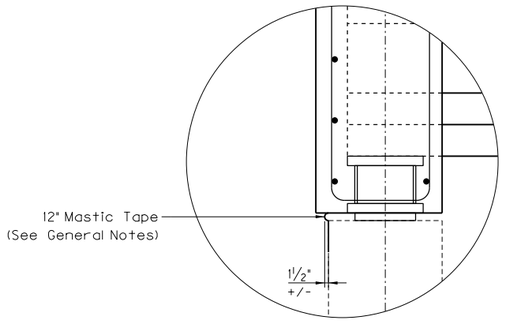


SECTION A–A



SECTION B–B

2" Dia. x 5" Pipe Sleeve shall be closed at one end. Secure pipe sleeve to prevent floating while placing concrete. Sleeve to sit on cork or styrofoam. Pipe sleeve to be incidental to Class "AA" Concrete



ABUTMENT WATERPROOFING DETAIL

NOTES

1. See Std. Dwg. BBP-001-12 for Elastomeric Bearing Pad Details.
2. Prior to placing bearings, bridge seat shall be thoroughly cleaned and ground level under bearings.
3. Steel load plates and HP posts shall be ASTM A709 Grade 50 Steel and shall be galvanized according to ASTM A123. Load plates shall be vulcanized to the elastomeric pad during the molding process. Cost of Furnishing and installating of bearing pads, load plates, sole plates and HP posts shall be considered incidental to the unit bid price for Precast PC I-Beam, Type I.
4. Control welding so that the plate temperature at the elastomer bonded surface does not exceed 300°F as determined by use of pyrometric sticks or other temperature monitoring devices.

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CLAY

ROUTE: US-421

CROSSING: BRANCH OF ISLAND CREEK

DIAPHRAGM DETAILS

BRIDGE NUMBER: 026B00002N

PREPARED BY: AECOM

BRIDGING KENTUCKY — Restore | Renew | Replace

SHEET NO. S12

DRAWING NO. 27931

FILE NAME:
USER:
DATE PLOTTED:
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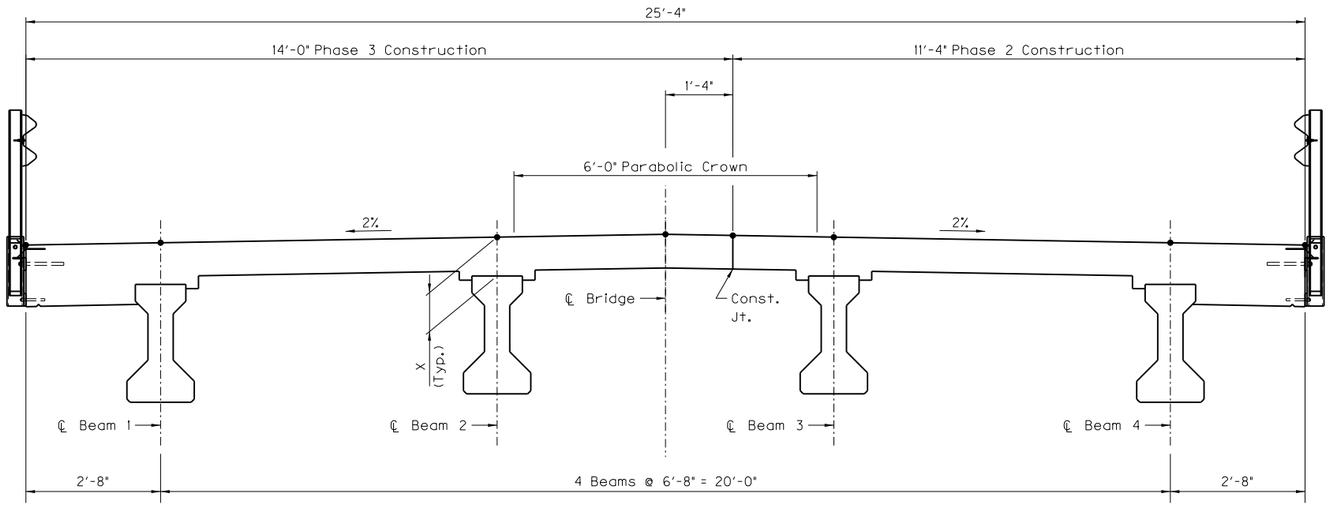
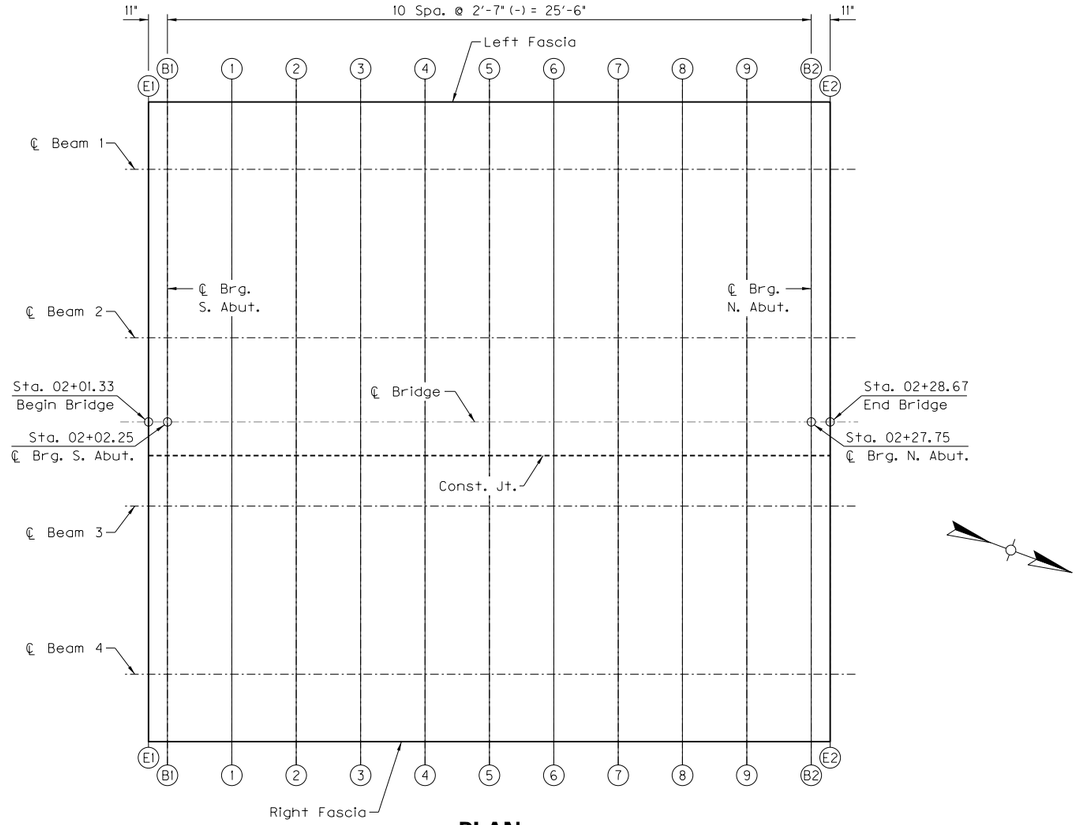


TYPICAL SECTION

- Points Where Elevations are given



PLAN

TABLE OF CONSTRUCTION ELEVATIONS

LOCATION	E1	B1	1	2	3	4	5	6	7	8	9	B2	E2
LEFT FASCIA	914.439	914.440	914.446	914.452	914.457	914.462	914.467	914.470	914.474	914.476	914.479	914.481	914.483
CONSTR. EL	914.492	914.494	914.499	914.505	914.511	914.516	914.520	914.524	914.527	914.530	914.532	914.534	914.536
TOP BM. 1 EL.													
DIMENSION X													
CONSTR. EL	914.625	914.627	914.632	914.638	914.643	914.648	914.652	914.656	914.659	914.662	914.665	914.668	914.669
TOP BM. 2 EL.													
DIMENSION X													
℄ BRIDGE	914.662	914.664	914.669	914.674	914.680	914.685	914.689	914.693	914.696	914.699	914.702	914.704	914.706
CONST. JT.	914.655	914.657	914.662	914.668	914.673	914.678	914.682	914.686	914.689	914.692	914.695	914.698	914.699
CONSTR. EL	914.625	914.627	914.632	914.638	914.643	914.648	914.652	914.656	914.659	914.662	914.665	914.668	914.669
TOP BM. 3 EL.													
DIMENSION X													
CONSTR. EL	914.492	914.494	914.499	914.505	914.511	914.516	914.520	914.524	914.527	914.530	914.532	914.534	914.536
TOP BM. 4 EL.													
DIMENSION X													
RIGHT FASCIA	914.439	914.440	914.446	914.452	914.457	914.462	914.467	914.470	914.474	914.476	914.479	914.481	914.483

NOTES FOR ELEVATIONS TAKEN ON BEAMS

Take elevations on top of beam at points indicated by the grid layout. The beam elevations are to be read to three decimals, and entered in tables under "Top of Beam" elevations.

Compute dimensions "X" as follows: "Construction Elevation" minus "Top of Beam" elevation equals dimension "X". Construction Elevations include camber due to weight of the concrete slab and railing. Measuring of dimension "X" gives the final check on beam tolerances for camber, beam damage, and errors in erection that produce reverse cambers, sags, and unsightly fascia beams. In no case shall dimension "X" values be less than 8" or greater than 12". If the elevations of the existing bridge are such that these criteria cannot be obtained, the profile grade shall be adjusted. Coordinate adjustment with the Engineer.

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

Temporary supports or shoring will not be permitted under the girders when pouring the concrete floor slab or when taking "Top of Beam" elevations.

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

Phase 3 construction joint elevation shall match the constructed Phase 2 construction joint elevation. The adjustment to the construction joint shall also be applied to other lines in Phase 3 to maintain a constant cross slope.

Note to Resident: The "Maximum Allowable Camber" shown on the beam sheet is the amount of camber, measured prior to casting the deck, above which the beam will begin to encroach into the slab.

NOTES

1. See Sheet S04 for Parabolic Crown Detail.

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: A. Foley	K. Compton

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

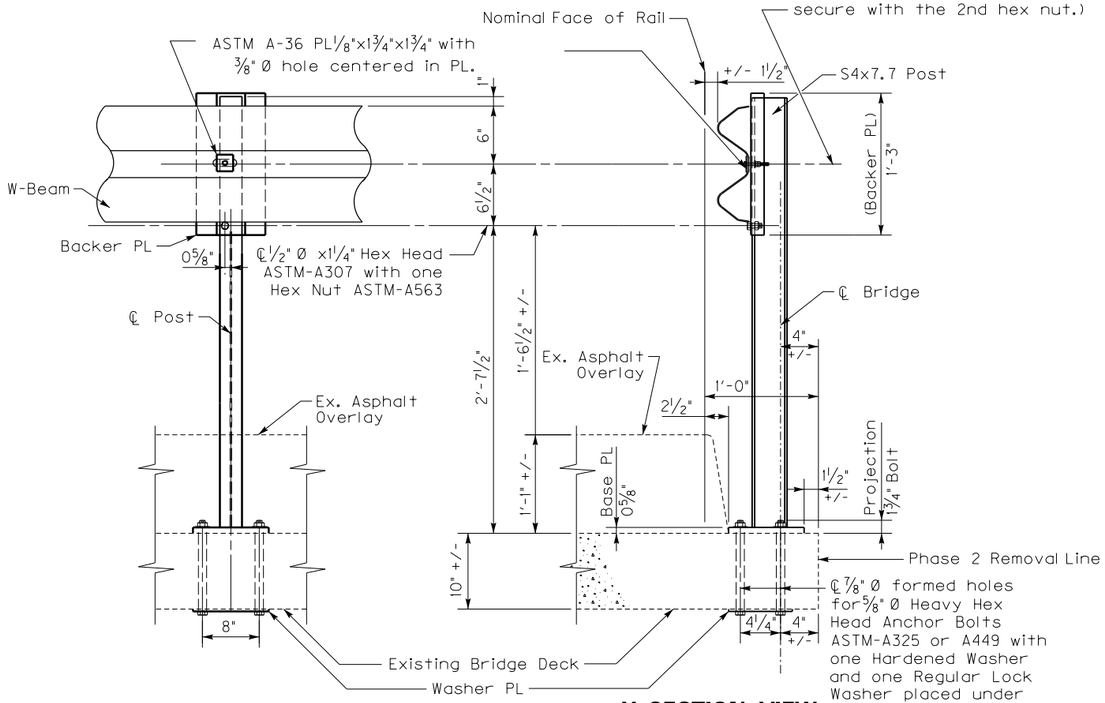
ROUTE	CROSSING
US-421	BRANCH OF ISLAND CREEK

CONSTRUCTION ELEVATIONS

BRIDGE NUMBER	PREPARED BY	SHEET NO.
026B00002N	AECOM / BRIDGING KENTUCKY (Restore | Renew | Replace)	S13
		DRAWING NO. 27931

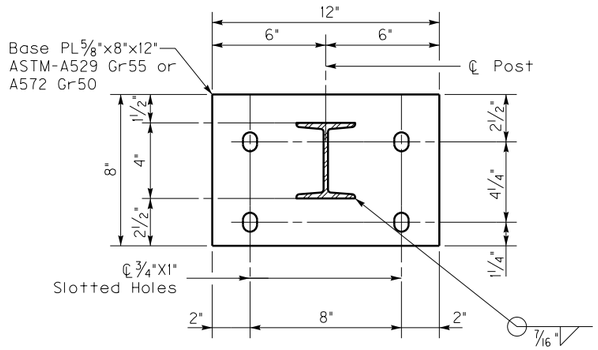
FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
Power GEOPAK v8.11.9.832

℄ 5/16" Ø x2 1/2" Hex Head Bolt ASTM-A307 with one Regular Washer and one Regular Lock Washer placed under two Hex Nuts. (Tighten the first hex nut by hand until the top and bot. edges of the W-beam engage the backer plate snug against the post. Then tighten hex nut one revolution with wrench and secure with the 2nd hex nut.)

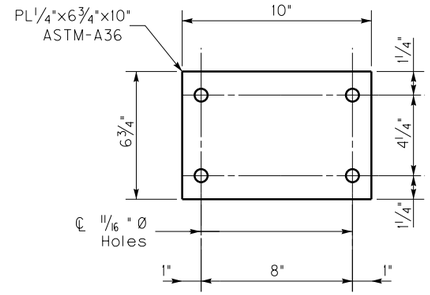


TRAFFIC VIEW

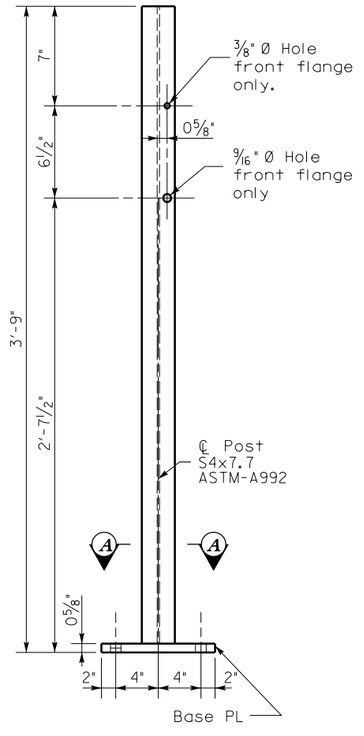
X–SECTION VIEW



SECTION A–A



WASHER PLATE



POST ELEVATION

NOTES

1. These details are modified from Std. Dwg. BHS-012, Railing System Type T631 Details. For details not shown here, see Std. Dwg. BHS-012.
2. These modifed Railing System Type T631 details are to be used only where shown on Sheet S05.

REVISION	DATE

DATE: 8/23/2019	CHECKED BY
DESIGNED BY: K. Compton	T. Baker
DETAILED BY: K. Compton	T. Baker

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
CLAY

ROUTE	CROSSING
US–421	BRANCH OF ISLAND CREEK

MODIFIED RAILING SYSTEM TYPE T631

BRIDGE NUMBER	PREPARED BY	SHEET NO.
026B00002N	AECOM	S14
	BRIDGING KENTUCKY Restore | Renew | Replace	DRAWING NO. 27931

FILE NAME:
USER:
DATE PLOTTED:
E-SHEET NAME:
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