



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET

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Andy Beshear
GOVERNOR

Jim Gray
SECRETARY

November 4, 2020

CALL NO. 105
CONTRACT ID NO. 205188
ADDENDUM # 1

Subject: GRAYSON COUNTY, STP BRZ 9030 (281)
Letting November 20, 2020

(1)Added - Special Notes - Pages 1-62 of 62

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in black ink that reads "Rachel Mills".

Rachel Mills, P.E.
Director
Division of Construction Procurement

RM:mr
Enclosures

SPECIAL NOTE FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS

GRAYSON County SYP 4-10023.00

I. TRAFFIC CONTROL GENERAL

Except as provided herein, traffic shall be maintained in accordance with the current standard specifications, section 112. The contractor will be responsible for developing and implementing the maintenance of traffic details with guidance through standard drawings and the MUTCD current editions. The developed traffic control plan must be approved by the Engineer prior to implementation. The contractor is expected to provide at a minimum the items listed in this note, however this note does not relieve the contractor of other items that may be necessary to comply with current standards. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic will be paid at the lump sum bid price to “Maintain and Control Traffic”.

Contrary to section 106.01, traffic control devices used on this project may be new or used in new condition, at the beginning of the work and maintained in like new condition until completion of the work.

The contractor must notify the engineer and public information officer at least 14 calendar days prior to the beginning work. Please see the Special Note for Liquidated Damages for additional information.

II. TRAFFIC COORDINATOR

Furnish a traffic coordinator as per section 112. The traffic coordinator shall inspect the project maintenance of traffic, at least three times daily, or as directed by the engineer, during the contractor’s operations and at any time a bi-directional lane closure or road closure is in place. The personnel shall have access on the project to a radio or telephone to be used in case of emergencies or accidents. The traffic coordinator shall report all incidents throughout the work zone to the engineer on the project. The contractor shall furnish the name and telephone number where the traffic coordinator can be contacted at all times.

III. SIGNS

The contractor is responsible for all signage during construction. The contractor shall adhere to the standard drawings and manual on uniform traffic control devices (MUTCD) for guidance. If, at any time, the engineer requests a change in the maintenance of traffic signage, the contractor shall implement the change within 8 hours. Failure to implement these changes within the required eight hours will result in liquidated damages of \$5,000 per day.

The contractor shall provide all detour signing needed for the bridge closure, if allowed in the contract documents. All signing required will be incidental to the lump sum bid item “Maintain and Control Traffic”.

The department will not measure installation, maintenance, or removal for payment of any detour signage or standard construction signage, and will consider these incidental to “Maintain and Control Traffic”

Closure signs, detour signs, and bi-directional lane closure signs should be placed no sooner than two weeks prior to the closing of the bridge (when applicable) or placing lane closures. Wayfinding detour signs should be placed a maximum of 2 miles apart unless specified by the engineer. Signs shall be covered or removed within 24 hours of opening the bridge to traffic.

Road closed signs (when applicable) should be double signed and placed a minimum of 1500’, 1000’, and 500’ in advance of the closure, in addition to signage required by the MUTCD and standard drawings.

IV. TEMPORARY PAVEMENT STRIPING

For projects where road closures are allowed in the contract documents, it is not anticipated that temporary pavement striping will be needed since the bridge will be closed. However, if the contractor’s means and methods allows for need for temporary striping, conflicting pavement marking will be covered with 6” black removable tape. However, for bi-directional lane closures or if the plans call for a diversion, temporary striping will be required per the plans and MUTCD. Contrary to the standard specifications, no direct payment will be made for any temporary striping, pavement striping removal, or any other temporary striping item. If temporary striping is used, the contractor shall replace any temporary striping that becomes damaged or fails to adhere to the pavement before dark on the day of the notification. Liquidated damages shall be assessed to the contractor at a rate of \$500 per day for failing to replace temporary striping within this time limit.

V. PROJECT PHASING & CONSTRUCTION PROCEDURES

Project phasing shall be as directed by the plans, special notes, and the approved Traffic Control Plan prepared by the contractor. Maintain traffic over the bridge as long as possible. Once work on the structure begins that impacts traffic, ensure work progresses to minimize the effected time to the public. All materials that must be made specific for the project should be ordered and made prior to closure of the bridge or implementation of bi-directional lane closures so that delivery does not delay progress of the work, unless approved by the Engineer. If the bridge is reopened prior to safety devices being in place, an approved protective barrier wall shall be placed in accordance to the standard drawings. Contrary to standard specifications, no direct payment would be made for the barrier wall and will be considered incidental to “Maintain and Control Traffic”.

For projects which require an on-site diversion to be constructed to maintain traffic, the traffic control plan and project schedule prepared by the contractor shall include provisions such that traffic is not switched to the diversion until all materials that must be made specific for the project are ordered and made so that use of the diversion is minimized, unless approved by the Engineer.

VI. PAVEMENT DROP-OFF

Less than two inches - no protection required. Warning signs should be placed in advance and throughout the drop-off area.

Two to four inches - plastic drums, vertical panels or barricades every 100 feet on tangent sections for speeds of 50 mph or greater. Cones may be used in place of plastic drums, panels and barricades during daylight hours. For tangent sections with speeds less than 50 mph and curves devices should be placed every 50 feet. Spacing of devices on tapered sections should be in accordance with the manual on uniform traffic control devices, current edition.

Greater than four inches - positive separation or wedge with 3:1 or flatter slope needed. If there is five feet or more distance between the edge of the pavement and the drop-off, then drums, panel, or barricades may be used. If the drop-off is greater than 12 inches, positive separation is strongly encouraged. If concrete barriers are used, special reflective devices or steady burn lights should be used for overnight installations.

For temporary conditions, drop-offs greater than four inches may be protected with plastic drums, vertical panels or barricades for short distances during daylight hours while work is being done in the drop-off area.

VII. VARIABLE MESSAGE SIGNS AND TEMPORARY TRAFFIC SIGNALS

At the direction of the Engineer, the contractor is expected to provide up to four (4) message boards for use at locations determined by the Engineer. These message boards are expected to be in place one week prior to the closure of the roadway and remain in place for the duration of the closure. The message boards will be paid for as per the standard specifications.

For projects that involve the use of lane closures, all lane closures shall be bi-directional. The contractor shall provide temporary traffic signals and all labor, materials, and incidentals needed to maintain bi-directional traffic for the project. For short term bi-directional lane closures, the use of flaggers in lieu of temporary traffic signals may be acceptable if approved by the Engineer.

VIII. BARRICADES

For projects which allow full closure, ensure a minimum of (4) type III barricades are used at each end of the bridge for a total of (8) type III barricades. Contrary to the standard specifications, no direct payment will be made for barricades but they will be included in the lump sum price for "Maintain and Control Traffic".

VIII. DETOUR AND ON SITE DIVERSIONS

For projects which allow a full closure of the bridge, or if necessary to detour trucks, the traffic control plan proposed by the contractor shall include a signed detour route for the road closure. The traffic control plan along with the proposed detour plan will be delivered to the engineer 7

days prior to the pre-construction meeting. The proposed detour route shall meet the following requirements:

- 1) Detour routes must remain at minimum on the same classification of roadway (i.e. AA, AAA, state, county, etc.) Unless written approval is obtained through the owner of the facility.
- 2) The contractor must coordinate with other projects along the detour route in order to avoid ongoing construction projects along those routes.
- 3) It may be determined that two detour routes would be needed if the first selected route cannot accommodate truck traffic. If this occurs, the contractor is expected to sign both detours per the standard drawings and MUTCD. Additional clarification signage between the detours may be needed at points where they diverge.
- 4) For projects that involve the use of bi-directional lane closures and the temporary lane width per the plans or as proposed by the contractor is less than 10 feet, the contractor shall be required to provide a signed detour for oversized vehicles.

The traffic control plan must be submitted and approved to allow for coordination of the public information officer with the closure notification. The public must be notified of the proposed detour route when they are notified of the closure, 2 weeks before closure. All time and expenses necessary for the development of the detour plan(s) will be incidental to the lump sum bid item "Maintain and Control Traffic".

For projects with an on-site diversion included in the construction, the preparation of traffic control plans for a detour and implementation of a detour will not be required, unless specified in the plans.

IX. PAYMENT

Unless listed as a bid item in the contract documents, payment will only be made for the following items:

1. Portable Changeable Message Boards - Each
2. Maintain and Control Traffic - Lump Sum

All other items needed to maintain traffic in accordance with these contract documents and the approved traffic control plan shall be considered incidental to Maintain and Control Traffic. These items include but are not limited to traffic signals, signs, barrier wall, crash cushions, temporary guardrail, temporary and permanent pavement striping, cones, barrels, flaggers, etc.

SPECIAL NOTE FOR PLACING BRIDGE OVERLAY APPROACH PAVEMENT
GRAYSON County SYP 4-10023.00

I. DESCRIPTION

Perform all work in accordance with the Kentucky Transportation Cabinet, Department of Highway's current Standard Specifications for Road and Bridge Construction and applicable Supplemental Specifications, the Standard Drawings, this Note, and the Contract Documents. Section references are to the Standard Specifications.

This work consists of the following:

1. Furnish all labor, materials, tools, and equipment.
2. Removal of existing abutment backfill, if needed.
3. Structural Granular Backfill, as needed.
4. Mill the existing pavement.
5. Place new DGA, asphalt base, and asphalt surface
6. Repair the roadway shoulders, if needed.
7. Provide Pavement Markings if needed.
8. Any other work specified as part of this contract.

II. MATERIALS

- A. Structural Granular Backfill.** See Section 8.05.11
- B. DGA.** See Section 302.
- C. Tack Coat.** This material shall be in accordance with the Standard Specifications.
- D. CL2 ASPH BASE 1.0D PG 64-22.** See Standard Specifications
- E. ASPHALT LEVEL AND WEDGE.** See Standard Specifications
- F. CL2 ASPH SURF 0.38D PG 64-22.** This material shall be in accordance with the Standard Specifications.
- G. GRANULAR EMBANKMENT.** This material shall be in accordance with the Standard Specifications.
- H. Pavement Striping.** See Section 713.

III. CONSTRUCTION – DECK, SUPERSTRUCTURE, AND FULL BRIDGE REPLACEMENTS

- A. Foundation Preparation.** For projects involving the removal and replacement of the asphalt and backfill behind the existing abutments and new abutments or end bents, the required excavation, geotextile fabric Class 1 or 2, 4" perforated pipe, and new backfill as shown in Figure 1 as well as any excavation and grading needed to shape the bridge approaches to match the existing roadway template, will be paid for by the bid item for Foundation Preparation. See Special Provision 69 and the Standard Drawings regarding additional construction details as required.

Backfill material used behind newly constructed abutments on county routes may be constructed with Type III soil backfill. All existing abutments, abutments on state routes, and newly constructed or existing bents must be backfilled with material meeting Structural Granular Backfill specifications.

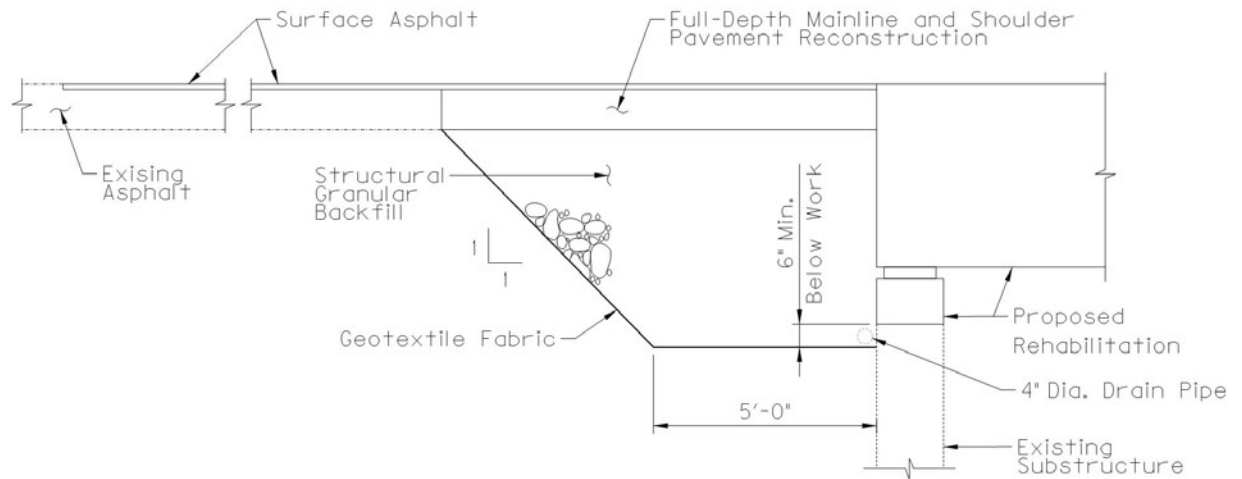


Figure 1: Detail showing proposed work for deck and superstructure replacements

- B. Remove Existing Asphalt Surface.** Remove the existing pavement material beyond the limits of full depth asphalt replacement to provide for a minimum of 1¼” new pavement surface from the bridge end extending approximately 25 feet, or as shown in the plans, into the approach pavement and across the width of the approach pavement. The Engineer shall determine the actual length and width of the milling depending on site conditions at each bridge approach. Mill the existing surface so that the new asphalt surface will match the elevation of the end of the full depth asphalt replacement and the bridge end. The Engineer shall approve the Contractor’s plan for restoring the approach grade prior to the removal of the existing surface. Dispose of all removed material entirely away from the job site or as directed by the Engineer.
- C. Produce and Place New Asphalt Base.** Replace any full depth mainline and shoulder pavement removed as part of bridge backwall construction, superstructure replacement, or other work (if included in the Contract Documents) with a minimum of 8 inches of DGA, placed in two lifts of 4 inches each compacted and 8 inches of CL2 ASPH BASE 1.0D PG 64-22, placed in two lifts of 4 inches each compacted. Final elevation of the Asphalt Base at the approaches to match the width and new elevation of the riding surface on the bridge less the New Asphalt Surface to be placed. Shoulders shall receive identical treatment to the mainline pavement.
- D. Produce and Place New Asphalt Surface.** Apply an asphalt tack coat in accordance with Section 406. Produce and place the new 1 ¼” Asphalt Surface in accordance with Section 403 and compact under Option B. The new asphalt surface mixture required for this project shall be “CL2 ASPH SURF 0.38D PG 64-22”. Place the new asphalt surface to smoothly connect the existing roadway grade at the end of the project, and/or the new abutment backwall.
- E. Granular Embankment for Guardrails.** When necessary to ensure compliance with standards, widen shoulders behind guardrail with granular embankment and cap with

DGA in accordance with plans or as directed by the Engineer. Remove existing topsoil as needed and place embankment in a manner to ensure proper compaction.

- F. Pavement Markings.** Pavement striping will be required to match the existing pavement striping on both approaches and the structure. Pavement striping shall be in accordance with applicable sections of the Standard Specifications and shall be incidental to the work. Raised pavement markers within the limits of the “Bridge Overlay Approach Pavement” shall be removed prior to the milling operation. The marker castings shall be cleaned and returned to the Engineer.

IV. CONSTRUCTION – OVERLAY PROJECTS

- A. Remove Existing Materials.** Remove the existing pavement material to provide for a minimum of 1¼” new pavement surface from the bridge end extending approximately 25 feet, or as shown in the plans, into the approach pavement and across the width of the approach pavement. The Engineer shall determine the actual length and width of the milling depending on site conditions at each bridge approach. Mill the existing surface so that the new asphalt surface will tie into the new armored edge, if applicable, and matches the elevation of the bridge end. The Engineer shall approve the Contractor’s plan for restoring the approach grade prior to the removal of the existing surface. Dispose of all removed material entirely away from the job site or as directed by the Engineer.
- B. Mainline and Shoulder Reconstruction.** Replace shoulders in kind at the approaches to match the width and new elevation of the riding surface on the bridge. Shoulders shall receive identical treatment to the mainline pavement.
- C. Produce and Place New Asphalt Surface.** Apply an asphalt tack coat in accordance with Section 406. Produce and place the new 1 ¼” Asphalt Surface in accordance with Section 403 and compact under Option B. The new asphalt surface mixture required for this project shall be “CL2 ASPH SURF 0.38D PG 64-22”. Place the new asphalt surface to smoothly connect the existing roadway grade at the end of the project and the bridge end.

For bridge decks specified to receive a new asphalt overlay as part of the work, place asphalt level and wedge and CL2 ASPH SURF 0.38D PG 64-22 as detailed in the plans to smoothly connect to the bridge approaches. If plans call for use of a waterproof membrane, this shall be addressed as a separate bid item.

- D. Granular Embankment for Guardrails.** When necessary to ensure compliance with standards, widen shoulders behind guardrail with granular embankment and cap with DGA in accordance with the plans or as directed by the Engineer. Remove existing topsoil as needed and place embankment in a manner to ensure proper compaction.
- E. Pavement Markings.** Pavement striping will be required to match the existing pavement striping on both approaches and the structure. Pavement striping shall be in accordance with applicable sections of the Standard Specifications and shall be incidental to the work. Raised pavement markers within the limits of the “Bridge

Overlay Approach Pavement” shall be removed prior to the milling operation. The marker castings shall be cleaned and returned to the Engineer.

V. MEASUREMENT

- A. Granular Embankment: The Department will measure the quantity in cubic yards. The Department will measure along the centerline to determine a linear foot of placement multiplied by a theoretical cross section of 12 square feet to achieve the quantity per side of the roadway.
- B. Bridge Overlay Approach Pavement: The Department will measure the quantity of in square yards. The Department will measure along the centerline from each end of the limits of the work as detailed on the plans to the point where the new pavement ties into the exiting pavement and across the width of the new pavement perpendicular to the centerline of the roadway.
- C. Foundation Preparation: See Section 603.

VI. PAYMENT

- A. Granular Embankment: Payment at the contract unit price per cubic yard of granular embankment is full compensation for granular embankment and DGA used for widening the shoulder for guardrail as directed. Variance of actual cross sectional quantities versus theoretical quantities will not be considered for additional payment.
- B. Bridge Overlay Approach Pavement: Payment at the contract unit price per square yard of is full compensation for removing existing pavement markers, mobilization of milling equipment, removing specified existing pavement material, reconstruct shoulders as needed, furnishing and installing the asphalt tack coat, producing and placing the new asphalt and DGA, and all incidental items necessary to complete the work within the specified pay limits as specified by this note and as shown in the Contract Documents.
- C. Foundation Preparation: See Section 603. Payment for Structural Granular Backfill or Type III soil backfill to be incidental to Foundation Preparation.

<i>Code</i>	<i>Pay Item</i>	<i>Pay Unit</i>
02223	Granular Embankment	Cubic Yards
03304	Bridge Overlay Approach Pavement	Square Yards
08803	Foundation Preparation	Lump Sum

The Department will consider payment as full compensation for all work required.

SPECIAL NOTE FOR CONCRETE PATCHING REPAIR
GRAYSON County SYP 4-10023.00

These Notes or designated portions thereof, apply where so indicated on the plans, proposals or bidding instruction.

- I. DESCRIPTION.** Perform all work in accordance with the Department's current Standard Specifications for Roads and Bridges, and applicable Supplemental Specifications, the attached sketches, and these Notes. Section references are to the Standard Specifications.

This work consists of: (1) Furnish all labor, materials, tools, and equipment; (2) Remove existing spalled/delaminated concrete; (3) Prepare the existing surface for concrete patching; (4) Place hook fasteners and welded wire fabric over surfaces to be repaired (where applicable); (5) Apply concrete patching as specified by this note and as shown on the attached detail drawings; (6) Finish and cure the new Concrete Patches; (7) Maintain & control traffic; and, (8) Any other work specified as part of this contract.

II. MATERIALS.

- A. Self-Consolidating Concrete.** Refer to list of approved materials or Kentucky Product Evaluation List.
- B. Vertical and Overhead Patch Material.** From approved KYTC Division of Materials List.
- C. Steel Reinforcement.** Use Grade 60. See Section 602
- D. Welded Steel Wire Fabric (WWF).** Conform to Section 811
- E. Hook Fasteners.** Use commercial grade galvanized hook fasteners. Minimum 3/16" diameter.

III. CONSTRUCTION.

- A. Concrete Removal and Preparation.** The Contractor, as directed by the Engineer shall locate and remove all loose, spalled, deteriorated and delaminated concrete. Sounding shall be used to locate delaminated areas. Care shall be exercised not to damage areas of sound concrete or reinforcing steel during concrete removal operations. Concrete removal shall be in accordance with a sequence approved by the Engineer.

Concrete removal shall be accomplished by chipping with hand picks, chisels or light duty pneumatic or electric chipping hammers (not to exceed 15 lbs.).

Remove all deteriorated loose concrete a minimum depth of $\frac{3}{4}$ " behind bar, and at least $\frac{1}{4}$ " greater than the largest size of aggregate in the repair mix., Care shall be taken to not damage bond to adjacent non-exposed reinforcing steel during concrete removal processes. Unless specifically *directed by the Engineer*, depth of removal shall not exceed 6 inches. The outer edges of all chipped areas shall be saw cut to a minimum depth of 1 inch to prevent featheredging unless otherwise approved by the Engineer.

The perimeter of all areas where concrete is removed shall be sawcut at a 90° angle.

After all deteriorated concrete has been removed; the repair surface to receive concrete patching shall be prepared by abrasive blast cleaning or water blast cleaning (greater than 5,000 psi). 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 abrasive blast cleaning shall produce a Concrete Surface Profile (CSP) of a 6 or greater as per the current guidelines established by the International Concrete Repair Institute (ICRI), Technical Guideline 310.2R-2013.

The Contractor shall dispose all removed material in an approved site.

- B. Steel Reinforcement.** All corroded reinforcing steel exposed during concrete removal shall have corrosion products removed by abrasive grit blasting or wire brush whichever is more appropriate. Furnish for replacement, as directed by the Engineer, additional linear feet of steel reinforcing bars $\frac{1}{2}$ " diameter by 20-foot lengths. Place these bars in areas deemed by the Engineer to require additional reinforcement. Field cutting and bending is permitted. Deliver unused bars to the nearest County Maintenance Barn.

Reinforcing steel displaying deep pitting or loss of more than 20 percent of cross-sectional area shall be removed and replaced.. Reinforcement shall be placed such that the minimum spacing around each bar is three times the maximum aggregate size to allow for proper encapsulation with concrete patching.

Intersecting reinforcing bars shall be tightly secured to each other using tie wire and adequately supported to minimize movement during concrete placement.

- C. Concrete Repairs.** Place and finish the new concrete for the patching area in accordance with the manufacturer's recommendations, as shown on the

attached detail drawings, and as directed by the Engineer. For repairs greater than 1 square foot in surface area, the contractor must use self-consolidating repairs and use a form-and-pour technique (hand application is not allowed). Vertical and Overhead Patching material may be applied by hand troweling for repairs less than one square foot. The Engineer shall approve the Contractor's method of placing and consolidating the concrete prior to the beginning of this operation.

- D. Curing.** On completion of finishing operation, patching concrete shall immediately be prevented from drying out and cracking by fogging, wetting, and/or any appropriate method approved by the Engineer. Curing shall continue for the duration recommended by the product manufacturer.

- F. Quality Control/Testing.** After completion of the curing, tensile bond testing shall be performed. The testing shall be in accordance with ICRI Technical Guideline 210.3R and ASTM C1583/C1583M. Up to one location per substructure unit and one location per span shall be performed, as directed by the Engineer. Repair of the test areas is to follow the guidance in this note. No additional payment will be made for testing or for the repair of testing locations.

Each Contractor submitting a bid for this work shall make a thorough inspection of the site prior to submitting his bid and shall thoroughly familiarize himself with existing conditions so that the work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made. Any claims resulting from site conditions will not be honored by the Department. Quantities given are approximate. The quantity for "Concrete Patching Repair" shall be bid with the contingency that quantities may be increased, decreased, or eliminated by the Engineer. Dispose of all removed material entirely away from the job site as approved by the Engineer. This work is incidental to the contract unit price for "Concrete Patching Repair".

IV. MEASUREMENT

- A. Concrete Patching Repair.** The Department will measure the quantity per square feet of each area restored. Double payment will not be made on both faces of corner repairs.

- B. Steel Reinforcement.** See Section 602. Steel reinforcement will not be measured for payment, but shall be considered incidental to "Concrete Patching Repair".

V. PAYMENT

- A. Concrete Patching Repair.** Payment at the contract unit price per square feet is full compensation for the following: (1) Furnish all labor, materials, tools, equipment; (2) preparation of specified areas including removing and disposing of specified existing materials; (3) place, finish and cure new concrete patches; and (4) all incidentals necessary to complete the work as specified by this note and as shown on the attached detail drawings.
- B. Steel Reinforcement.** See Section 602.

The Department will consider payment as full compensation for all work required by these notes and detail drawings.

SPECIAL NOTE FOR CONCRETE COATING
GRAYSON County SYP 4-10023.00

I. DESCRIPTION

Perform all work in accordance with the Kentucky Transportation Cabinet, Department of Highways current Standard Specifications for Road and Bridge Construction and applicable Supplemental Specifications, the Standard Drawings, this Note, and the Contract Documents. Section references are to the Standard Specifications.

This work consists of the following:

1. Furnish all labor, materials, tools, equipment, and incidental items necessary to complete the work.
2. Provide safe access to the bridge, in accordance with Section 107.01.01, for the Engineer to sound possible repair areas and for workers to complete the construction.
3. Repair cracks as applicable in accordance with the Special Note for Epoxy Injection Crack Repair.
4. Repair delaminated or spalled areas as applicable in accordance with the Special Note for Concrete Patching.
5. Apply Ordinary Surface Finish
6. Prepare the surfaces to receive coating.
7. Apply concrete coating.
8. Any other work as specified as part of this contract.

II. MATERIALS

One of the following coating systems shall be used:

<u><i>Manufacturer</i></u>	<u><i>Prime Coat</i></u>	<u><i>Finish Coat</i></u>
Sherwin Williams	Macropoxy 646	Acrolon 218 HS
PPG	Amerlock 2	Devoe Devflex HP
Carboline	Carboguard 890	Carbothane 133 HB
Tnemec	Elastogrip 151	Envirocrete 156

The finish product shall be opaque and satin or semi-gloss. The contractor must apply sufficient coats as required to achieve this goal. The finish coat shall be gray and will meet the following values:

	<u>Fed. Standard 595B No.</u>	<u>L*</u>	<u>a*</u>	<u>b*</u>
Gray	X6492	74.94	-1.54	3.92

Furnish to the Engineer copies of the manufacturer’s technical data sheets, installation guidelines, material safety data sheets, and other pertinent data at least two (2) days prior to beginning the work.

III. CONSTRUCTION

- A. Perform Concrete Repairs.** Repair concrete surface in accordance with the Special Note for Epoxy Injection Crack Repair and/or the Special Note for Concrete Patching Repair if included in the contract documents.
- B. Apply Ordinary Surface Finish.** In addition to new concrete, areas receiving epoxy injection, concrete patching, and other surface imperfections, including areas of minor cracking, should receive Ordinary Surface Finish in accordance with Section 601.03.18 of the Standard Specifications. Use mortar of the same cement and fine aggregate as the concrete patching, or as directed by the Engineer. Payment will be incidental to Concrete Sealing.
- C. Areas to Receive Concrete Coating:**
1. Substructure Units under open, closed, and/or sealed transverse deck joints:
Every exposed surface above a point 6" below ground or fill line of abutments, wing walls, end bent and pier caps, pedestals, back walls, columns, and exposed footings.
 2. Other areas of the bridge as specified in the drawings.
- D. Prepare Concrete Surfaces for Repair.** All areas specified shall be pressure washed. Equip the pressure washers with calibrated gages and pressure regulators to ascertain and regulate water pressure. All equipment for pressure washing shall be operated at a minimum pressure of up 3,500 to 4,500 psi with 0 degree spinner tip and/or fan tips as determined by the engineer at the working location with a minimum flow rate of 3.5 gal/minute provided that these pressures do not damage any components of the structure. Pressure and flow rates shall be reduced to a level satisfactory to the Engineer should any damage occur due to power washing procedures. The washing wand must be approximately perpendicular to the washed surface and within a maximum of 12 inches of the surface. Wand extensions greater than 36 inches will be subject to Division of Construction approval. Pressure washing of any bridge element will proceed from top of wash area to bottom of wash area. Perform all pressure washing at temperatures above 40 degrees Fahrenheit.
- E. Apply Concrete Coating.** All areas specified shall have concrete coating applied to as specified after debris removal and power washing. New concrete shall be allowed to properly cure in accordance with the manufacturer's recommendations prior to application. Use compressed air to remove any loose debris from the surfaces that are to be coated after power washing. All coatings shall be applied within manufacturers recommended dry film thickness range. Comply with KYTC "Standard Specifications for Road and Bridge Construction" Section 614.03.02 and coatings supplier recommended conditions for application. Allow the surfaces to be coated to dry a minimum of 24 hours before any coating is applied. The coating must be applied with 72 hours of pressure washing. The coating must be applied to a clean and dry surface. All coating application shall be executed using brushes, rollers, etc. No spray application will be permitted.

The Department requires acceptance testing of samples obtained on a per-lot basis per-shipment. The Division of Materials shall perform acceptance testing. Test samples shall be taken at the Contractor's paint storage site. Department personnel shall perform sampling. Allow (10) working days for testing and approval of the sampled paint. It is the Contractor's responsibility to maintain an adequate inventory of approved paint. The Department shall assume no responsibility for lost work due to rejection of paint or approved paint subsequently found to be defective during the application process. Perform all concrete coating application at temperatures above 40 degrees Fahrenheit or in accordance with manufactures specifications.

IV. MEASUREMENT

The Department will measure the quantity as lump sum. The Department will not measure preparation of the site for the Engineer's access or removal and reapplication of coatings that do not satisfy the Engineer's approval for payment and will consider them incidental to "Concrete Coating".

V. PAYMENT.

The Department will make payment for the completed and accepted quantities of concrete coating under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24982EC	Concrete Coating	Lump Sum

The plans may show an estimate quantity in square feet. The Department will consider payment as full compensation for all work required as described in this note.

SPECIAL NOTE FOR CONCRETE SEALING

GRAYSON County SYP 4-10023.00

These Notes or designated portions thereof, apply where so indicated on the plans, proposals or bidding instruction.

I. DESCRIPTION. Perform all work in accordance with the Department's current Standard Specifications, and applicable Supplemental Specifications, the attached sketches, and these Notes. Section references are to the Standard Specifications.

This work consists of:

1. Furnish all labor, materials, tools, equipment, and incidental items necessary to complete the work.
2. Provide safe access to the bridge, in accordance with Section 107.01.01, for the Engineer to sound possible repair areas and for workers to complete the construction.
3. Repair cracks as applicable in accordance with the Special Note for Epoxy Injection Crack Repair.
4. Repair delaminated or spalled areas as applicable in accordance with the Special Note for Concrete Patching.
5. Apply Ordinary Surface Finish
6. Prepare the surfaces to receive sealing.
7. Apply concrete sealing.
8. Any other work as specified as part of this contract.

II. MATERIALS.

A. Sealer. Use one of the following:

Product	Supplier
Protectosil BHN	Evonik Industries
Protectosil 300S	Evonik Industries
TK-590-40 Tri-Silane 40%	TK Products
SW-244-100	Chemical Products Industries, Inc.
TK-590-1 MS Tri-Silane	TK Products
MasterProtect H1000	BASF
Aquanil Plus 40	ChemMasters
SIL-ACT ATS-100	Advanced Chemical Technologies
Certivex Penseal BTS 100%	Vexcon
Pentreat 244-40	W.R. Meadows
Aquanil Plus 40A	ChemMasters

- B. Coverage Rate:** Follow all manufacturers recommendations for coverage rates except the application rate must not exceed the square footage coverage rate per gallon of sealer as given in the chart below. If the manufacturer recommends a coverage rate greater than given in the table below, apply sealer at the rate given in the table below for the chosen sealers silane percentage.

% Silane	Coverage rate (ft ² /gallon)
100	300
40	120
20	60

III. CONSTRUCTION.

- A. Perform Concrete Repairs.** Repair concrete surface in accordance with the Special Note for Epoxy Injection Crack Repair and/or the Special Note for Concrete Patching Repair if included in the contract documents.
- B. Curing Compound.** Contrary to Section 609.03.12 of the specifications, curing compound is not to be used on the deck due to potentially causing issues with the concrete sealer. During the deck pour, finishing, and tining operations the Class AA concrete shall be kept continuously moist with the use of a mister until burlap or curing blankets are applied to the surface. At no point should water be pooling or running off the surface or the surface of the concrete be allowed to become dry. After the burlap or curing blankets are installed, cure in accordance with the specifications. Include all costs in the unit price bid for Class AA concrete. Failure to properly cure the concrete in accordance with this note and the specifications may result in weakened or cracked concrete. If the concrete is weakened or cracked due to improper curing, the contractor will be responsible for providing alternates to fix the issues to the Engineer for review and the contractor will be solely responsible for all costs to do so, up to complete replacement. Do not begin any construction on fixing any issues without approval of the Engineer.
- C. Apply Ordinary Surface Finish.** In addition to new concrete, areas receiving epoxy injection, concrete patching, and other surface imperfections, including areas of minor cracking, should receive Ordinary Surface Finish in accordance with Section 601.03.18 of the Standard Specifications. Use mortar of the same cement and fine aggregate as the concrete patching, or as directed by the Engineer. Payment will be incidental to Concrete Sealing. Finish surface of bridge decks in accordance with Section 609 of the Standard Specifications.
- D. Areas to Receive Concrete Sealing:**
1. Every exposed surface above a point 6” below ground or fill line of abutments, wing walls, end bent and pier caps, pedestals, back walls, columns, and exposed footings.
 2. All exposed surfaces of concrete deck, barrier walls, parapets, curbs, and plinths.

3. Prestressed Concrete I-Girders, Concrete Beams, and Spread Prestressed Concrete Box Beams: The underneath surfaces of slab overhangs outside of exterior concrete girders and to the exterior side and bottom of exterior concrete girders and beams.
 4. Adjacent Prestressed Concrete Composite Box Beams: Full length of the exterior face of all exterior beams from the top of the box beam to 1'-0" underneath the beams.
 5. Prestressed Non-Composite Box Beams: All faces of all beams, including surfaces to be covered with a waterproofing membrane, except take care to ensure that the grout pockets are not sealed.
 6. If the contract documents include the Special Note for Concrete Coating, do not apply concrete sealer to the areas where Concrete Coating is specified.
- E. Cleaning the Concrete Surfaces to be sealed.** Dry clean the concrete to remove all loose debris. Remove all visible hydrocarbons from the surface with detergent approved by the manufacturer of the deck sealant. Pressure wash all surfaces to be sealed at 2000 to 3000 psi. Install pressure gauges at each wand to verify pressure. Use 30° fan tip or as recommended by the manufacturer of the sealant. Hold pressure washing wand a minimum of 45° from the surfaces with a maximum stand-off distance of 12 inches.
- F. Sealing the Concrete.** Allow new concrete to cure a minimum 28 days prior to application of sealer. Monitor weather conditions prior to sealer application. Refer to manufacturer's recommendations for proper ambient conditions. Do not apply sealer if precipitation is anticipated within the time stated by the manufacturer. Allow the concrete to dry 24 hours (after washing or rain event) before sealer application. The bridge deck can be reopened to traffic while drying. Sealer must be applied within 48 hours of washing or the concrete must be rewashed. Divide the concrete into predefined areas of specific square footage to aid in determining usage. Comply with manufacturer's usage recommendation. Using a low-pressure pump, apply sealer and spread evenly with broom or squeegee; do not allow pooling to remain. When each predefined area is complete, measure the amount of sealer used to verify proper usage. After sealing, follow manufacturer's recommended cure time before opening to traffic. On vertical surfaces, apply the sealer in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern.
- G. Inspection:** Monitor all aspects of the project to assure compliance to this specification. Observe and document general conditions during the entirety of the project. Verify that each phase of work has been satisfactorily completed prior to beginning the next phase. Phases are described as follows:
1. Dry cleaning to remove loose debris, verify and document:
 - a. All debris has been removed and disposed of properly.
 2. Removal of hydrocarbons, verify and document:
 - a. The manufacturer's recommended detergent is used for removal.
 - b. Hydrocarbons have been satisfactorily removed.

3. Pressure washing, verify and document:
 - a. Washing pressure at the wand.
 - b. Tip size used.
 - c. Wash angle and stand-off distance.
 - d. The concrete is satisfactorily cleaned.
4. Sealer application, verify and document:
 - a. Proper cure time for new concrete.
 - b. Concrete surface is dry.
 - c. Document time since washed.
 - d. Was the bridge deck opened to traffic after washing?
 - e. Document ambient temperature, surface temperature, relative humidity, and dew point.
 - f. Application and distribution method.
 - g. Coverage to be complete and even.
 - h. Material is not allowed to remain pooled.
 - i. Monitor material usage.
 - j. No traffic on the bridge decks until proper cure time is allowed.

IV. MEASUREMENT

- A. **Concrete Sealing.** The Department will measure the quantity per square feet of each area sealed.

V. PAYMENT

- A. **Concrete Sealing.** Payment at the contract unit price per square feet is full compensation for the following: (1) Furnish all labor, materials, tools, and equipment; (2) Cleaning; (3) Sealing; (4) Maintain & control traffic; and, (5) Any other work specified as part of this contract.

SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR

GRAYSON County SYP 4-10023.00

I. DESCRIPTION

Perform all work in accordance with the Kentucky Transportation Cabinet, Department of Highways current Standard Specifications for Road and Bridge Construction and applicable Supplemental Specifications, the Standard Drawings, this Note, and the Contract Documents. Section references are to the Standard Specifications.

This work consists of the following:

1. Furnish all labor, materials, tools, equipment, and incidental items necessary to complete the work.
2. Provide safe access to the bridge, in accordance with Section 107.01.01, for the Engineer to sound possible repair areas and for workers to complete the construction.
3. Drill injection port holes.
4. Epoxy injection.
5. Finish the repaired surface.
6. Obtain core samples for the Engineer's visual inspection.
7. Repair core holes.
8. Any other work specified as part of this contract.

II. MATERIALS, EQUIPMENT, PERSONNEL

A. Type IV Epoxy Resin. Use either Category I or II suitable for epoxy injection applications. See Section 826. All cracks shall be injected using an adhesive suitable for the field conditions (crack width, temperature, humidity, etc.) recommended by the adhesive manufacture as shown on material data sheets.

B. Equipment. Equipment used to inject the epoxy shall meet the recommendations of the epoxy injection material manufacturer.

C. Personnel. Arrange to have a manufacturer's representative at the job site to familiarize him and the Engineer with the epoxy materials, application procedures and recommended pressure practice. The representative shall direct at least one complete crack or area injection and be assured prior to his departure from the project that the personnel are adequately informed to satisfactorily perform the remaining repairs.

Furnish the Engineer a copy of the manufacturer's comprehensive preparation, mixing and application instructions which have been developed especially for use with the proposed epoxy injection system. Ensure that any significant changes to these instructions which are recommended by the representative for an unanticipated situation have been approved by the Engineer prior to the adoption of such changes.

III. CONSTRUCTION

- A. Investigate Remedial Action.** If the crack is larger than or equal to 0.025" wide or has rust stains, repair the crack by epoxy injection. If the crack is less than 0.025" wide, the crack shall be sealed in accordance with the Special Note for Concrete Sealing. Areas of map cracking are to be sounded by the Engineer with a hammer. If the areas are delaminated or spalled, they shall be repaired in accordance with the Special Note for Concrete Patching. Otherwise, the cracks shall be repaired in accordance with this Note.
- B. Drill Injection Port Holes.** Install injection ports or tees in cracks to be injected. Space injection ports or tees at 6 to 12 inches vertically and 6 to 18 inches horizontally but in no case closer together than the thickness of the concrete member if full depth penetration is desired unless otherwise specified or directed. Set ports or tees in dust free holes made either with vacuum drills or chipping hammers.
- C. Epoxy Injection.** Seal all surface cracks in the area to be repaired, after injection ports or tees have been inserted into the holes, with paste epoxy between ports to insure retention of the pressure injection within the confines of the member. An alternate procedure of sealing the cracks before the injection holes have been made can be submitted to the Engineer for approval. Limit the application of paste epoxy to clean and dry surfaces. Limit substrate temperatures to not less than 45°F during epoxy applications.
- Begin the epoxy injection at the bottom of the fractured area and progress upward using a port or tee filling sequence that will ensure the filling of the lowermost injection ports or tees first.
- Establish injection procedures and the depths and spacings of holes at injection ports or tees. Use epoxy with flow characteristics and injection pressure that ensure no further damage will be done to the member being repaired. Ensure that the epoxy will first fill the innermost portion of the cracked concrete and that the potential for creating voids within the crack or epoxy will be minimized.
- D. Finish the Repaired Surface.** Remove the injection ports or tees flush with the concrete surface after the fractured area has been filled and the epoxy has partially cured (24 hours at ambient temperature not less than 60°F, otherwise not less than 48 hours). Roughen the surfaces of the repaired areas to achieve uniform surface texture. Remove any injection epoxy runs or spills from concrete surfaces.
- E. Obtain Core Samples.** Obtain two 4-inch diameter core samples in the first 25 linear feet of crack repaired and one core for each 25 linear feet thereafter. Take the core samples from locations determined by the Engineer and for the full crack depth. Cores will be visibly examined by the Engineer to determine the extent of epoxy penetration.
- F. Repair Core Holes.** Repair core holes in the concrete with non-shrink grout in accordance with Section 601.03.03(B) within 24 hours.

IV. MEASUREMENT

The Department will measure the quantity in linear feet along the centerline of the cracks. The Department will not measure preparation of the site for the Engineer’s access or removal and reapplication of repairs that do not satisfy the Engineer’s approval for payment and will consider them incidental to “Epoxy Injection Crack Repair”.

V. PAYMENT.

The Department will make payment for the completed and accepted quantities of concrete cracks repaired with epoxy injection under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
23744EC	Epoxy Injection Crack Repair	Linear Feet

The Department will consider payment as full compensation for all work required.

SPECIAL NOTE FOR TRUSS SCREEDS ON CONCRETE OVERLAYS

This Special Note will apply where indicated on the plans or in the proposal. Section references herein are to the Department's Current Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. This specification covers the use of vibratory truss screed use on side-by-side composite box beams with designed slab thickness equal to a nominal five inches. Contrary to Kentucky Transportation Cabinet Department of Highways Standard Specifications for Road And Bridge Construction, latest edition, the use of a Vibratory Truss Screed in lieu of a self-propelled finishing machine equipped as detailed in Section 609.02.09 of the Specifications will be considered for use provided the following requirements of this Special Note are met:

2.0 EQUIPMENT AND QUALIFYING PROJECTS.

2.1 Vibratory Truss Screed. The contractor shall submit for approval, prior to use, the manufacturer's literature confirming that the vibratory truss screed proposed shall be able to meet the required cross slope of bridge and provide a minimum of 8,000 vibration cycle modes per minute (VPM). The Central Office Division of Construction will make the determination of use for each project.

2.2 Qualifying Structures. The vibratory truss screed can only be considered on structures meeting the following criteria:

- A.** Bridge design consists of side-by-side composite box beams with concrete overlay.
- B.** The design for the thickness of concrete for the bridge deck shall be 5-inch depth as detailed on the typical section of the bridge plans.
- C.** The actual maximum nominal depth thickness must be less than 8" at any point on the deck.
- D.** The side-by-side box beam bridge deck shall have only a single mat of reinforcement steel.

3.0 CONSTRUCTION.

3.1 Submittal. Submit, to the Central Office, Division of Construction, manufacturer's specifications of equipment proposed for use.

3.2 Sampling and Testing. If approved, the bridge deck may be cored to verify density and voids, at the discretion of the Director of the Division of Construction. Failure to meet proper density and consolidation will incur a penalty up to removal and replacement.

4.0 MEASUREMENT. The Department will not measure for the use of vibratory truss screeds and are incidental to the work being performed.

5.0 PAYMENT. The Department will not make payment for the use of the vibratory truss screed and shall be incidental to the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
08104	CONCRETE-CLASS AA	Cubic Yard

SPECIAL NOTE FOR STRUCTURES WITH OVER THE SIDE DRAINAGE

GRAYSON County SYP 4-10023.00

- 1.0 DESCRIPTION.** Perform all work in accordance with the Kentucky Transportation Cabinet, Department of Highway's current Standard Specifications for Road and Bridge Construction and applicable Supplemental Specifications, the Standard Drawings, this Note, and the attached detail drawings. Section references are to the Standard Specifications.

This note applies to structures with over the side drainage.

This work consists of: (1) Furnish all labor, materials, tools, and equipment; (2) Install the drip strip; (3) Maintain and control traffic as applicable; and (4) Any other work specified as part of this contract.

2.0 MATERIALS.

2.1 Drip Strip. Drip strip shall be hot dipped galvanized steel with a minimum of 22 gage.

- 3.0 CONSTRUCTION.** The Contractor shall bear full responsibility and expense for any and all damage to the structure, should such damage result from the Contractor's actions.

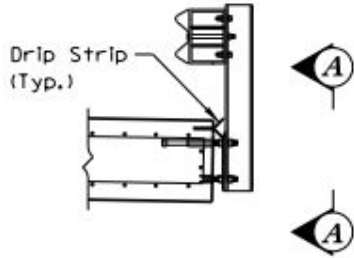
3.1 Installation of Drip Strip. Install lower drip strip, as detailed, along the full length of each side of the bridge. If splices are required in the lower drip strip, tightly butt the individual pieces together, do not lap. Install a 1'-6" long upper drip strip at each railing post.

For concrete decks/slabs: Bend up strips at 90° against the inside face of the forms before concrete is placed. After the forms are removed, bend the drip strips into the final position of 45° as shown in the attached detail drawing. Use care when stripping formwork so as not to damage or wrinkle the drip strip. To further ensure that wrinkling of the strips does not occur, use an adequate length backup bar during the bending out operation.

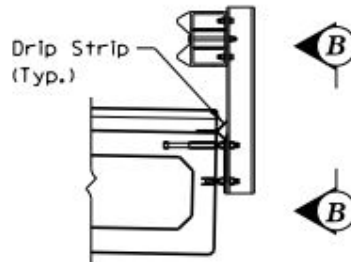
For asphalt overlays: Prior to placing the asphalt overlay, install the bent drip strips along the edge of the prestressed box beam as shown. Fasten the drip strips with (1¼" length, 3/32" shank diameter) button head spikes with deformed shanks or expansion anchors at 1'-6" c/c max. All installation devices shall be galvanized or stainless steel. Other similar devices shall not be used unless approved by the Engineer.

4.0 PAYMENT.

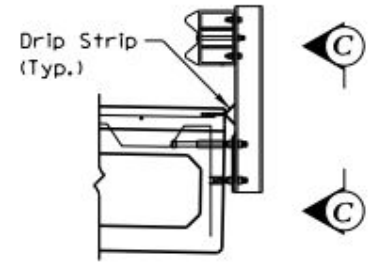
5.1 Drip Strip. Cost of all work, including all materials, labor, equipment, tools, and incidentals necessary to complete the work as specified by this note, shall be considered incidental to the project.



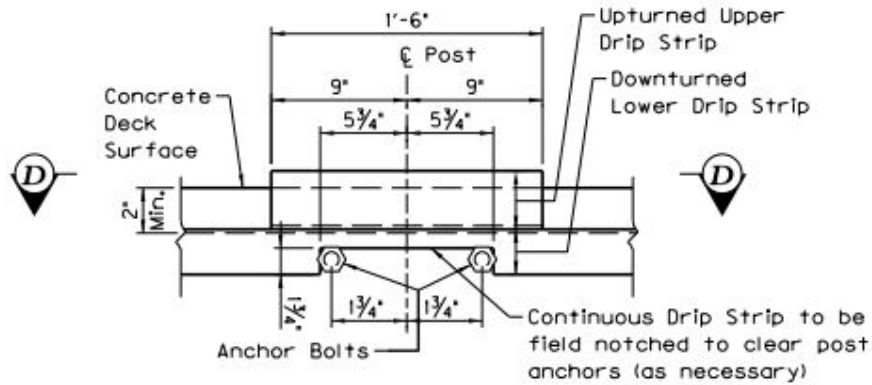
**CONCRETE SLAB WITH
 TYPE II RAILING**



**NONCOMPOSITE BOX BEAM
 WITH TYPE II RAILING**

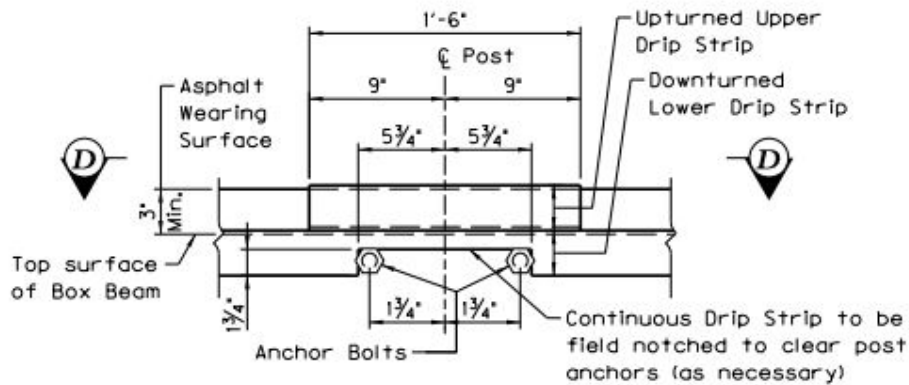


**COMPOSITE BOX BEAM
 WITH TYPE II RAILING**

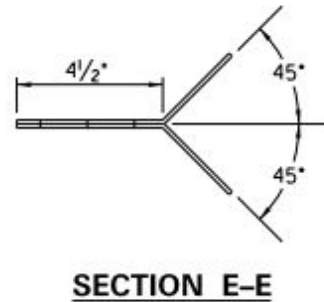
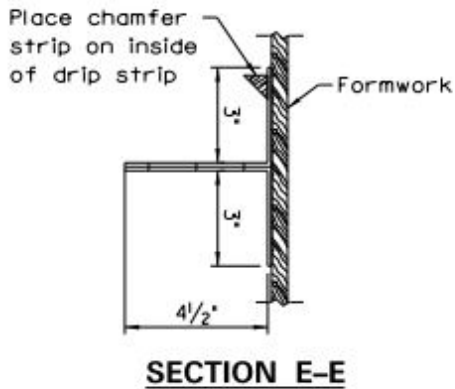
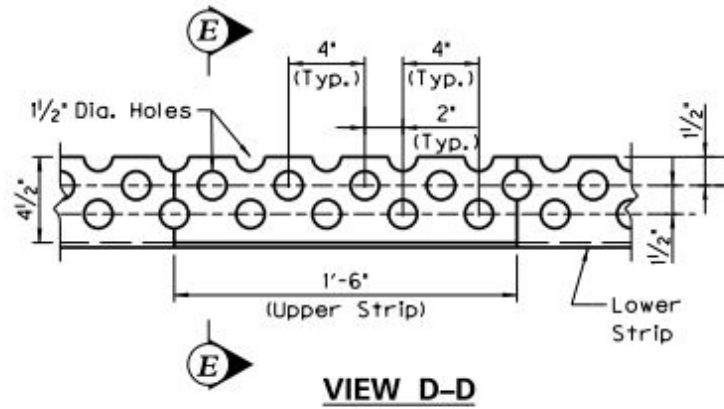
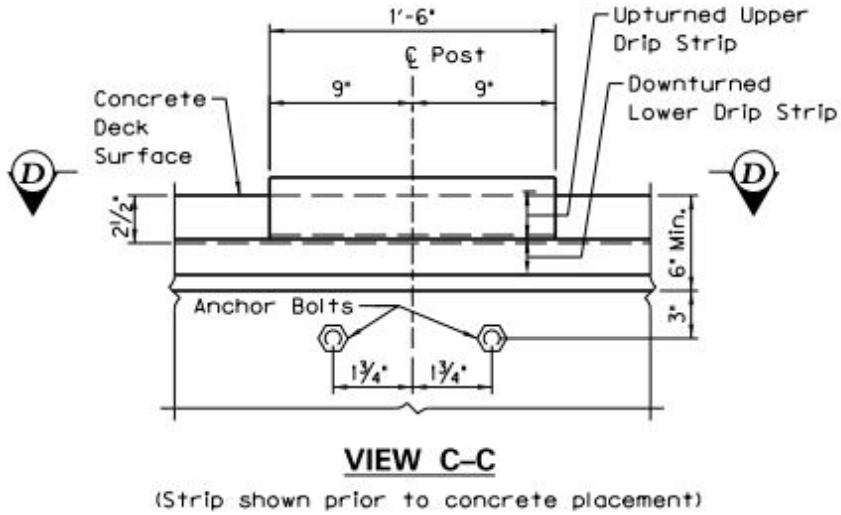


VIEW A-A

(Strip shown prior to concrete placement)



VIEW B-B



SPECIAL NOTE FOR BRIDGING KENTUCKY PROJECT STENCIL
GRAYSON County SYP 4-10023.00

This Special Note will apply to the bridge or bridges in this proposal. Section references herein are to the Department's Current Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. This specification covers an additional concrete stencil for structures in the Bridging Kentucky Program.

2.0 CONSTRUCTION.

2.1 Construction Date and Identification. On all concrete bridges and box culverts, stencil the year the Contract was executed, the structure drawing number on the concrete at the locations designated, and the Bridging Kentucky Logo as depicted in the drawing in this special note. Make the figures on the stencil according to details specified in the drawing. For bridges having a clear span of 20 feet or more, stencil the year the Contract was executed and load capacity of the structure on the outside face of the plinth or barrier wall as shown on the drawing. On all box culverts, place stenciled figures giving the year in which the Contract is executed on the inlet end of the culvert on the outside face and center of the parapet or headwall. Do not use permanent plates or markers of any kind, other than those shown, on any structure. On all bridges, imprint the name of the prime contractor in the concrete at the location shown. Furnish stencils, all equipment, tools, labor, materials, and other incidentals necessary.

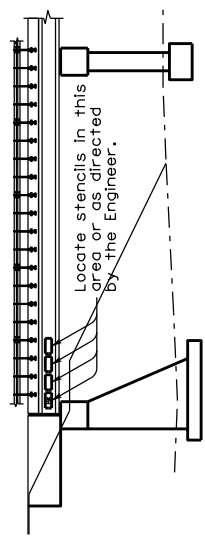
3.0 MEASUREMENT. The Department will not measure bridge stencils for payment per section 601 of the Kentucky Transportation Cabinet Standard Specifications for Road and Bridge and Construction, latest edition.

4.0 PAYMENT. The Department will not make payment for bridge stencils, materials, and associated work. All work, materials, and associated costs shall be incidental to the item listed:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
08100, 08102-08106, 02555	Concrete, Class	Cubic Yard

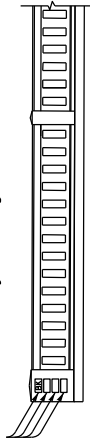
KENTUCKY
DEPARTMENT OF HIGHWAYS
BRIDGING KENTUCKY
STENCIL FOR BRIDGING KENTUCKY LOGO

LOCATION OF STENCILS ON BRIDGES



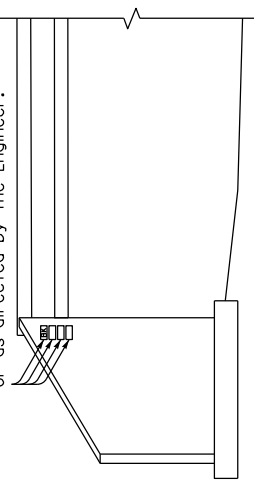
APPLICATION ON STEEL GIRDERS

Locate stencils in this area or as directed by the Engineer.

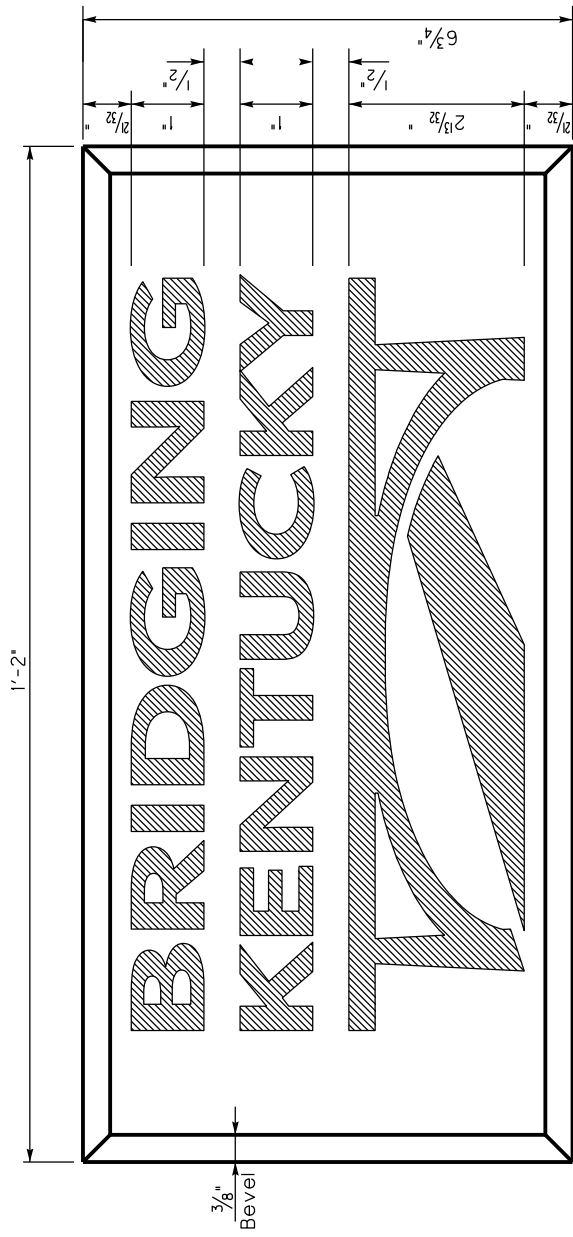


APPLICATION ON CLASSIC RAIL

Locate stencils in this area or as directed by the Engineer.



APPLICATION ON WING WALLS

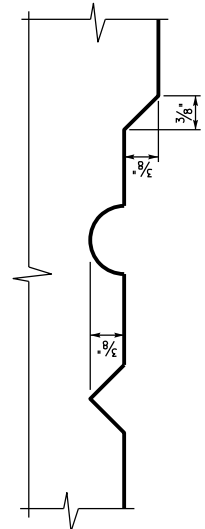


STENCIL FOR BRIDGING KENTUCKY LOGO

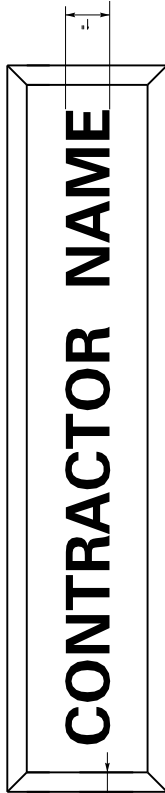
GENERAL NOTES

STENCILS: For concrete applications, fabricate all stencils from recessed panels with beveled edges with raised letters and figures in accordance with Subsection 601.03.19 of the Specifications. For steel girders, paint stencil using flat black paint and the recommended dimensions. When using paint, borders shown in the above detail are to be excluded.

BRIDGING KENTUCKY LOGO STENCIL: Place on all program bridges when applicable, in proximity to other stencils required.

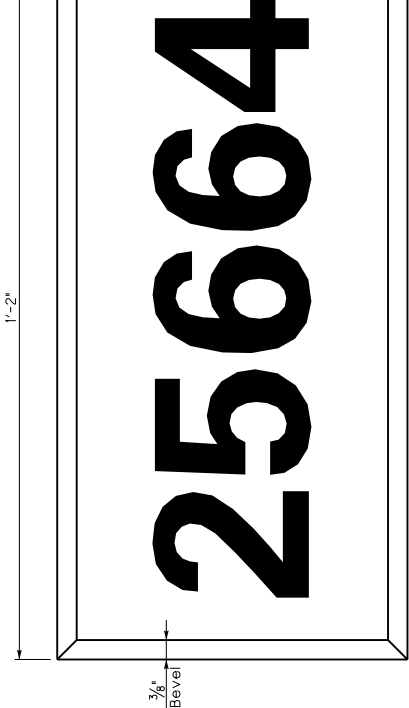


TYPE OF LETTERS



CONTRACTOR STENCIL

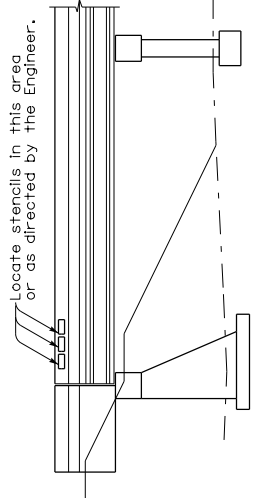
STENCIL FOR YEAR AND DESIGN LOADING
 When year only is used place year in center of plate



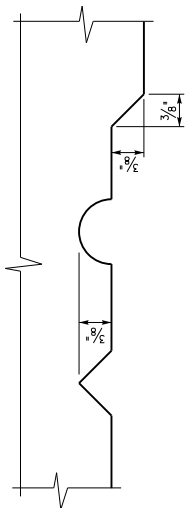
STENCIL FOR DRAWING NUMBER

GENERAL NOTES

- STENCILS:** Fabricate all stencils from recessed panels with beveled edges with raised letters and figures in accordance with Subsection 601.03.19 of the Specifications.
- YEAR AND DESIGN LOADING STENCIL:** Show the year that the contract is executed and the design load as shown on the contract plans. The design load is required on all structures classified as bridges by Subsection 101.03 of the Specifications and on other structures as referenced on plans.
- DRAWING NUMBER STENCIL:** Use this stencil on all structures. The number to be placed on the stencil shall be taken from the contract plans.
- CONTRACTOR STENCIL:** Place on all bridges, the name of the prime contractor and subcontractor(s), when applicable, in proximity to other stencils required.

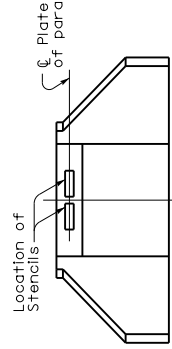


LOCATION OF STENCILS ON BRIDGES

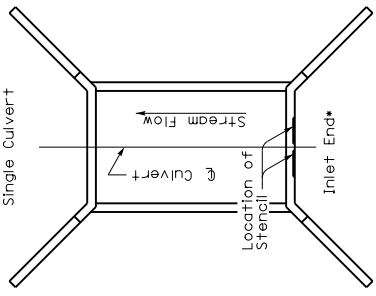


TYPE OF LETTERS

* Use the outlet end for outlet only extensions

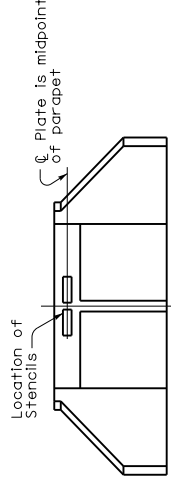


ELEVATION A-A Single Culvert



PLAN

Location of Stencils on all Culverts (Single or Multiple) and Arches



ELEVATION A-A Multiple span Culvert

KENTUCKY DEPARTMENT OF HIGHWAYS	
STENCILS FOR STRUCTURES	
STANDARD DRAWING NO. BCX-006-10	Page 30
SUBMITTED: <i>M. M. M. M.</i> 12-01-15	DATE: 12-01-15
APPROVED: <i>[Signature]</i> 12-01-15	DATE: 12-01-15
DIRECTION OF STRUCTURAL DESIGN	STATE HIGHWAY ENGINEER

Environmental Compliance Plan (ECP)

4-10023



Special Note for Environmental Compliance Plan (ECP)

Project:	A3 D4 043C00057N Grayson	Item No:	4-10023
Process Document:	-1	Bridge No	043C00057N
Current Workflow Step:	ENV Updates	County:	Grayson
Subject:	ECP- 043C00057N	Status	Submitted

The following ECP checklist outlines responsibilities of the Contractor and/or the KYTC to ensure all environmental commitments are met. Please pay special attention to:

- Commitment Description (commitment made to resource agencies)
- Responsible Party
- Compliance Document (how compliance is to be documented)

If you have any question please email BKY_Env@doc.e-builder.net.

4-10023

Environmental Compliance Plan (ECP)

#	Subject	Commitment Description	ENV Reference Document and Oversight Agency	Responsibility Phase	Responsible Party	Compliance Document	Doc to Include in Bid Pkg and Contract	Bid Pkg / Contract Doc Attached?
1	Other	Project/Site dependent	NEPA Doc - FHWA	Environmental	KYTC DEA	n/a	CE	Yes
2	Archaeology	Stop work if unanticipated discoveries, including human remains, are discovered	Archaeology Report - Kentucky SHPO	Construction	Contractor	See instruction in Special Note	Special Note for Additional Environmental Commitments	Yes
3	Environmentally Cleared Area (ECA)	Keep all work activity within the cleared area. Contractor shall install snow fencing to delineate ECA	Archaeology Report - Kentucky SHPO	Construction	Contractor, Inspector	Daily Work Report (DWR)	Special Note and ECA map	Yes
4	Species	Do not clear trees during June or July	Biological Assessment - USFWS	Construction	Contractor	Daily Work Report (DWR)	Special Note for Seasonal Restrictions	Yes
5	Water Quality	Install and maintain erosion control	NW3 - USACE	Construction	Contractor	Daily Work Report (DWR)	Special note for Sedimentation and Erosion Prevention	Yes
6	Water Quality	If 1.0 acre or more of land is disturbed in total (including staging areas) must obtain KPDES permit	KYR10 (BMP) - USEPA KDOW	Construction	Contractor	See instructions in KPDES	KPDES KYR10 (BMP)	Yes

4-10023

Environmental Compliance Plan (ECP)

7	Water Quality	Follow conditions in NW3	NW3 - USACE	Construction	Contractor	See instructions in NW3	NW3	Yes
8	Air Quality	Notify DAQ 10 days prior to demolition	Asbestos Inspection Report - USEPA and KDAQ	Construction	Contractor	DEP 7036 Form and email to KDAQ	Asbestos Inspection Report	Yes

SPECIAL NOTE

FOR SEDIMENT PREVENTION AND EROSION CONTROL GRAYSON County SYP 4-10023.00

FOR IMPACT REGARDLESS OF SIZE OF THE DISTURBED AREA

Potential impacts to gray bat foraging habitat and habitat for federally listed fish and mussel species will be minimized by implementing erosion prevention and sediment control measures.

As required under Section 213 of the KYTC Standard Specifications, prior to onsite activities a **site-specific Erosion Control Plan including BMPs** to ensure continuous erosion control throughout the construction and post construction period. The plan will identify individual Disturbed Drainage Areas (DDA) where storm water from the construction area will be discharged off site or into waters of the Commonwealth.

Should the Contractor fail to create a BMP Plan or provide and maintain the necessary erosion control, Liquidated Damages will apply at the rate specified in the contract. If no rate is specified, Liquidated Damages will be applied at the rate specified in Section 108 of the Standard Specifications.

The erosion prevention and sediment controls proposed are presented below.

- The location of the individual erosion prevention/sediment control measures will be identified by the Resident Engineer and Contractor. The Contractor will place erosion control devices as identified in the site-specific BMP Plan prior to beginning work.
- Mulch will be placed, during grade and drain activities, across all areas where no work will be conducted for a period of 14 consecutive days.
- Tree clearing within the riparian zone will be minimized. Trees to be removed will be determined by the resident engineer and the contractor prior to disturbance. (Note: Any “Special Note for Tree Clearing Restrictions” must be adhered to.)
- Silt fence, or other approved method as appropriate, will be installed at the edge of waters within the project corridors to eliminate the deposition of rock and debris in the streams during construction activities. In the unforeseen event that unintended debris does enter the streams, the resident engineer will halt the contributing activity until appropriate remedial actions have been implemented.
- To the maximum extent plausible, construction activities will take place during low-flow periods.
- Equipment staging and cleaning areas will be located to eliminate direct inputs to waters of the Commonwealth. These areas will be located such that effluent will be filtered through vegetated areas and appropriate sediment controls prior to discharge offsite.

- Concrete will be poured in a manner to avoid spills into the streams. In the unforeseen event that a spill does occur, the USFWS will be notified, and the resident engineer will immediately halt the activity until remedial measures have been implemented.
- KYTC proposes to stabilize areas disturbed during construction activities through vegetation establishment and placement of riprap and geotextile fabric. Re-vegetation of the disturbed areas will allow thermoregulation of water within the streams, establish long-term, regenerative stabilization of the stream banks, and provide nutrients to the aquatic macroinvertebrate community through inputs of organic material.
- Areas disturbed during construction and not stabilized with rip rap and erosion blanket will be seeded using a standard seed mix. Depending on project slope and project location, application rates and seed mix types will vary. The Contractor shall perform all final seeding and protection, in accordance with the plans and Section 212 of KYTC Standard Specifications.
- Contrary to Section 213.03.03, paragraph 2, the Engineer shall conduct inspections as needed to verify compliance with Section 221 of KYTC Standard Specifications. The Engineer's inspections shall be performed a minimum of once per month and within seven (7) days after a storm of ½ inch or greater. Copies of the Engineer's inspections shall not be provided to the Contractor unless improvements to the BMPs are required. The Contractor shall initiate corrective action within 24 hours of any reported deficiency and complete the work within five (5) days. The Engineer shall use Form TC 63-61 A for this report. Inspections performed by the Engineer do not relieve the Contractor of any responsibility for compliance. If corrections are not made within the five (5) days specified, the liquidated damages will apply at the rate specified in the Liquidated Damages note in the contract.
- Contrary to Sections 212.05 and 213.05, unless listed in the proposal, bid items for temporary BMPs and items for permanent erosion control will not be measured for payment and will be replaced with one lump sum item for the services. Payment will be pro-rated based on the Project Schedule as submitted by the Contractor and as agreed to by the Engineer.
- The Contractor shall be responsible for applying "good engineering practices." The Contractor may use any temporary BMPs and permanent BMPs that fall within the guidance of the current Standard Specifications, KYTC's Best Management Practices manual, and with the approval of the KYTC Engineer.

FOR IMPACT GREATER THAN 1.0 ACRE

When the total disturbed area for a project, including laydown and waste/borrow areas, is greater than 1.0 acre, the Contractor shall be responsible for filing the Kentucky Pollution discharge Elimination System (KPDES) KYR10 permit Notice of Intent (NOI) with the Kentucky Division of Water (DOW). The Contractor will be responsible for following the KPDES requirements of local Municipal Separate Storm Sewer System (MS4) programs with jurisdiction. Required NOI shall name the Contractor as the Facility Operator and include the KYTC Contract ID Number (CID) for reference. For grouped contracts with more than one structure, each structure will be treated independently in regards to disturbed area unless another structure is within 0.25 mile of

the structure. For structures within 0.25 mile of each other, the total disturbed area will be the sum of the combined disturbed areas. The Contractor shall be responsible for filing the KPDES permit Notice of Termination (NOT) with the Kentucky DOW and any local MS4 Program that has jurisdiction. The NOT shall be filed after the Engineer agrees the project is stabilized or the project has been formally accepted.

The Contractor shall perform all temporary erosion/sediment control functions including: providing a Best Management Practice (BMP) Plan, conducting required inspections, modifying the BMP Plan documents as construction progresses, and documenting the installation and maintenance of BMPs in conformance with the KPDES KYR10 permit effective on August 1, 2009, or a permit re-issued to replace that KYR10 permit. This work shall be conducted in conformance with the requirements of Section 213 of the KYTC current Department of Highways, Standard Specifications for Road and Bridge Construction (Standard Specifications).

The Contractor shall be responsible for the examination of the soils to be encountered and make his own independent determination of the temporary BMPs that will be required to accomplish effective erosion prevention and sediment control. The Contractor shall provide the Engineer copies of all documents required by the KPDES permit at the time they are prepared.

If there are any questions regarding this note, please contact Danny Peake, Director, Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

SPECIAL NOTE

For Additional Environmental Commitments

IN ADDITION TO OTHER ENVIRONMENTAL COMMITMENTS LISTED IN THIS CONTRACT, THE FOLLOWING COMMITMENTS ALSO APPLY, AS THIS IS A FEDERALLY FUNDED UNDERTAKING AS DEFINED IN SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT, [36 CFR 800.16\(Z\)](#):

- 1) The KYTC has completed a Phase 1 archaeological survey for a site-specific area surrounding the bridge. The cleared area is shown as “Archaeologically Cleared Area” or “Environmentally Cleared Area” on the concept plans and/or the map attached to this note or included elsewhere in the proposal. Likewise, any areas that must be avoided have been labeled “Do Not Disturb.” The contractor shall install snow fencing to clearly delineate the boundary of the project lying within the bounds of the archeologically cleared area and right of way/easements. This snow fence shall be paid for per linear foot measured. If the Contractor requests additional area, and as a result additional delineation is required, the additional snow fence will not be paid and will be considered incidental to the original line item for snow fence.

If the Contractor deems it necessary to use additional areas outside the Archaeologically/ Environmentally Cleared Area for any purposes—e.g., laydown yards, vehicle parking, parking cranes, delivering beams, borrow areas, waste areas, etc.—the Contractor must first get a written agreement with the landowner (assuming the additional area is outside the right-of-way). Then the Contractor shall seek approval of the use of the site—whether within or outside the right-of-way—by both the KYTC Section Supervisor and the Bridging Kentucky Environmental Lead at BKY_Env@docs.e-builder.net. The Contractor shall provide a map of the area(s) to be used, including access points, and property-owner agreements. The BKY Environmental Team will complete initial field investigations for archaeological, historical, ecological, and other environmental clearances. If any potentially significant site or resources are found, the KYTC has the right to deny the use of the proposed site. The maps and property owner agreements are to be submitted at least ten (10) business days prior to the Preconstruction Conference, or sixty (60) days prior to the Contractors access to the site, for coordination and review by the KYTC District and Bridging Kentucky Team.

A Liquidated Damage of \$50,000 will be assessed whenever the Contractor has used any restricted areas. The fee will be assessed on a *per bridge* basis, whether the contract involves bridge bundles or a single bridge. In addition, all fines, fees, penalties, remediation costs, and other damages related to breaches of Threatened and Endangered Species Act Section 7, National Historic Preservation Act Section 106, Clean Water Act Sections 401 and 404, Kentucky General Permit for Stormwater Discharges KYR10, Environmental Protection Agency requirements, State Historic Preservation Office requirements, and other related permitting agencies will be paid by the Contractor, including all associated costs and burdens placed upon the Kentucky Transportation Cabinet.

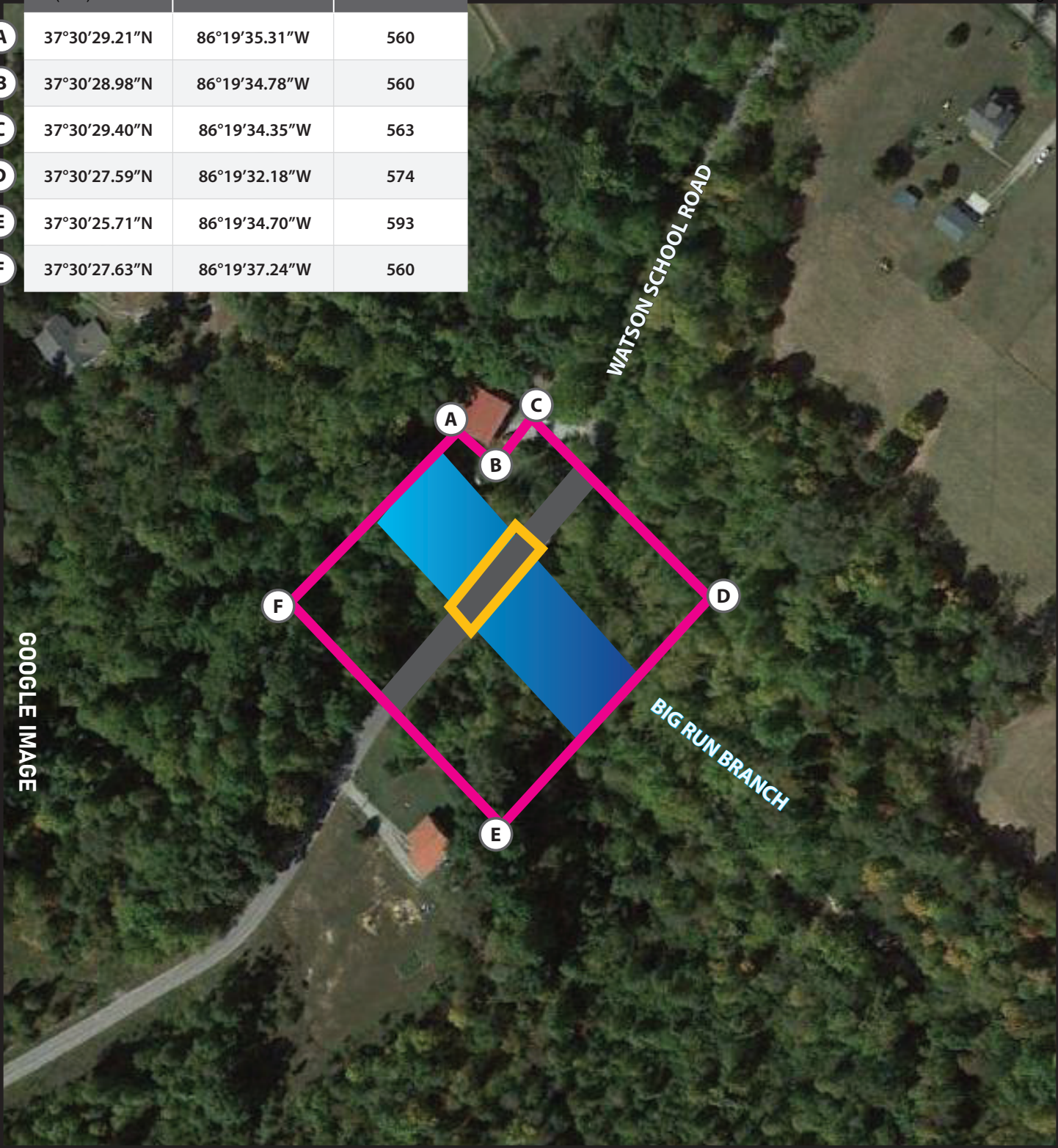
- 2) In the event that human remains are encountered during project activities, all work should be immediately stopped in the area. The area should be cordoned off, and, in accordance with KRS

72.020, the county coroner and local law enforcement must be contacted immediately. Upon confirmation that the human remains are not of forensic interest, the unanticipated discovery must be reported to Nicolas Laracuenta at the Kentucky Heritage Council at (502) 892-3614, George Crothers at the Office of State Archaeology at (859) 257-1944, and KYTC DEA archaeologists at (502) 564-7250.

For guidance regarding inadvertent discovery and treatment of human remains, refer to the KYTC's [*Right of Way Guidance Manual*](#) (Section ROW-1202), and the Advisory Council on Historic Preservation's (ACHP) [*Policy Statement Regarding Treatment of Human Remains and Grave Goods*](#) (adopted by ACHP February 23, 2007).

- 3) If, during the implementation of The Project, a previously unidentified historic/ archaeological property is discovered or a previously identified historic/archaeological property is affected in an unanticipated manner, the contractor shall (1) call KYTC DEA archaeologists at (502) 564-7250, (2) call SHPO archaeologists at (502) 892-3614, and (3) ensure that all work within a reasonable area of the discovery shall cease until such time as a treatment plan can be developed and implemented.

	LATITUDE	LONGITUDE	ELEVATION
A	37°30'29.21"N	86°19'35.31"W	560
B	37°30'28.98"N	86°19'34.78"W	560
C	37°30'29.40"N	86°19'34.35"W	563
D	37°30'27.59"N	86°19'32.18"W	574
E	37°30'25.71"N	86°19'34.70"W	593
F	37°30'27.63"N	86°19'37.24"W	560



GOOGLE IMAGE

- Environmentally Cleared Area
- Big Run Branch
- Watson School Road
- Bridge

ID: 043C00057N
Item No.: 4-10023



NOTE: Latitude, Longitude, and Elevation are approximate based on Google Earth

04-10023.00 GRAYSON COUNTY

PLAN SHEETS

PLAN SHEETS WHICH ARE TO SCALE ARE AVAILABLE TO VIEW AND PRINT IN THE PROJECT-RELATED INFORMATION FOLDER FOR THIS LETTING AT THE CONSTRUCTION PROCUREMENT WEBSITE:

<http://transportation.ky.gov/Construction-Procurement/Pages/default.aspx>

KyTC BMP Plan for Project CID ## - #####



Kentucky Transportation Cabinet

Highway District 4

And

_____ **(2), Construction**

Kentucky Pollutant Discharge Elimination System Permit KYR10 Best Management Practices (BMP) plan

Groundwater protection plan

For Highway Construction Activities

For

Rehab – Super Replacement

Project: CID ## - #####

KyTC BMP Plan for Project CID ## -

Project Information

Note – (1) = Design (2) = Construction (3) = Contractor

1. Owner – County Highway Agency, District 4 (1)

2. Resident Engineer: (2)

3. Contractor Name: (2)

Address: (2)

Phone number: (2)

Contact: (2)

Contractor's agent responsible for compliance with KPDES permit requirements: (3)

4. Project Control Number: (2)

5. Route (Address): Watson School Road over Big Run Branch (1)

6. Latitude/Longitude (project mid-point): 37°30'27.9"N 86°19'34.4"W (1)

7. County (project mid-point): Grayson County (1)

8. Project start date (date work will begin): (2)

9. Projected completion date: (2)

KyTC BMP Plan for Project CID ## - ####

A. Site Description

1. **Nature of Construction Activity (from letting project description):** Address deficiencies of Watson School Road Bridge (043C00057N) over Big Run Branch, MP 0.15. Rehabilitation SYP No.4-10023. (1)
2. **Order of major soil disturbing activities:** (2) and (3)
3. **Projected volume of material to be moved:** (3)
4. **Estimate of total project area (acres):** (3)
5. **Estimate of area to be disturbed (acres):** (3)
6. **Post construction runoff coefficient** will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information. (1)
7. **Data describing existing soil condition:** Two soil series are mapped for the APE: Clifty gravelly silt loam and Weikert channery silt loam. Clifty (mesic Fluventic Dystrudepts) series soils are very deep, well-drained soils formed in mixed alluvium. These soils are located on floodplains, and slopes range from 0 to 4 percent. Weikert (mesic Lithic Dystrudepts) series soils are shallow, well-drained soils formed in material that weathered from interbedded gray and brown acid shale, siltstone, and finegrained sandstone on gently sloping to very steep areas on uplands. (Soil Survey Staff 1999) (1) and (2)
8. **Data describing existing discharge water quality (if any):** (2)
9. **Receiving water name:** Big Run Branch (1)
10. **TMDLs and Pollutants of Concern in Receiving Waters:** (1 DEA)
11. **Site map:** Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.

KyTC BMP Plan for Project CID ## -

- 12. Potential sources of pollutants:** The primary source of pollutants is solids that are mobilized during storm events. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes, and trash/debris. (3)

B. Sediment and Erosion Control Measures

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

Projects that do not have DDAs annotated on the erosion control sheets will employ the same concepts for development and managing BMP plans.

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as "Do Not Disturb" until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP's shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA's as the work progresses. All DDA's will have adequate BMP's in place before being disturbed.
3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:
 - **Construction Access**—This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
 - **Sources**—At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.

KyTC BMP Plan for Project CID ## - ####

- **Clearing and Grubbing**—The following BMP's will be considered and used where appropriate.
 - Leaving areas undisturbed when possible.
 - Silt basins to provide silt volume for large areas.
 - Silt Traps Type A for small areas.
 - Silt Traps Type C in front of existing and drop inlets which are to be saved.
 - Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
 - Brush and/or other barriers to slow and/or divert runoff.
 - Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
 - Temporary mulch for areas which are not feasible for the fore mentioned types of protections.
 - Non-standard or innovative methods.
- **Cut and Fill and Placement of Drainage Structures**—The BMP Plan will be modified to show additional BMP's such as:
 - Silt Traps Type B in ditches and/or drainways as they are completed.
 - Silt Traps Type C in front of pipes after they are placed.
 - Channel Lining.
 - Erosion Control Blanket.
 - Non-standard or innovative methods.
- **Profile and X-Section in Place**—The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
 - Silt Trap Type A, Brush and/or other barriers, Temporary mulch, and any other BMP which had to be removed for final grading to take place.
 - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
 - Additional Channel Lining and/or Erosion Control Blanket.
 - Temporary mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
 - Special BMP's such as Karst Policy.
- **Finish Work (Paving, Seeding, Protect, etc.)**—A final BMP Plan will result from modifications during this phase of construction. Probable changes include:

KyTC BMP Plan for Project CID ## -

- Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket, or Permanent Seeding and Protection on moderate grades.
 - Permanent Seeding and Protection.
 - Placing Sod.
 - Planting trees and/or shrubs where they are included in the project.
- BMP's, including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's, to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are: (3)

C. Other Control Measures

1. Solid Materials

No solid materials, including building materials, shall be discharged to waters of the commonwealth, except as authorized by a Section 404 permit.

2. Waste Materials

All waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in appropriate covered waste containers. Waste containers shall be removed from the project site on a sufficiently frequent basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the Section Engineer if there any hazardous wastes being generated at the project site and how these wastes are being managed. Site personnel will be instructed regarding proper storage and handling of hazardous wastes when required. The Transportation Cabinet will file for generator, registration when appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

The following material management practices will be used to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff.
(3)

KyTC BMP Plan for Project CID ## -

➤ **Good Housekeeping**

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all the product will be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The site contractor will inspect daily to ensure proper use and disposal of materials onsite.

➤ **Hazardous Products**

These practices will be used to reduce the risks associated with all hazardous materials.

- Products will be kept in original containers unless they are not resealable.
- Original labels and material safety data sheets (MSDS) will be reviewed and retained.
- Contractor will follow procedures recommended by the manufacturer when handling hazardous materials.
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed.

5. **Product-specific Practices**

The following product-specific practices will be followed onsite:

➤ **Petroleum Products**

- Vehicles and equipment that are fueled and maintained on site will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products

KyTC BMP Plan for Project CID ## -

onsite will be stored in tightly sealed containers, which are clearly labeled and will be protected from exposure to weather.

- The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.
- This project (will / will not) (3) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55-gallon capacity and larger.

➤ **Fertilizers**

Fertilizers will be applied at rates prescribed by the contract, standard specifications or as directed by the resident engineer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

➤ **Paints**

All containers will be tightly sealed and stored indoors or under roof when not being used. Excess paint or paint wash water will not be discharged to the drainage or storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

➤ **Concrete Truck Washout**

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a shallow earthen wash basin will be excavated away from ditches to receive the wash water.

➤ **Spill Control Practices**

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.

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- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean-up will be disposed in accordance with appropriate regulations.

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials. (1)

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.
2. Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.
3. Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance. (1)

KyTC BMP Plan for Project CID ## -

F. Inspections

Inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have successfully completed KEPSC-RI course as required by Section 213.02.02 of the Standard Specifications for Road and Bridge Construction, current edition.
- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stockpiles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected, and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

KyTC BMP Plan for Project CID ## - #####

G. Non-Storm Water Discharges

It is expected that non-storm water discharges may occur from the site during the construction period. Examples of non-storm water discharges include:

- Water from water line flushings.
- Water from cleaning concrete trucks and equipment.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater and rainwater (from dewatering during excavation).

All non-storm water discharges will be directed to the sediment basin or to a filter fence enclosure in a flat vegetated infiltration area or be filtered via another approved commercial product.

H. Groundwater Protection Plan (3)

This plan serves as the groundwater protection plan as required by 401 KAR 5:037.

- Contractors statement: (3)

The following activities, as enumerated by 401 KAR 5:037 Section 2, require the preparation and implementation of a groundwater protection plan, and will or may be conducted as part of this construction project:

_____2. (e) Land treatment or land disposal of a pollutant.

_____2. (f) Storing...or related handling of hazardous waste, solid waste or special waste...in tanks, drums, or other containers, or in piles (does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site).

_____2. (g) ...handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant.

_____2. (j) Storing or related handling of road oils, dust suppressants at a central location.

_____2. (k) Application or related handling of road oils, dust suppressants or deicing materials (does not include use of chloride-based deicing materials applied to roads or parking lots).

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_____2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes (does not include bore holes for the purpose of explosive demolition).

Or, check the following only if there are no qualifying activities:

_____ There are no activities for this project as listed in 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan.

The contractor is responsible for the preparation of a plan that addresses the 401 KAR 5:037 Section 3. (3) Elements of site-specific groundwater protection plan:

- (a) General information about this project is covered in the Project information.
- (b) Activities that require a groundwater protection plan have been identified above.
- (c) Practices that will protect groundwater from pollution are addressed in *Section C: Other Control Measures*.
- (d) Implementation schedule—all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity.
- (e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor, and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provided to the resident engineer.
- (f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections.
- (g) Certification (see signature page).

KyTC BMP Plan for Project CID ## - ####

Contractor and Resident Engineer Plan Certification

The contractor that is responsible for implementing this BMP plan is identified in the Project Information section of this plan.

The following certification applies to all parties that are signatory to this BMP plan:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, this plan complies with the requirements of 401 KAR 5:037. By this certification, the undersigned state that the individuals signing the plan have reviewed the terms of the plan and will implement its provisions as they pertain to ground water protection.

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

Signed _____	_____	_____
Typed or printed name ²	Title	Signature

(3) Signed _____	_____	_____
Typed or printed name ¹	Title	Signature

- 1. Contractors Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort, Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.*
- 2. KYTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort, Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.*

KyTC BMP Plan for Project CID ## - #####

Sub-Contractor Certification

The following sub-contractor shall be made aware of the BMP plan and responsible for implementation of BMPs identified in this plan as follows:

Subcontractor Name:

Address:

Phone:

The part of BMP plan this subcontractor is responsible to implement is:

I certify under penalty of law that I understand the terms and conditions of the general Kentucky Pollutant Discharge Elimination System permit that authorizes the storm water discharges, the BMP plan that has been developed to manage the quality of water to be discharged as a result of storm events associated with the construction site activity and management of non-storm water pollutant sources identified as part of this certification.

Signed _____, _____
Typed or printed name¹ Title Signature

- 1. *Sub-Contractor Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort, Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.*

KENTUCKY TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS BRIDGE REHABILITATION PLANS

Sheet No.	Description
S1	Title and Location Map
S2	General Notes
S3	Plan and Elevation
S4	Typical Sections
S5	Abutment 1
S6	Abutment 2
S7	Substructure Details
S8	Environmentally-Cleared Area

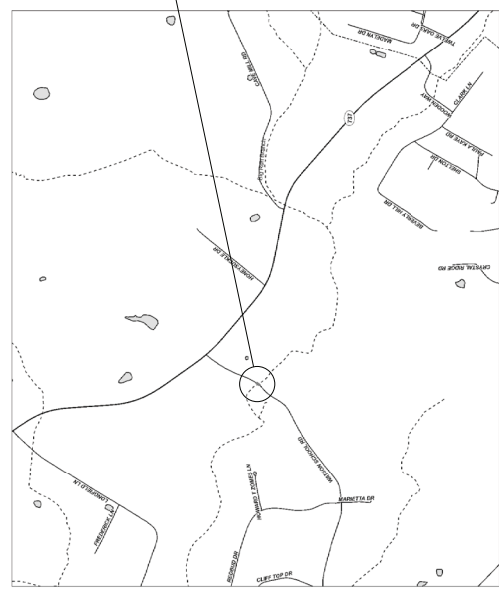
SPECIAL NOTES	
for Contract Completion Date and Liquidation	
Damages on Bridge Repair Contracts	
for Traffic Control on Bridge Repair Contracts	
for Concrete Patching Repair	
for Concrete Coating	
for Concrete Sealing	
for Paving Bridge Overlay, Approach Pavement	
for Epoxy Injection Crack Repairs	
for Erosion Control	
for Over the Side Drainage	
for Bridging Kentucky Project Stencil	

ACTIVE SEPIAS

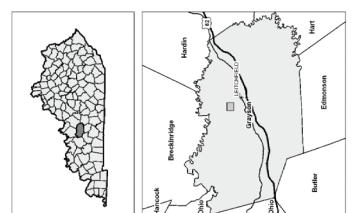
STANDARD DRAWINGS	
RRR-001-06	Box Beam General Notes and References
RRR-002-03	Box Beam Bearing Details
RRR-003-03	Box Beam Masonry Abutment Details
RRR-004-04	Box Beam Masonry Road Details
RRR-005-05	Box Beam BTI and Cell Details
RRR-006-06	Box Beam System Stone Mounted MS Details
RRR-007-07	Box Beam Cellular Cast in Place Concrete Details
RRR-008-08	Box Beam Cellular Cast in Place Concrete Details
RRR-009-09	Steel Guardrail Posts
RRR-010-10	Steel Guardrail System Transition
RRR-011-11	Guardrail End Treatment Type 1
RRR-012-12	Detailers for Guardrail

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction.
AASHTO LRFD Bridge Construction Specifications with Current Interims.



LOCATION MAP



043C00057N
WATSON SCHOOL ROAD (CR 1100)
OVER BIG RUN BRANCH
37.507752, -86.326232

STATE OF KENTUCKY
MARIO R. FASANO JR.
31860
LICENSED PROFESSIONAL ENGINEER
Date: 2/20/2021
Signed by: Mario R Fasano Jr.
Date: 1-5-21-0400

BRIDGE NUMBER
043C00057N

GRAYSON
DEPARTMENT OF HIGHWAYS

TITLE AND LOCATION MAP
BIG RUN BRANCH

PREPARED BY
Stantec

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. All references to the Specifications are to the current edition of the Kentucky LRFB Bridge Construction Specifications, with Interims.
DESIGN LOAD: This superstructure is designed for KY-HL93 Live Load, i.e., 1.25xASHTO HL93 live load. This bridge is designed for a future wearing surface of 15 psf.
DESIGN METHOD: All reinforced concrete members are designed by the moment or greater. The load and resistance factor design method as specified in the current AASHTO Specifications.
ON-SITE INSPECTION: Each Contractor submitting a bid for this project 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 shall constitute acceptance of the conditions shown on the Plans. All claims resulting from the site conditions will not be honored by the Department of Highways.

VERIFYING FIELD CONDITIONS: 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 conditions in the field. The Contractor shall notify 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 for 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 following stencils shall be maintained in each Contract in accordance with the location outlined in the Special Note for Bridging Kentucky Project Stencil:
 - Year and Design Loading
 - Drawing Number
 - Contractor
 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 shall be responsible for locating and protecting all utilities 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 completion of the structure to the time of opening to normal traffic following completion of all work required in the Contract. After completion of all work required in 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 job item for "Remove Superstructure" shall consist of the 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 hammer 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 30 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 concrete. 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 concrete such as oil, grease, dirt, sulfur, or other 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 Reinforcement of the American Welding Society, Specifications, Current Edition. Non-ferrous metal shall not be used for welding reinforcement, 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 oil 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 conformance 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 shall be repaired to the satisfaction of the Utility Operators with the Contractor's cost. The Contractor is notified 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.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing between bars shall be in accordance with the provisions of the BEINFORCEMENT section of the Specifications. All reinforcement shall be coated in accordance with section 811.0 of the Standard Specifications. Any reinforcing bars designated by suffix 's' in 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 $\frac{3}{4}$ " unless otherwise noted.
CONCRETE SEALING: Apply concrete sealing in accordance with the Special Note for Concrete Sealing.
CONCRETE COATING: Concrete coating is estimated at 845 SF. It is the responsibility of the Contractor to verify this estimate and bid appropriately. No payment adjustments will be made if the actual quantity is different than the estimate.
PREFORMED CORK EXPANSION JOINT MATERIAL: Preformed Cork Expansion Joint Material shall conform to subsection 807.04.02 (Type III) 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_XXXXXXX@doacs.e-builder.net, for review. These submissions shall depict the shop plans in .Pdf format. It is the responsibility of the fabricator's designer to make corrections on these drawings. All shop drawings shall be submitted 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 the Engineer of Record reserves the right to require such corrections, the Engineer of Record reserves the right to require such changes to the design plans as proposed, the shop drawings reflecting these changes shall be submitted through the process above.
 Note: The designation in the email XXXXXX@doacs.e-builder.net refers to the Bridge ID number which is located on the Title Sheet, 31 of the Bridge Plans. Example: SHOP_042800019@doacs.e-builder.net

C. JOINT WATERPROOFING AT ABUTMENTS
 The joint between the abutment seats 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. The joints shall be prepared with a 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:
 - SEALING TAPE: 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 applied by taping 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 the Concrete Box Beams and no separate measurement or payment shall be made.

REVISION

DATE	REVISION	DATE
SEPTEMBER 10, 2020		
DESIGNED BY: M. FASANO	E. ADKINS	CHECKED BY:
DETAILED BY: A. GRACE	M. FASANO	

COMMUNALITY OF KENTUCKY
DEPARTMENT OF HIGHWAYS
 GRAYSON COUNTY
 BRIDGE NO. CR T100
 BIG RUN BRANCH
GENERAL NOTES
 PREPARED BY: **Stantec**

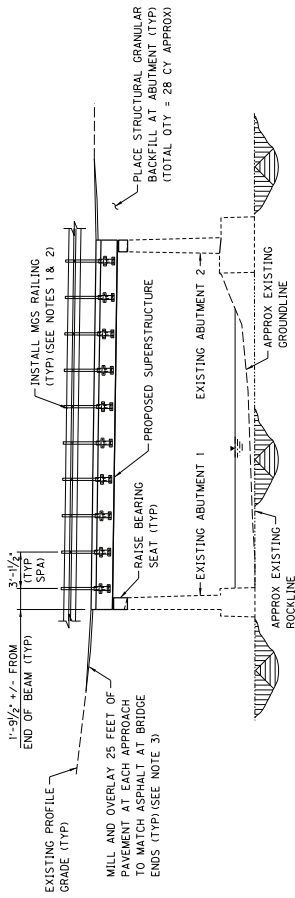
BRIDGE NUMBER
 043C00057N

USFR	DATE PLOTTED	FILE NAME
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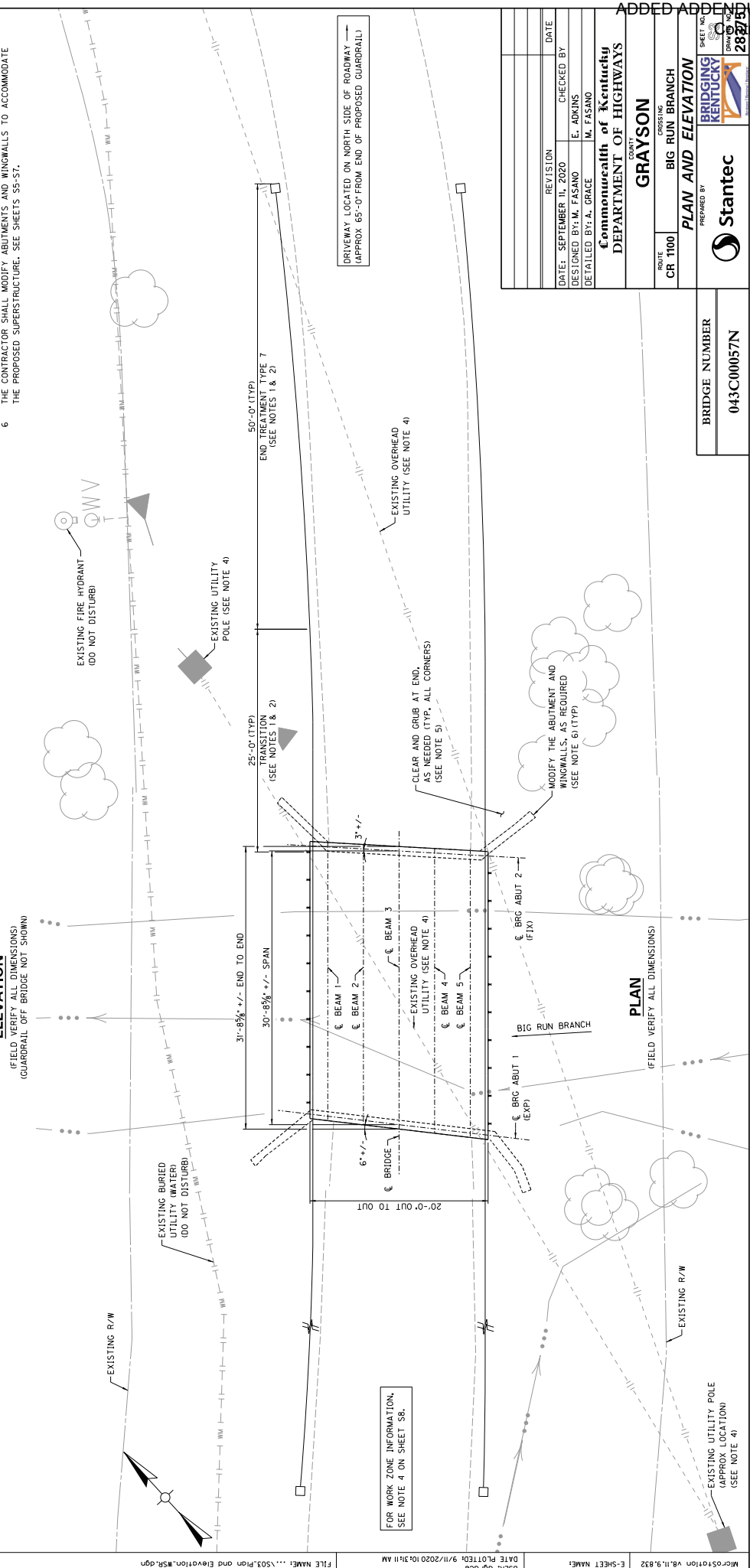
MICROSTATION V8.1.8.832
 E-SHEET NAME:

NOTES:

1. INSTALL MGS RAILINGS, TRANSITION RAILINGS AND END TREATMENTS USING STANDARD DRAWINGS BR5-011, RB1-001-12, RBR-001-13, RBR-005-11, RBR-015-06, RBR-016, AND RBR-050-08.
2. INSTALL GUARDRAIL DELINEATORS PER STANDARD DRAWING RBR-055-01. DELINEATORS SHALL BE INCIDENTAL TO THE BID ITEM FOR "GUARDRAIL STEEL W BEAM-5 FACE (7 FT POST)".
3. THE BRIDGE OVERLAY APPROACH PAVEMENT SHALL INCLUDE THE AREAS DESIGNATED AT BOTH ENDS OF THE BRIDGE, AS WELL AS THE PROPOSED BRIDGE DECK AREA.
4. THE EXISTING OVERHEAD UTILITIES ARE TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION ACTIVITIES. SEE GUIDANCE PROVIDED IN CONTRACT UTILITIES NOTE.
5. THE CONTRACTOR SHALL REMOVE ALL NECESSARY VEGETATION ADJACENT TO STRUCTURE PRIOR TO CONSTRUCTION ACTIVITIES. ALL WORK SHALL BE PAYED FOR WITH THE BID ITEM FOR "CLEARING AND GRUBBING".
6. THE CONTRACTOR SHALL MODIFY ABUTMENTS AND WINGWALLS TO ACCOMMODATE THE PROPOSED SUPERSTRUCTURE. SEE SHEETS 55-57.



ELEVATION
(FIELD VERIFY ALL DIMENSIONS)
(GUARDRAIL OFF BRIDGE NOT SHOWN)



PLAN
(FIELD VERIFY ALL DIMENSIONS)

REVISION	DATE
DESIGNED BY: M. FASANO	CHECKED BY: E. ADKINS
DATE: SEPTEMBER 11, 2020	DETAILS BY: M. GRACE
COMMUNICABILITY OF KENTUCKY DEPARTMENT OF HIGHWAYS GRAYSON COUNTY BIG RUN BRANCH CROSSING CR T100	
PREPARED BY: Stantec	
BRIDGE NUMBER 043C00057N	

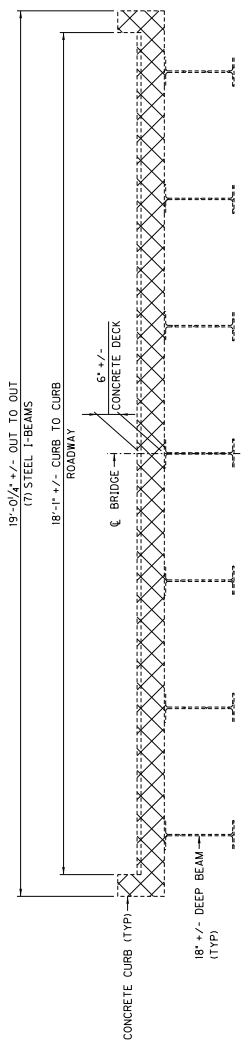
NOTES:

- 1 REPLACE EXISTING SUPERSTRUCTURE WITH (5) PRECAST BOX BEAMS AND ASPHALT OVERLAY.
- 2 APPLY CONCRETE SEALING TO PROPOSED SUPERSTRUCTURE, PER SPECIAL NOTE.
- 3 APPLY WATERPROOF MEMBRANE, PER SPECIAL NOTE.
- 4 APPLY ASPHALT OVERLAY IN TWO LIFTS:
LIFT 1: LEVELING AND WEDGING PG 64-22
(1.5" AT EDGE OF DECK AND 3.5" AT CROWN)
LIFT 2: CL. 2 ASPH SURF .0380 PG 64-22
(1.5")
- 5 THE CONTRACTOR SHALL INSTALL LONGER POSTS THAN INDICATED IN STANDARD DRAWING BHS-011, IF NECESSARY, TO ACCOMMODATE THE ASPHALT OVERLAY THICKNESS AT THE EDGE OF DECK.
- 6 INSTALL DRIP STRIPS ALONG BOTH SIDES OF THE BRIDGE, PER SPECIAL NOTE.

BOX BEAM NOTES:

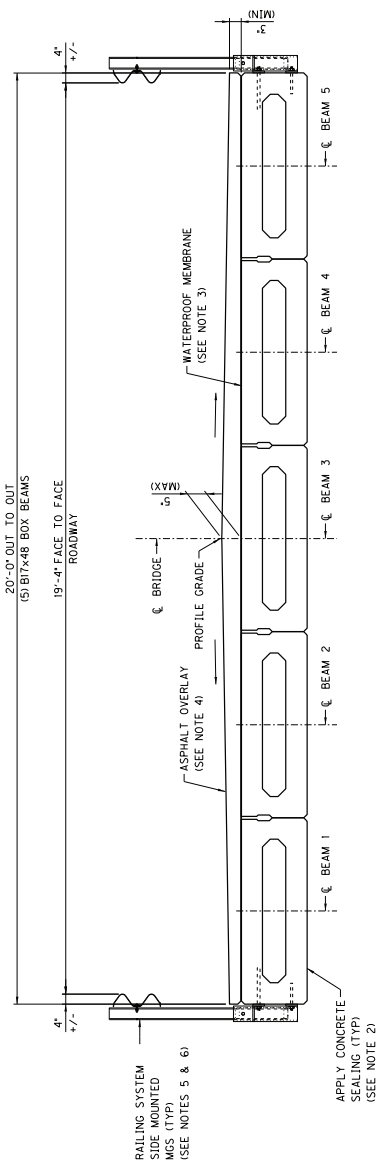
- 1 BOX BEAMS SHALL BE FABRICATED IN ACCORDANCE WITH STANDARD DRAWING BDP-007-05, AS TABULATED FOR A 34'-0" LENGTH, THE SPAN LENGTH AND SKEWED BEAM ENDS SHALL MATCH THE EXISTING CONDITIONS.
- 2 BOX BEAMS SHALL BE INSTALLED AS SHOWN AND IN COMPLIANCE WITH STANDARD DRAWINGS BDP-001-06, BDP-002-03, BDP-003-03 AND BDP-04-04.

☒ REMOVAL AREA (SEE NOTE 1)



EXISTING TYPICAL SECTION

(FIELD VERIFY ALL DIMENSIONS)



PROPOSED TYPICAL SECTION

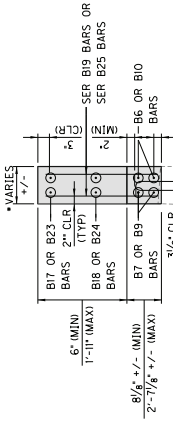
(BEAM REINFORCEMENT AND LATERAL TENSION RODS NOT SHOWN FOR CLARITY)

REVISION	DATE
CHECKED BY	
DESIGNED BY: M. FASANO	E. ADKINS
DETAILED BY: A. GRACE	M. FASANO
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS	
GRAYSON	
ROUTE	CROSSING
CR 1100	BIG RUN BRANCH
TYPICAL SECTIONS	
PREPARED BY	
Stantec	

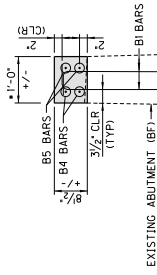
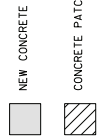
BRIDGE NUMBER	043C00057N
SHEET NO.	281 OF 285

NOTES:

- REMOVE EXISTING SUPERSTRUCTURE AND MODIFY EXISTING BUTTRESS AND WINGWALLS TO ACCOMMODATE DIMENSIONS OF NEW SUPERSTRUCTURE. REINFORCE EXISTING WINGWALLS TO ALLOW FOR A 3'-5" ASPHALT OVERLAY 17" DEEP BEAM AND THE BEARING CORK. ADJUST THE DEPTH OF THE PROPOSED BEARING SEAT, AS REQUIRED.
- ABUTMENT 2 EPOXY INJECTION CRACK REPAIRS ± 2 L.F. (APPROX)
- ABUTMENT 2 PATCHING = 15 S.F. (APPROX)
- AFTER CONCRETE REPAIRS AND MODIFICATIONS, APPLY CONCRETE COATING TO VISIBLE PORTION OF THE SUBSTRUCTURE UNITS, PER SPECIAL NOTE.
- SEE POURING SEQUENCE NOTES ON SHEET 57.

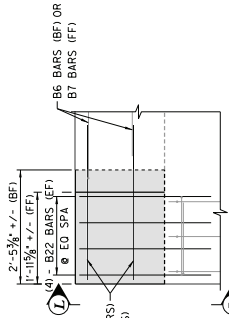


SECTION E-E
(•• FIELD VERIFY DIMENSIONS)



SECTION F-F
(•• FIELD VERIFY DIMENSIONS)

(SUPERSTRUCTURE AND DWEL BARS NOT SHOWN FOR CLARITY)

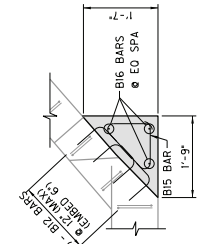


SECTION K-K
(CHEEKWALL SECTION - SWWW ONLY)

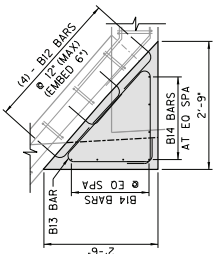
(2) - B20 BARS (BF) (SPA W/ B6 BARS)
(2) - B21 BARS (FF) (SPA W/ B7 BARS)

SECTION L-L
(CHEEKWALL SECTION - SWWW ONLY)

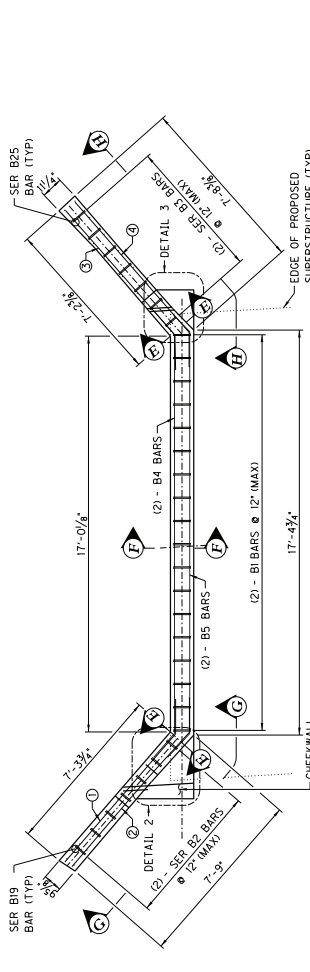
(2) - B20 BARS (BF) (SPA W/ B6 BARS)
(2) - B21 BARS (FF) (SPA W/ B7 BARS)



DETAIL 2
(SEE NOTE 5)

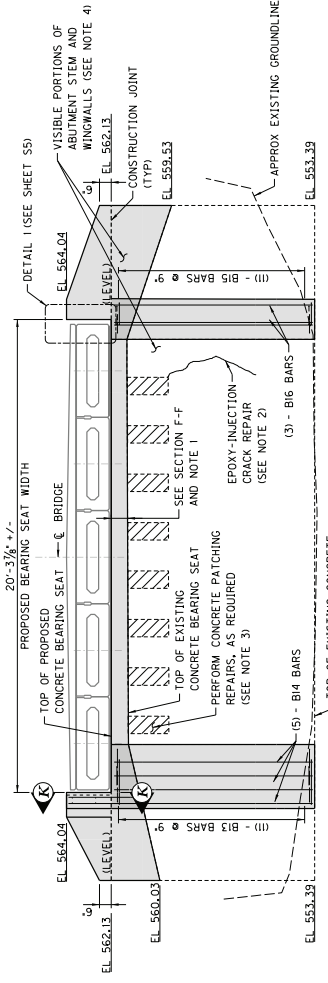


DETAIL 3
(SEE NOTE 5)



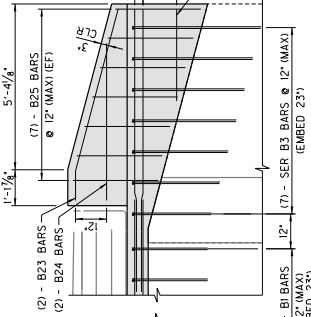
ABUTMENT 2 - PLAN
(FIELD VERIFY ALL DIMENSIONS)

(SUPERSTRUCTURE NOT SHOWN FOR CLARITY)



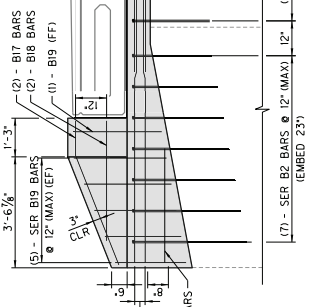
ABUTMENT 2 - WEST FACE
(SOME REINFORCEMENT NOT SHOWN FOR CLARITY)

(BRIDGE RAILING NOT SHOWN FOR CLARITY)



SECTION G-G
(DEVELOPED VIEW ALONG FRONT FACE)

(FIELD VERIFY ALL DIMENSIONS)



SECTION H-H
(DEVELOPED VIEW ALONG FRONT FACE)

(FIELD VERIFY ALL DIMENSIONS)

REVISION	DATE
DESIGNED BY: M. FASANO	CHECKED BY: E. ADKINS
DETAILED BY: A. GRACE	DATE: SEPTEMBER 11, 2020

COMMUNALITY of Kentucky
DEPARTMENT OF HIGHWAYS

ROUTE CR T100
BIG RUN BRANCH

GRAYSON
CROSSING

ABUTMENT 2

PREPARED BY: Stantec

SHEET NO. 288 OF 289

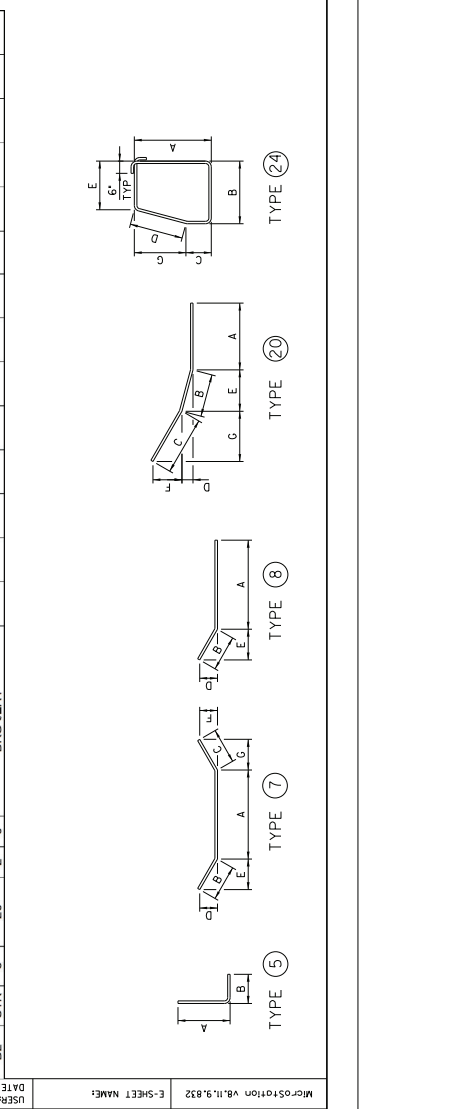
BRIDGE NUMBER	043C00057N
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BILL OF REINFORCEMENT - ABUTMENT 1

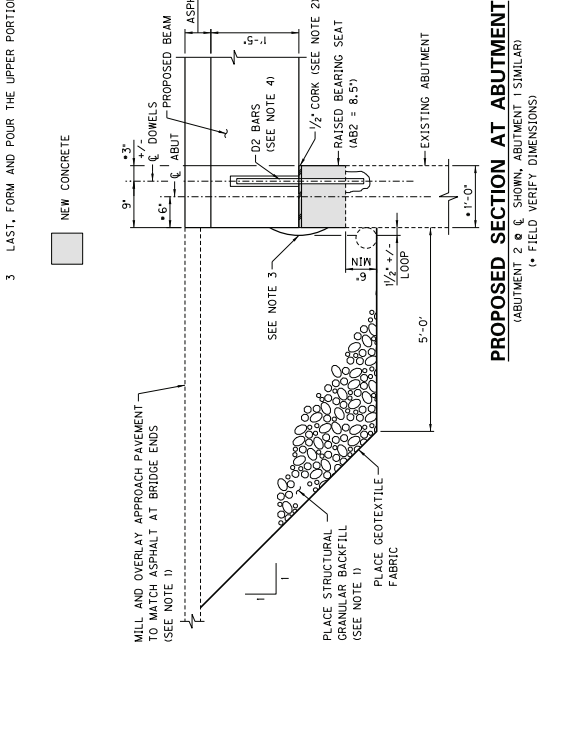
MARK	TYPE	SIZE	NUMBER	LENGTH FT. IN.	LOCATION	A		B		C		D		E		F		G	
						FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
A1	5	5	58	3	WINGWALL (BOT)/BRG SEAT	2	11 1/2	0	6 1/2										
SER	5		2 SETS 9 BARS	67	0	VARIES	0	6 1/2											
A2	7	5	2	23	1	20	1	6	1	6	1	0 3/4	1	0 3/4	1	0 3/4	1	0 3/4	1
A3	7	5	2	23	1	20	8	6	1	6	1	0 3/4	1	0 3/4	1	1 1/8	1	0 3/8	1
A4	7	5	2	8	10	4	6 7/8	2	5 3/8	0	9 5/8	2	5	1	2 7/8	1	2 3/4	1	11 7/8
A5	20	5	2	6	10	8	9 7/8	2	7 1/2	1	4 7/8	0	9 5/8	2	6	1	0	0	0
A6	20	5	2	6	10	8	6 1/2	1	5 3/4	1	0 7/8	1	0 1/2	1	0 7/8	2	6	1	0
A7	8	5	2	10	11	8	6 1/2	1	5 3/4	1	0 7/8	1	0 1/4						
A8	8	5	2	2	11	WINGWALL (BOT)													
A9	STR	8	2	7	10	WINGWALL (TOP)	4	6	2	6 3/8	0	9 1/2	2	5	0	0 1/4	0	0 1/4	0
A10	STR	20	5	1	7	WINGWALL (TOP)	4	9 7/8	2	7 1/2	0	4	0	6	0	3	0	3	0
A11	STR	20	5	1	5	WINGWALL (TOP)	4	6	0	11 3/8	0	0 1/2	0	10 7/8	0	0 1/4	0	0 1/4	0
A12	STR	20	5	1	6	WINGWALL (TOP)	4	9 7/8	1	0 1/2	0	4	0	11 7/8	0	3	0	3	0
A13	STR	8	5	2	39	6	2	10 3/8	MAX TO 1-6 1/4" MIN (INCREMENTS OF 2")										
A13-9F	8	5	2	7	7	WINGWALL (TOP)	7	4 1/2	0	2 1/2	0	0 1/2	0	2	5	0	0 1/4	0	0 1/4
A13-5F	8	5	1	8	0	WINGWALL (TOP)	7	4 1/2	0	7 3/4	0	1 1/2	0	7	0	3	0	3	0
A14-9F	STR	5	1	5	10	WINGWALL (TOP)													
A14-5F	STR	5	1	6	3	WINGWALL (TOP)													
A15	STR	5	17	2	11	WINGWALL (TOP)													
D1	STR	8	20	2	0	BRG SEAT													

BILL OF REINFORCEMENT - ABUTMENT 2

MARK	TYPE	SIZE	NUMBER	LENGTH FT. IN.	LOCATION	A		B		C		D		E		F		G	
						FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
B1	5	5	36	3	1	VARIES	0	6 1/2											
SER	5		2 SETS 7 BARS	43	9	A-3: 8 1/4" MAX TO 1-6 1/4" MIN (INCREMENTS OF 2 1/4")													
B2	5	5	2	19	7	VARIES	0	6 1/2											
B3	7	5	2	19	10	A-4: 1-1 3/8" MAX TO 2'-5 1/2" MIN (INCREMENTS OF 3 1/8" +)	17	1 5/8	1	3	1	2	0	9 3/4	0	11 3/8	0	9 1/8	0
B4	7	5	2	8	7	VARIES	17	3 1/8	1	3	1	3	0	10 1/4	0	11	0	10 1/2	0
B5	8	5	2	8	7	WINGWALL (BOT)	7	3 3/8	1	3 1/4	0	10	0	11 1/2	0	11	0	10 3/4	0
B6	8	5	2	8	11	WINGWALL (BOT)	7	8	1	3	0	9 7/8	0	11 1/4	0	11	0	10 3/4	0
B7	8	5	2	3	8	WINGWALL (BOT)	7	5	1	2 3/4	0	9 3/4	0	11	0	10 1/2	0	10 3/4	0
B8	STR	8	5	2	8	WINGWALL (BOT)	7	5	1	3	0	9 7/8	0	11 1/4	0	10 1/2	0	10 3/4	0
B9	8	5	2	8	8	WINGWALL (BOT)	7	5	1	3	0	9 7/8	0	11 1/4	0	10 1/2	0	10 3/4	0
B10	8	5	2	2	11	WINGWALL (BOT)													
B11	STR	5	2	2	5	BRG SEAT - DETAILS 2,3	0	9	0	8	0	7/8	2	6 1/8	0	1	10 3/8	0	10 3/8
B12	5	5	88	1	7	BRG SEAT - DETAIL 2	1	11 1/4	1	9	0	7/8	2	6 1/8	0	1	10 3/8	0	10 3/8
B13	24	4	11	7	6	BRG SEAT - DETAIL 3	0	11 1/2	0	10 7/8	0	7/8	1	2 1/2	0	1	10 5/8	0	10 5/8
B14	STR	5	7	4	2	BRG SEAT - DETAIL 3	0	11 1/2	0	10 7/8	0	7/8	1	2 1/2	0	1	10 5/8	0	10 5/8
B15	24	4	11	4	3	WINGWALL (TOP)	3	9 1/2	0	5 1/2	0	2	0	5 1/8	0	10 5/8	0	10 5/8	0
B16	STR	5	3	8	6	WINGWALL (TOP)	3	9 1/2	0	5 1/2	0	2	0	5 1/8	0	10 5/8	0	10 5/8	0
B17	FF	8	5	1	4	WINGWALL (TOP)	3	9 1/2	0	5 1/2	0	2	0	5 1/8	0	10 5/8	0	10 5/8	0
B17-BF	8	5	1	4	7	WINGWALL (TOP)	3	9 1/2	0	5 1/2	0	2	0	5 1/8	0	10 5/8	0	10 5/8	0
B17-FF	8	5	1	4	3	WINGWALL (TOP)	3	9 1/2	0	5 1/2	0	2	0	5 1/8	0	10 5/8	0	10 5/8	0
B18	STR	5	1	3	2	WINGWALL (TOP)													
B18-BF	STR	5	1	3	6	WINGWALL (TOP)													
B18-FF	STR	5	1	3	6	WINGWALL (TOP)													
SER	STR	5	2 SETS 10 BARS	26	5	WINGWALL (TOP)	2	11 7/8	MAX TO 2'-3 3/8" MIN (INCREMENTS OF 2 1/8")										
B19	STR	5	1	2	11	WINGWALL (TOP)	2	9	1	0	0	8 5/8	0	8 3/8	0	8 3/8	0	8 3/8	0
B20	8	5	2	3	9	CHEEKWALL	2	9	1	0	0	8 5/8	0	8 3/8	0	8 3/8	0	8 3/8	0
B21	8	5	2	3	6	CHEEKWALL	2	6	1	0	0	9	0	9	0	9	0	9	0
B22	STR	5	8	2	10	CHEEKWALL	5	5	0	5	0	1 1/4	0	4 7/8	0	4 7/8	0	4 7/8	0
B23	STR	8	5	1	5	WINGWALL (TOP)	5	5	0	5	0	1 1/4	0	4 7/8	0	4 7/8	0	4 7/8	0
B23-BF	STR	8	5	1	6	WINGWALL (TOP)	5	5	0	5	0	1 1/4	0	4 7/8	0	4 7/8	0	4 7/8	0
B24	STR	5	1	6	0	WINGWALL (TOP)													
B24-BF	STR	5	1	6	0	WINGWALL (TOP)													
B25	STR	5	14	2	9	WINGWALL (TOP)													
B25-BF	STR	5	14	2	9	WINGWALL (TOP)													
D2	STR	8	20	2	0	BRG SEAT													



- REBAR NOTES:
- REFER TO SPECIAL NOTE FOR BRIDGE APPROACH PAVEMENT.
 - SET CORK IN ACCORDANCE WITH STANDARD DRAWING BDP-02-03.
 - 12" WIDE MASTIC TAPE TO WATERPROOF THE JOINT BETWEEN THE BEAM AND THE ABUTMENT. THE TAPE SHALL BE LOOPEO AS SHOWN TO ALLOW FOR MOVEMENT WITHOUT DAMAGE TO THE TAPE. INSTALL PLASTIC FILM OR OTHER BOND BREAKER BETWEEN TAPE LOOP AND EXPANSION JOINT.
 - INSTALL DOWEL BARS IN ACCORDANCE WITH STANDARD DRAWING BDP-002-04. EMBED A MINIMUM OF 12" AND GROUT.
- POURING SEQUENCE NOTES:
- FIRST, FORM AND POUR THE BEARING SEAT AND THE BOTTOM PORTION OF THE WINGWALLS.
 - NEXT, FORM AND POUR DETAILS 2 AND 3. CONSTRUCTION JOINTS MAY BE NEEDED. THE CONTRACTOR SHALL REMOVE EARTHEN MATERIAL IN FRONT OF THE ABUTMENT/ WINGWALL, AS NEEDED TO CONSTRUCT THE MODIFICATION. EXCAVATION WORK SHALL BE INCIDENTAL TO THE BID ITEM FOR REMOVE SUPERSTRUCTURE. B4 AND B6 BARS SHALL BE EMBEDDED INTO THE EXISTING CONCRETE FOUNDATION PAD A DISTANCE EQUAL TO HALF THE PAD THICKNESS. THE REBAR LENGTHS SHALL BE AS SHOWN. THE EXISTING PAD, A PAD EXTENSION SHALL BE CONSTRUCTED PRIOR TO FORMING.
 - LAST, FORM AND POUR THE UPPER PORTION OF THE WINGWALLS.



PROPOSED SECTION AT ABUTMENT
(ABUTMENT 2 & E. SHOWN, ABUTMENT 1 SIMILAR)
(* FIELD VERIFY DIMENSIONS)

REVISION	DATE
DESIGNED BY: M. FASANO	E. ADKINS
CHECKED BY: M. FASANO	

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

GRAYSON
COUNTY
BIG RUN BRANCH

ROUTE CR T100

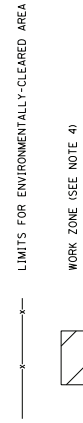
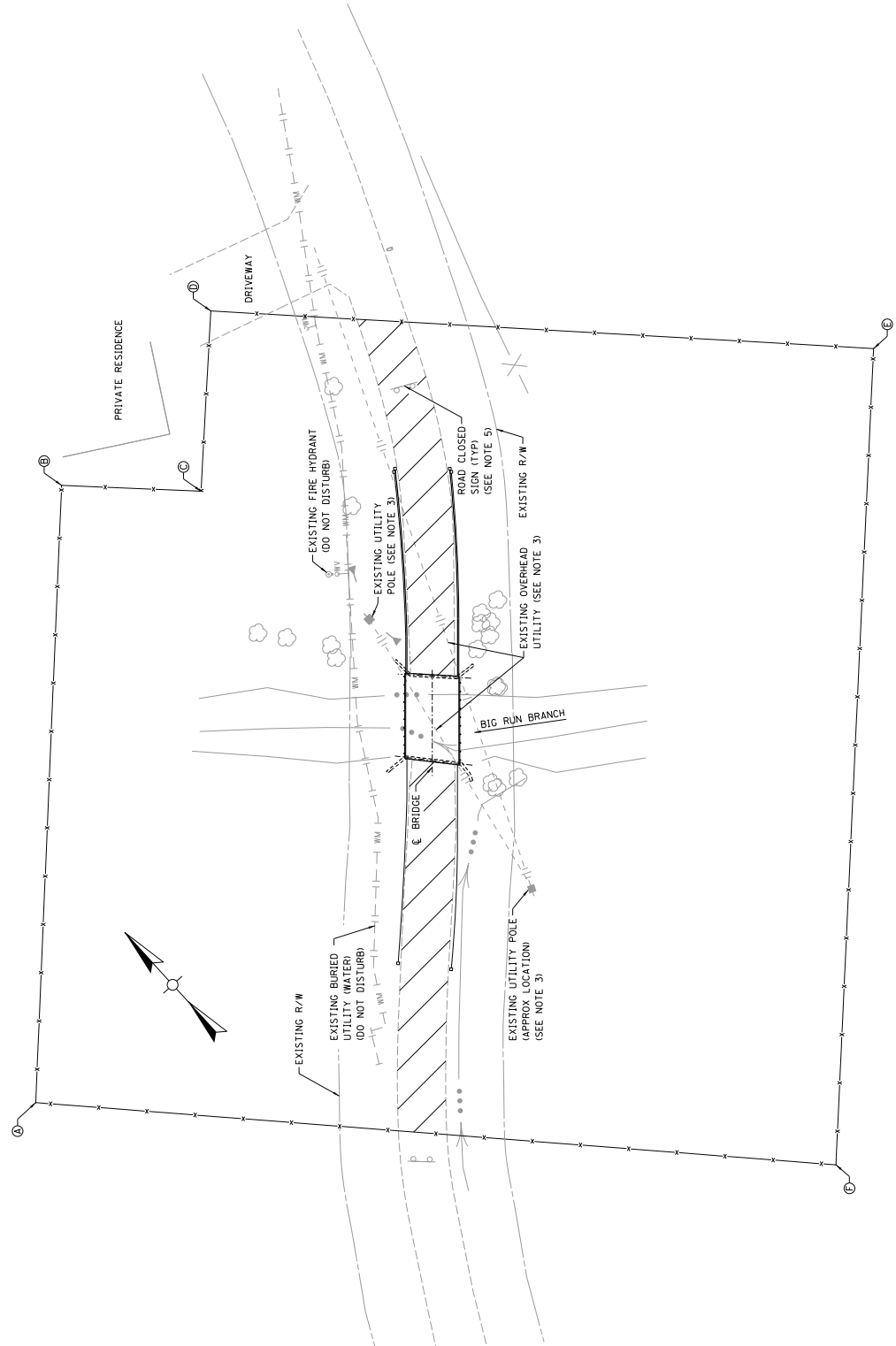
PREPARED BY: **Stantec**

BRIDGE NUMBER: **043C00057N**

SHEET NO. **289** OF **289**

NOTES:

- 1 THE CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITIES OUTSIDE OF THE EXISTING RIGHT-OF-WAY, UNLESS SHOWN ELSEWHERE IN THE REHABILITATION PLANS. ANY AGREEMENTS MADE WITH ADJACENT PROPERTY OWNERS FOR ACCESS, STAGING AREAS, ETC. MUST BE MADE WITHIN THE ENVIRONMENTALLY-CLEARED AREA. THE CONTRACTOR DESIRES TO UTILIZE AN AREA OUTSIDE OF THE ENVIRONMENTALLY-CLEARED AREA. ADDITIONAL CLEARANCE MUST BE OBTAINED (SEE GENERAL NOTES FOR ADDITIONAL INFORMATION).
- 2 THE CONTRACTOR SHALL PROVIDE SNOW FENCING TO CLEARLY DELINEATE THE BOUNDARY OF THE PROJECT. PER THE GUIDANCE OUTLINED IN THE SPECIAL NOTE FOR ENVIRONMENTAL COMMITMENTS, SNOW FENCING SHALL BE PAID FOR WITH BID ITEM 21476ED.
- 3 EXISTING OVERHEAD UTILITY TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION ACTIVITIES. SEE GUIDANCE PROVIDED IN CONTRACT UTILITIES NOTE.
- 4 THE CONTRACTOR SHALL UTILIZE THE PORTIONS OF THE CLOSED ROAD WITHIN THE ENVIRONMENTALLY-CLEARED AREA AS A WORK ZONE. THE DESIGNATED AREAS SHOWN CAN BE USED TO PLACE HEAVY EQUIPMENT, LAYDOWN BEAMS, ETC., BUT DRIVEWAY ACCESS TO THE PRIVATE RESIDENCE SHALL BE MAINTAINED AT ALL TIMES.
- 5 AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL RETURN THE TYPE III BARRICADES, WHICH ARE PRESENTLY LOCATED AT THE ENDS OF THE BRIDGE, TO THE KYTC DISTRICT OFFICE OR COUNTY MAINTENANCE OFFICE.
- 6 COORDINATES (KENTUCKY SINGLE ZONE)
 - Ⓐ N 3708946 E 4753884
 - Ⓑ N 3709106 E 4754042
 - Ⓒ N 3709070 E 4754078
 - Ⓓ N 3709116 E 4754125
 - Ⓔ N 3708943 E 4754294
 - Ⓕ N 3708733 E 4754083



REVISION	DATE
DESIGNED BY: M. FASANO	E. ADKINS
DATE: SEPTEMBER 11, 2020	CHECKED BY:
DETAILED BY: A. GRACE	M. FASANO

STATE OF KENTUCKY
Department of Kentucky Highways
 DEPARTMENT OF HIGHWAYS
 COUNTY: GRAYSON
 ROUTE: CR 1100
 CROSSING: BIG RUN BRANCH
ENVIRONMENTALLY-CLEARED AREA
 SHEET NO. 281 OF 287



BRIDGE NUMBER
043C00057N

**ENVIRONMENTALLY-CLEARED
AREA FOR CONSTRUCTION**