CALL NO. 200

CONTRACT ID. 245355

CALLOWAY - HICKMAN COUNTIES

FED/STATE PROJECT NUMBER 121GR24D055-STP BRZ

DESCRIPTION VARIOUS ROUTES IN DISTRICT 1

WORK TYPE BRIDGE REPLACEMENT

PRIMARY COMPLETION DATE 11/30/2026

LETTING DATE: June 20,2024

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME June 20,2024. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

DBE CERTIFICATION REQUIRED - 5%

REQUIRED BID PROPOSAL GUARANTY: Not less than 5% of the total bid.

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PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 01

CONTRACT ID - 245355

121GR24D055-STP BRZ

COUNTY - CALLOWAY

PCN - BR01801212400
STP BRZ 9030 (471)

KY 121 (MP 10.704) ADDRESS DEFICIENCIES OF KY 121 OVER CLAYTON CREEK (018B00018N) (MP 10.976), A DISTANCE OF 0.27 MILES.BRIDGE REPLACEMENT SYP NO. 01-10099.00.

GEOGRAPHIC COORDINATES LATITUDE 36:34:49.00 LONGITUDE 88:15:10.00

ADT 5,929

PCN - BR01801212401
STP BRZ 9030 (472)

KY 121 (MP 5.18) ADDRESS DEFICIENCIES OF KY 121 OVER BLOOD RIVER (018B00023N) (MP 5.35), A DISTANCE OF 0.17 MILES.BRIDGE REPLACEMENT SYP NO. 01-10100.00.

GEOGRAPHIC COORDINATES LATITUDE 36:32:54.00 LONGITUDE 88:09:51.00

ADT 3,080

COUNTY - HICKMAN

PCN - BR05300512400
STP BRZ 9030 (425)

US 51 (MP 11.78) ADDRESS DEFICIENCIES OF US 51 OVER BRUSH CREEK (053B00002N) (MP 12.06), A DISTANCE OF 0.28 MILES.BRIDGE WITH GRADE, DRAIN & SURFACE SYP NO. 01-10144.00.

GEOGRAPHIC COORDINATES LATITUDE 36:43:34.00 LONGITUDE 88:59:59.00

ADT 1,561

COMPLETION DATE(S):

COMPLETED BY 11/30/2026 APPLIES TO ENTIRE CONTRACT

CONTRACT NOTES

PROPOSAL ADDENDA

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

BID SUBMITTAL

Bidder must use the Department's electronic bidding software. The Bidder must download the bid file located on the Bid Express website (www.bidx.com) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

JOINT VENTURE BIDDING

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

UNDERGROUND FACILITY DAMAGE PROTECTION

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. When prescribed in said directives, the contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom shall be contacted through their individual Protection Notification Center. Non-compliance with these directives can result in the enforcement of penalties.

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by KRS 14A.9-010 to obtain a certificate of authority to transact business in the Commonwealth ("certificate") from the Secretary of State under KRS 14A.9-030 unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the foreign entity is not required to obtain a certificate as provided in KRS 14A.9-010, the foreign entity should identify the applicable exception. Foreign entity is defined within KRS 14A.1-070.

For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity's solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.

Businesses can register with the Secretary of State at https://secure.kentucky.gov/sos/ftbr/welcome.aspx .

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by email to kytc.projectquestions@ky.gov. The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website (www.transportation.ky.gov/construction-procurement). The answers provided shall be considered part of this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

HARDWOOD REMOVAL RESTRICTIONS

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer. Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

ACCESS TO RECORDS

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and

shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004.

BOYCOTT PROVISIONS

If applicable, the contractor represents that, pursuant to KRS 45A.607, they are not currently engaged in, and will not for the duration of the contract engage in, the boycott of a person or an entity based in or doing business with a jurisdiction with which Kentucky can enjoy open trade. **Note:** The term Boycott does not include actions taken for bona fide business or economic reasons, or actions specifically required by federal or state law.

If applicable, the contractor verifies that, pursuant to KRS 41.480, they do not engage in, and will not for the duration of the contract engage in, in energy company boycotts as defined by KRS 41.472.

LOBBYING PROHIBITIONS

The contractor represents that they, and any subcontractor performing work under the contract, have not violated the agency restrictions contained in KRS 11A.236 during the previous ten (10) years, and pledges to abide by the restrictions set forth in such statute for the duration of the contract awarded.

The contractor further represents that, pursuant to KRS 45A.328, they have not procured an original, subsequent, or similar contract while employing an executive agency lobbyist who was convicted of a crime related to the original, subsequent, or similar contract within five (5) years of the conviction of the lobbyist.

1.0 BUY AMERICA REQUIREMENT.

Follow the "Buy America" provisions as required by 23 U.S.C. § 313 and 23 C.F.R. § 635.410. Except as expressly provided herein all manufacturing processes of steel or iron materials including but not limited to structural steel, guardrail materials, corrugated steel, culvert pipe, structural plate, prestressing strands, and steel reinforcing bars shall occur in the United States of America, including the application of:

- Coating,
- Galvanizing,
- Painting, and
- Other coating that protects or enhances the value of steel or iron products.

The following are exempt, unless processed or refined to include substantial amounts of steel or iron material, and may be used regardless of source in the domestic manufacturing process for steel or iron material:

- Pig iron,
- Processed, pelletized, and reduced iron ore material, or
- Processed alloys.

The Contractor shall submit a certification stating that all manufacturing processes involved with the production of steel or iron materials occurred in the United States.

Produce, mill, fabricate, and manufacture in the United States of America all aluminum components of bridges, tunnels, and large sign support systems, for which either shop fabrication, shop inspection, or certified mill test reports are required as the basis of acceptance by the Department.

Use foreign materials only under the following conditions:

1) When the materials are not permanently incorporated into the project; or
2) When the delivered cost of such materials used does not exceed 0.1 percent of the total Contract amount or $2,500.00, whichever is greater.

The Contractor shall submit to the Engineer the origin and value of any foreign material used.

2.0 – BUILD AMERICA, BUY AMERICA (BABA)

Contractor shall comply with the Federal Highway Administration (FHWA) Buy America Requirement in 23 C.F.R. § 635.410 and all relevant provisions of the Build America, Buy America Act (BABA), contained within the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, §§ 70901-52 enacted November 15, 2021. The BABA requires iron, steel, manufactured products, and construction materials used in infrastructure projects funded by federal financial assistance to be produced in the United States. Comply with 2 C.F.R § 184.

BABA permits FHWA participation in the Contract only if domestic steel and iron will be used on the Project. To be considered domestic, all steel and iron used, and all products manufactured from steel and iron must be produced in the United States and all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied. This requirement does not preclude a minimal use of foreign steel and iron materials, provided the cost of such materials does not exceed 0.1% of the total contract amount under the Contract or $2,500.00 whichever is greater.

BABA permits FHWA participation in the Contract only if all "construction materials" as defined in the Act are made in the United States. The Buy America preference applies to the following construction materials

incorporated into infrastructure projects: non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); Fiber optic cable; optical fiber; lumber; engineered wood; and drywall. Contractor will be required to use construction materials produced in the United States on this Project. The Contractor shall submit a certification stating that all construction materials are certified to be BABA compliant.

Finally, BABA permits the continuation of FHWA's current general applicability waivers for manufactured products, raw materials, and ferryboat parts, but these waivers are subject to reevaluation, specifically the general applicability waiver for manufactured products.

The Contractor has completed and submitted, or shall complete and submit, to the Cabinet a Buy America/ Build America, Buy America Certificate prior to the Cabinet issuing the notice to proceed, in the format below. After submittal, the Contractor is bound by its original certification.

A false certification is a criminal act in violation of 18 U.S.C. § 1001. The Contractor has the burden of proof to establish that it is in compliance.

At the Contractor's request, the Cabinet may, but is not obligated to, seek a waiver of Buy America requirements if grounds for the waiver exist under 23 C.F.R. § 635.410(c) or will comply with the applicable Buy America requirements if a waiver of those requirements is not available or not pursued by the Cabinet.

Please refer to the Federal Highway Administration's Buy America webpage for more information.

Buy America - Construction Program Guide - Contract Administration - Construction - Federal Highway Administration (dot.gov)

BUY AMERICA / BUILD AMERICA, BUY AMERICA (ACT) MATERIALS CERTIFICATE OF COMPLIANCE

The Contractor hereby certifies that it will comply with all relevant provisions of the Build America, Buy America Act, contained within the Infrastructure Investment and Jobs Act, Pub. L. NO. 117-58, §§ 70901-52, the requirements of 23 U.S.C. § 313, 23 C.F.R. § 635.410 and 2 C.F.R § 184.

Date Submitted:_____

Contractor:_____

Signature:_____

Printed Name:_____

Title:_____

NOTE: THIS CERTIFICATION IS IN ADDITION TO ANY AND ALL REQUIREMENTS OUTLINED IN THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND/OR SPECIAL NOTES CONTAINED IN THE PROJECT PROPOSAL.

FEDERAL CONTRACT NOTES

The Kentucky Department of Highways, in accordance with the Regulations of the United States Department of Transportation 23 CFR 635.112 (h), hereby notifies all bidders that failure by a bidder to comply with all applicable sections of the current Kentucky Standard Specifications, including, but not limited to the following, may result in a bid not being considered responsive and thus not eligible to be considered for award:

102.02 Current Rating
102.08 Preparation and Delivery of Proposals
102.13 Irregular Bid Proposals
102.14 Disqualification of Bidders
102.09 Proposal Guaranty

CIVIL RIGHTS ACT OF 1964

The Kentucky Transportation Cabinet, Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, disability, income- level, or Limited English Proficiency (LEP)in consideration for an award.

NOTICE TO ALL BIDDERS

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free “hotline” Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the “hotline” to report such activities.

The “hotline” is part of the DOT’s continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SECOND TIER SUBCONTRACTS

Second tier subcontracts are acceptable per Section 108.01 of the Standard Specifications for Road and Bridge Construction. S u b - Contractors fulfilling a disadvantaged business enterprise goal on a project may enter into a 2nd tier subcontract with a Non-DBE Subcontractor. However, in this instance, none of the work subcontracted to the Non-DBE Contractor will count toward fulfilling the established Disadvantaged Goal for the project.

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

It is the policy of the Kentucky Transportation Cabinet ("the Cabinet") that Disadvantaged Business Enterprises ("DBE") shall have the opportunity to participate in the performance of highway construction projects financed in whole or in part by Federal Funds in order to create a level playing field for all businesses who wish to contract with the Cabinet. To that end, the Cabinet will comply with the regulations found in 49 CFR Part 26, and the definitions and requirements contained therein shall be adopted as if set out verbatim herein.

The Cabinet, contractors, subcontractors, and sub-recipients shall not discriminate on the basis of race, color, national origin, or sex in the performance of work performed pursuant to Cabinet contracts. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted highway construction projects. The contractor will include this provision in all its subcontracts and supply agreements pertaining to contracts with the Cabinet.

Failure by the contractor to carry out these requirements is a material breach of its contract with the Cabinet, which may result in the termination of the contract or such other remedy as the Cabinet deems necessary.

DBE GOAL

The Disadvantaged Business Enterprise (DBE) goal established for this contract, as listed on the front page of the proposal, is the percentage of the total value of the contract.

The contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in a least the percent of the contract as set forth above as goals for this contract.

OBLIGATION OF CONTRACTORS

Each contractor prequalified to perform work on Cabinet projects shall designate and make known to the Cabinet a liaison officer who is assigned the responsibility of effectively administering and promoting an active program for utilization of DBEs.

If a formal goal has not been designated for the contract, all contractors are encouraged to consider DBEs for subcontract work as well as for the supply of material and services needed to perform this work.

Contractors are encouraged to use the services of banks owned and controlled by minorities and women.

CERTIFICATION OF CONTRACT GOAL

Contractors shall include the following certification in bids for projects for which a DBE goal has been established. BIDS SUBMITTED WHICH DO NOT INCLUDE CERTIFICATION OF DBE PARTICIPATION WILL NOT BE ACCEPTED. These bids will not be considered for award by the Cabinet and they will be returned to the bidder.

"The bidder certifies that it has secured participation by Disadvantaged Business Enterprises ("DBE") in the amount of _____ percent of the total value of this contract and that the DBE participation is in compliance with the requirements of 49 CFR 26 and the policies of the Kentucky Transportation Cabinet pertaining to the DBE Program."

The certification statement is located in the electronic bid file. All contractors must certify their DBE participation on that page. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted.

DBE PARTICIPATION PLAN

Lowest responsive bidders must submit the *DBE Plan/ Subcontractor Request*, form TC 14-35 DBE, within 5 days of the letting. This is necessary before the Awards Committee will review and make a recommendation. **The project will not be considered for award prior to submission and approval of the apparent low bidder's DBE Plan/Subcontractor Request.**

The DBE Participation Plan shall include the following:

1. Name and address of DBE Subcontractor(s) and/or supplier(s) intended to be used in the proposed project;
2. Description of the work each is to perform including the work item, unit, quantity, unit price and total amount of the work to be performed by the individual DBE. The Proposal Line Number, Category Number, and the Project Line Number can be found in the "material listing" on the Construction Procurement website under the specific letting;
3. The dollar value of each proposed DBE subcontract and the percentage of total project contract value this represents. DBE participation may be counted as follows;
   a) If DBE suppliers and manufactures assume actual and contractual responsibility, the dollar value of materials to be furnished will be counted toward the goal as follows:
      - The entire expenditure paid to a DBE manufacturer;
      - 60 percent of expenditures to DBE suppliers that are not manufacturers provided the supplier is a regular dealer in the product involved. A regular dealer must be engaged in, as its principal business and in its own name, the sale of products to the public, maintain an inventory and own and operate distribution equipment; and
      - The amount of fees or commissions charged by the DBE firms for a bona fide service, such as professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, supplies, delivery of materials and supplies or for furnishing bonds, or insurance, providing such fees or commissions are determined to be reasonable and customary.
   b) The dollar value of services provided by DBEs such as quality control testing, equipment repair and maintenance, engineering, staking, etc.;

c) The dollar value of joint ventures. DBE credit for joint ventures will be limited to the dollar amount of the work actually performed by the DBE in the joint venture;
4. Written and signed documentation of the bidder's commitment to use a DBE contractor whose participation is being utilized to meet the DBE goal; and
5. Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment.

AFTER PROJECT AWARD AND BEFORE NOTICE TO PROCEED/WORK ORDER IS ISSUED (SEE SECTION 103.06, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

Prime Contractors awarded a federally funded project with a DBE Goal greater than zero will be required to submit DBE Subcontract Agreement Form, TC 14-36, along with the attached FHWA 1273 and Certificate of Liability Insurance for each DBE Firm submitted as part of the previously approved DBE Utilization Plan (TC 14-35). A signed quote or purchase order shall be attached when the DBE subcontractor is a material supplier or broker.

The Certificate of Liability Insurance submitted must meet the requirements outlined in Section 107.18 of the Standard Specifications for Road and Bridge Construction.

Changes to ***APPROVED*** DBE Participation Plans must be approved by the Cabinet. The Cabinet may consider extenuating circumstances including, but not limited to, changes in the nature or scope of the project, the inability or unwillingness of a DBE to perform the work in accordance with the bid, and/or other circumstances beyond the control of the prime contractor.

CONSIDERATION OF GOOD FAITH EFFORTS REQUESTS

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder must submit a Good Faith Effort Package to satisfy the Cabinet that sufficient good faith efforts were made to meet the contract goals prior to submission of the bid. Efforts to increase the goal after bid submission will not be considered in justifying the good faith effort, unless the contractor can show that the proposed DBE was solicited prior to the letting date. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted. One complete set (hard copy along with an electronic copy) of this information must be received in the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Cabinet considers in judging good faith efforts. This documentation may include written subcontractors' quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The Good Faith Effort Package shall include, but may not be limited to information showing evidence of the following:

1. Whether the bidder attended any pre-bid meetings that were scheduled by the Cabinet to inform DBEs of subcontracting opportunities;
2. Whether the bidder provided solicitations through all reasonable and available means;
3. Whether the bidder provided written notice to all DBEs listed in the DBE directory at the time of the letting who are prequalified in the areas of work that the bidder will be subcontracting;
4. Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainly whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the Disadvantaged Enterprise Business Liaison Officer (DEBLO) in the Office for Civil Rights and Small Business Development to give notification of the bidder's inability to get DBE quotes;
5. Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise perform these work items with its own forces;
6. Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract;
7. Whether the bidder negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached;
8. Whether quotations were received from interested DBE firms but were rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE goals;
9. Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be subcontracted includes potential DBE participation;
10. Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal; and
11. Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

FAILURE TO MEET GOOD FAITH REQUIREMENT

Where the apparent lowest responsive bidder fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Good Faith Committee based upon the information submitted that the apparent lowest responsive bidder failed to make sufficient reasonable efforts to meet the contract goal, the bidder will be offered the opportunity to meet in person for administrative reconsideration. The bidder will be notified of the Committee's decision within 24 hours of its decision. The bidder will have 24 hours to request reconsideration of the Committee's decision. The reconsideration meeting will be held within two days of the receipt of a request by the bidder for reconsideration.

The request for reconsideration will be heard by the Office of the Secretary. The bidder will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The bidder will receive a written decision on the reconsideration explaining the basis for the finding that the bidder did or did not meet the goal or made adequate Good Faith efforts to do so.

The result of the reconsideration process is not administratively appealable to the Cabinet or to the United States Department of Transportation.

The Cabinet reserves the right to award the contract to the next lowest responsive bidder or to rebid the contract in the event that the contract is not awarded to the low bidder as the result of a failure to meet the good faith requirement.

SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT

Failure by the prime contractor to fulfill the DBE requirements of a project under contract or to demonstrate good faith efforts to meet the goal constitutes a breach of contract. When this occurs, the Cabinet will hold the prime contractor accountable, as would be the case with all other contract provisions. Therefore, the contractor's failure to carry out the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

- Suspension of Prequalification;
- Disallow credit toward the DBE goal;
- Withholding progress payments;
- Withholding payment to the prime in an amount equal to the unmet portion of the contract goal; and/or
- Termination of the contract.

PROMPT PAYMENT

The prime contractor will be required to pay the DBE and Non-DBE Subcontractors within seven (7) working days after he or she has received payment from the Kentucky Transportation Cabinet for work performed or materials furnished.

CONTRACTOR REPORTING

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to complete and submit a ***signed and notarized*** Affidavit of Subcontractor Payment (TC 18-7) and copies of checks for any monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These documents must be completed and signed within 7 days of being paid by the Cabinet.

Payment information that needs to be reported includes date the payment is sent to the DBE, check number, Contract ID, amount of payment and the check date. Before Final Payment is made on this contract, the Prime Contractor will certify that all payments were made to the DBE subcontractor and/or DBE suppliers.

******* IMPORTANT *******

Please mail the original, signed and completed TC (18-7) Affidavit of Subcontractor Payment form and all copies of checks for payments listed above to the following address:

Office for Civil Rights and Small Business Development
6th Floor West 200 Mero Street
Frankfort, KY 40622

The prime contractor should notify the KYTC Office for Civil Rights and Small Business Development seven (7) days prior to DBE contractors commencing work on the project. The contact in this office is Mr. Tony Youssefi. Mr. Youssefi's current contact information is email address – tyousseffi@ky.gov and the telephone number is (502) 564-3601.

DEFAULT OR DECERTIFICATION OF THE DBE

If the DBE subcontractor or supplier is decertified or defaults in the performance of its work, and the overall goal cannot be credited for the uncompleted work, the prime contractor may utilize a substitute DBE or elect to fulfill the DBE goal with another DBE on a different work item. If after exerting good faith effort in accordance with the Cabinet's Good Faith Effort policies and procedures, the prime contractor is unable to replace the DBE, then the unmet portion of the goal may be waived at the discretion of the Cabinet.

PROHIBITION ON TELECOMMUNICATIONS EQUIPMENT OR SERVICES

In accordance with the FY 2019 National Defense Authorization Act (NDAA), 2 CFR 200.216, and 2 CFR 200.471, Federal agencies are prohibited, after August 13, 2020, from obligating or expending financial assistance to obtain certain telecommunications and video surveillance services and equipment from specific producers. As a result of these regulations, contractors and subcontractors are prohibited, on projects with federal funding participation, from providing telecommunication or video surveillance equipment, services, or systems produced by:

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities)
- Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities)

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – CARGO PREFERENCE ACT (CPA).

(REV 12-17-15) (1-16)

SECTION 7 is expanded by the following new Article:

102.10 **Cargo Preference Act – Use of United States-flag vessels.**

Pursuant to Title 46CFR Part 381, the Contractor agrees

- To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
- To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
- To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

ASPHALT MIXTURE

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

DGA BASE

Unless otherwise noted, the Department estimates the rate of application for DGA Base to be 115 lbs/sy per inch of depth.

DGA BASE FOR SHOULDERS

Unless otherwise noted, the Department estimates the rate of application for DGA Base for Shoulders to be 115 lbs/sy per inch of depth. The Department will not measure necessary grading and/or shaping of existing shoulders prior to placing of DGA Base, but shall be incidental to the Contract unit price per ton for DGA Base.

Accept payment at the Contract unit price per ton as full compensation for all labor, materials, equipment, and incidentals for grading and/or shaping of existing shoulders and furnishing, placing, and compacting the DGA Base.

INCIDENTAL SURFACING

The Department has included in the quantities of asphalt mixtures established in the proposal estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, curve widening, ramp gores and tapers, and road and street approaches, as applicable. Pave these areas to the limits as shown on Standard Drawing RPM-110-06 or as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, pave the crossroads to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. Surface or resurface these areas as directed by the Engineer. The Department will not measure placing and compacting for separate payment but shall be incidental to the Contract unit price for the asphalt mixtures.

OPTION B

Be advised that the Department will control and accept compaction of asphalt mixtures furnished on this project under OPTION B in accordance with Sections 402 and 403.

SPECIAL NOTE FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS

018B00023N CALLOWAY 018B00018N CALLOWAY 053B00002N HICKMAN

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 always contacted.

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 allow 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 with the standard drawings.

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 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. Maintain and Control Traffic - Lump Sum
2. Concrete Barrier Wall Type 9T – Linear Feet
3. Crash Cushions - Each
4. Portable Changeable Message Boards – Each

The quantities for barrier wall and crash cushions include initial placement only. Barrier wall will be paid per linear foot as detailed in the plans for wall placed up to the quantity specified in the plans. Any relocation or additional wall required will not be paid for directly but will be considered incidental to Maintain and Control Traffic.

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, temporary guardrail, temporary pavement striping, barrier wall delineators, guardrail delineators, cones, barrels, flaggers, etc.

SPECIAL NOTE FOR CONCRETE SEALING

018B00023N CALLOWAY 018B00018N CALLOWAY 053B00002N HICKMAN

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. Maintain & control traffic.
9. 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. Existing structural items not newly placed, patched, or repaired may be exempt from Ordinary Surface Finish. 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, excluding surfaces to be covered with a waterproofing membrane. 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. **Contract Time.** Concrete Sealing may need to be installed after contract time has elapsed in a separate mobilization and after the Engineer has declared the project otherwise complete. Liquidated damages shall not be charged provided Concrete Sealing is complete within 60 days after the last concrete pour on the structure. When the Contractor has not completed Concrete Sealing within the time frame allotted, Liquidated Damages shall be charged at 25 percent of the original contract daily charge from the expiration of the time allowed until the Contractor completes the work except the Department will not deduct liquated damages when weather limitations prohibit the Contractor from performing the work.

F. **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.

G. **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.

H. **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.

B. **Mobilization For Concrete Surf Treatment.** The Department will pay the lump sum bid for an additional mobilization when Concrete Sealing must be performed after the Engineer has deemed the project complete except for Concrete Sealing and the structure is opened to traffic.

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.

B. **Mobilization For Concrete Surf Treatment.** Payment at the contract lump sum price bid shall be full compensation for the Contractor to remobilize on the project to perform Concrete Sealing as detailed herein this special note.

SPECIAL NOTE FOR CONCRETE COATING

053B00002N HICKMAN

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

Concrete Coatings

See The Division of Material's list of approved materials for concrete coatings and Section 821.

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:

	Fed. Standard 595B No.	L*	a*	b*
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 per square feet of each area coated. 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:

Code	***Pay Item***	***Pay Unit***
26232EC	Concrete Coating	SQ FT

The Department will consider payment as full compensation for all work required as described in this note.

SPECIAL NOTE

ADDITIONAL ENVIRONMENTAL COMMITMENTS

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In addition to the 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.

1. KYTC has completed a Phase 1 archaeological survey for a site-specific area surrounding the bridge. The cleared area is illustrated on the construction plans and referred to herein and elsewhere in the bid documents as the "Environmentally Cleared Area (ECA)." Likewise, any areas that must be avoided have been labeled "Do Not Disturb."

   If the Contractor deems it necessary to use additional areas outside the ECA for any purpose, *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 KYTC Division of Environmental Analysis (DEA) and the GEC Environmental Lead Tom Springer at tspringer@qk4.com.

   The Contractor shall provide a map of the area(s) to be used, including access points, and property-owner agreements. The Environmental Team will complete initial field investigations for archaeological, historical, ecological, and other environmental clearances. If any potentially significant site or resources are found, 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 KYTC DEA and the Project Team.

   Liquidated Damages in the amount 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 federal and state permitting agencies will be paid by the Contractor, including all associated costs and burdens placed upon KYTC.

2. If 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 the Kentucky Heritage Council at (502) 892-3614, the Office of State Archaeology at (859) 257-1944, and KYTC DEA (502) 564-7250.

For guidance regarding inadvertent discovery and treatment of human remains, refer to 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 the Kentucky Heritage Council at (502) 892-3614 and KYTC DEA at (502) 564- 7250, then (2) 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.

Questions regarding this note should be directed to Danny Peake, Director, KYTC Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

SPECIAL NOTE

SEDIMENT PREVENTION AND EROSION CONTROL

018B00023N CALLOWAY 018B00018N CALLOWAY 053B00002N HICKMAN

For all Impacts Regardless of Size of 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 KYTC Standard Specifications, prior to onsite activities the Contractor shall develop a site-specific **Erosion Control Plan** including **Best Management Practices (BMPs)** to ensure continuous erosion control throughout the construction and post-construction period. The plan will identify individual Disturbed Drainage Areas (DDA) where stormwater from the construction area will be discharged off site or into waters of the Commonwealth. A Draft BMP Plan is attached to this note.

Should the Contractor fail to create an Erosion Control 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.

Proposed erosion prevention and sediment control measures are as follows:

- 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 Impacts 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, Contractor shall be responsible for obtaining coverage under Kentucky's General KDPES Permit for Stormwater Associated with Construction Activities (KYR10). Prior to initiating construction activity, the Contractor shall file **Notice of Intent (NOI)** with the Kentucky Division of Water naming the Contractor as the Facility Operator and including the KYTC Contract ID number (CID) for reference.

For grouped contracts with more than one structure, each structure will be treated independently in regard 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 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.

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 implement all temporary erosion/sediment control measures 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.

A copy of the KYR10 General Permit and eNOI application are available here:
https://eec.ky.gov/Environmental-Protection-/Water/PermitCert/KPDES/Documents/KYR10PermitPage.pdf

Questions regarding this note should be directed to Danny Peake, Director, KYTC Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250

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Highway District 1
and
_____Construction

Kentucky Pollutant Discharge Elimination System (KPDES) Permit KYR10

Best Management Practices (BMP) Plan and Groundwater Protection Plan for Highway Construction Activities

for

Project: CID ## - #####
US-51 Bridge Replacement
Bridge ID 053B00002N, Item 1-10144
Hickman County, Kentucky

May 2023

Note: ① Design ② Construction ③ Contractor

PROJECT INFORMATION

1. Owner: Kentucky Transportation Cabinet, District 1 ①
2. Resident Engineer: ②
3. Contractor Name: ②

   Address: ②

   Phone No.: ②

   Point of Contact: ②

   Agent Responsible for KPDES Requirements: ③
4. Project Control Number: ②
5. Route (Address): US-51 at MP 11.92 ①
6. Latitude / Longitude (Project Mid-Point): 36.726027, -88.999995 ①
7. County: Hickman County ①
8. Project Start Date: ②
9. Projected Completion Date: ②

A. SITE DESCRIPTION

1. **Nature of Construction Activity:** Address deficiencies of Bridge on US-51 over Brush Creek (053B00002N) from MP 11.78 to MP 12.06, a distance of 0.28 miles. Bridge (Replacement) SYP No. 01-10144.00. (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.

7. **Soil Condition:** Soils are comprised of Adler silt loam, frequently flooded and Convent-Adler silt loams, frequently flooded. Adler silt loam soils are moderately well drained and Convent-Adler silt loams are somewhat poorly drained.

8. **Discharge Water Quality Data (if any):** (2)

9. **Receiving Water:** Brush Creek

10. **TMDLs and Pollutants of Concern:** N/A (1)

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 stormwater 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.

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.

   - **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. Probable 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:

- 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 Stormwater 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 with regard to 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.

   - **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 of 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 any and 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.

- **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 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.
  - 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 contract 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, stormwater 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.

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 stormwater management with specific guidance for any non-routine maintenance.

F. INSPECTIONS

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 stock piles 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.

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 form 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 ③

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

Contractor's 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 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*)

_____ 2(k) 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*).

CONTRACTOR AND RESIDENT ENGINEER 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.

② **Resident Engineer**:

Typed or printed name[1]	Title	Signature

③ **Contractor**:

Typed or printed name[2]	Title	Signature

[1] 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.

[2] 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.

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 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.

Subcontractor:

Typed or printed name[1]	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 assigned.

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Highway District 1
and
_____Construction

Kentucky Pollutant Discharge Elimination System (KPDES) Permit KYR10

Best Management Practices (BMP) Plan and Groundwater Protection Plan for Highway Construction Activities

for

Project: CID ## - #####
KY-121 Bridge Replacement
Bridge ID 018B00018N, Item 1-10099
Calloway County, Kentucky

September 2023

Note: ① Design ② Construction ③ Contractor

PROJECT INFORMATION

1. Owner: Kentucky Transportation Cabinet, District 1 ①
2. Resident Engineer: ②
3. Contractor Name: ②

   Address: ②

   Phone No.: ②

   Point of Contact: ②

   Agent Responsible for KPDES Requirements: ③
4. Project Control Number: ②
5. Route (Address): KY-121 at MP 17.45 ①
6. Latitude / Longitude (Project Mid-Point): 36.580501, -88.252986 ①
7. County: Calloway County ①
8. Project Start Date: ②
9. Projected Completion Date: ②

A. SITE DESCRIPTION

1. **Nature of Construction Activity:** Address deficiencies of Bridge on KY-121 over Clayton Creek (018B00018N) at MP 17.45. Bridge (Replacement) SYP No. 1-10099. (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.

7. **Soil Condition:** Soils are comprised of Calloway silt loam, 2 to 6 percent slopes, Collins-Iuka complex, 0 to 2 percent slopes, with occasional flooding, and Grenada silt loam, 4 to 6 percent slopes, severely eroded. Calloway silt loams are somewhat poorly drained, Collins-Iuka complex is moderately well drained, and Grenada silt loams are moderately well drained.

8. **Discharge Water Quality Data (if any):** (2)

9. **Receiving Water:** Clayton Creek.

10. **TMDLs and Pollutants of Concern:** N/A (1)

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 stormwater 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.

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.

   - **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. Probable 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:

- 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 Stormwater 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 with regard to 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.

   - **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 of 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 any and 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.

➢ **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 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.
- 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 contract 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, stormwater 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.

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 stormwater management with specific guidance for any non-routine maintenance.

F. INSPECTIONS

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 stock piles 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.

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 form 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 ③

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

Contractor's 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 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*)

_____ 2(k) 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*).

CONTRACTOR AND RESIDENT ENGINEER 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.

② **Resident Engineer**:

Typed or printed name[1]	Title	Signature

③ **Contractor**:

Typed or printed name[2]	Title	Signature

[1] 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.

[2] 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.

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 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.

Subcontractor:

_____	_____	_____
Typed or printed name[1]	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 assigned.

TEAM KENTUCKY®
TRANSPORTATION CABINET

Highway District 1
and
_____Construction

Kentucky Pollutant Discharge Elimination System (KPDES) Permit KYR10

Best Management Practices (BMP) Plan and Groundwater Protection Plan for Highway Construction Activities

for

Project: CID ## - #####
KY-121 Bridge Replacement
Bridge ID 018B00023N, Item 1-10100
Calloway County, Kentucky

September 2023

Note: ① Design ② Construction ③ Contractor

PROJECT INFORMATION

1. Owner: Kentucky Transportation Cabinet, District 1 ①
2. Resident Engineer: ②
3. Contractor Name: ②

   Address: ②

   Phone No.: ②

   Point of Contact: ②

   Agent Responsible for KPDES Requirements: ③
4. Project Control Number: ②
5. Route (Address): KY-121 at MP 8.45 ①
6. Latitude / Longitude (Project Mid-Point): 36.548533, -88.164188 ①
7. County: Calloway County ①
8. Project Start Date: ②
9. Projected Completion Date: ②

A. SITE DESCRIPTION

1. **Nature of Construction Activity:** Address deficiencies of Bridge on KY-121 over Blood River (018B00023N) at MP 8.45. Bridge (Replacement) SYP No.1-10100. 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.

7. **Soil Condition:** Soils are comprised of Chenneby, Enville and Arkabutla soils, 0 to 2 percent slopes, frequently flooded and Rosebloom and Bibb soils, 0 to 2 percent slopes, frequently flooded. Chenneby, Enville, and Arkabutla soils are somewhat poorly drained and Rosebloom and Bibb soils are poorly drained.

8. **Discharge Water Quality Data (if any):** ②

9. **Receiving Water:** Blood River.

10. **TMDLs and Pollutants of Concern:** N/A ①

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 stormwater 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.

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.

   - **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. Probable 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:

- 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 Stormwater 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 with regard to 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.

   - **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 of 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 any and 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.
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- 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.

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➢ **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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F. INSPECTIONS

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.

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- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.

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- 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.

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

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- Water form cleaning concrete trucks and equipment.

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_____ 2(k) 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*).

CONTRACTOR AND RESIDENT ENGINEER 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.

② **Resident Engineer**:

Typed or printed name[1]	Title	Signature

③ **Contractor**:

Typed or printed name[2]	Title	Signature

[1] 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.

[2] 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.

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 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.

Subcontractor:

_____	_____	_____
Typed or printed name[1]	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 assigned.

SPECIAL NOTE FOR CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACTS

018B00018N CALLOWAY 1-10099.00

I. COMPLETION DATE.

Upon Notice to Proceed, the Contractor has the option of selecting the Begin Work date. Once selected, notify the Department in writing of the date selected at least two weeks prior to beginning work and provide a proposed project schedule. All work is to be completed by the specified contract completion date. The Contractor is allotted 180 calendar days once the bridge is closed, and traffic is on the diversion to complete all work to safely reopen the structure with no lane closures. At a minimum, prior to reopening the bridge to traffic, all strength requirements and curing for materials used shall be completed per Division 600 of the Standard Specifications. Guardrail shall be installed to the satisfaction of the Engineer prior to reopening the bridge to traffic unless prior approval is obtained from the engineer for use of temporary railing.

The Engineer will begin charging calendar days for a structure on the day the Contractor closes the structure to traffic, regardless of holidays or seasonal weather limitations.

II. LIQUIDATED DAMAGES.

Liquidated damages will be assessed to the Contractor in accordance with the Transportation Cabinet, Department of Highway's current Standard Specifications for Road and Bridge Construction, Section 108.09, when either the allotted number of calendar days or the specified completion date is exceeded.

Contrary to the Standard Specifications, liquidated damages will be assessed to the Contractor during the months of December, January, February, and March when the contract time has expired on any individual bridge. Contract time will be charged during these months. All construction must be completed in accordance with the weather limitations specified in Section 606 and/or Section 601 as applicable. No extension of Contract time will be granted due to inclement weather or temperature limitations that occur due to starting work on the Contract or a structure late in the construction season.

Maintenance of the diversion must be completed within 24 hours for items that do not adversely affect traffic. In the event of a washout, and access is no longer maintained, the contractor has 4 hours to reopen the roadway to traffic. Failure to meet either the 24-hour requirement or the 4-hour requirement will result in Liquidated Damages being charged at a rate of $750 per hour beyond the required time specified, once notified. Re-grading of the diversion will be incidental to maintain and control traffic, however additional material if deemed necessary by the Engineer will be paid as specified in the contract.

SPECIAL NOTE FOR CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACTS

018B00023N CALLOWAY 1-10100.00

I. COMPLETION DATE.

Upon Notice to Proceed, the Contractor has the option of selecting the Begin Work date. Once selected, notify the Department in writing of the date selected at least two weeks prior to beginning work and provide a proposed project schedule. All work is to be completed by the specified contract completion date. The Contractor is allotted 120 calendar days once work begins to complete all work to safely reopen the structure with no lane closures. At a minimum, prior to reopening the lane to traffic, all strength requirements and curing for materials used shall be completed per Division 600 of the Standard Specifications.

The Engineer will begin charging calendar days for a structure on the day the Contractor begins work, with the exception of placement of signs, regardless of holidays or seasonal weather limitations.

II. LIQUIDATED DAMAGES.

Liquidated damages will be assessed to the Contractor in accordance with the Transportation Cabinet, Department of Highway's current Standard Specifications for Road and Bridge Construction, Section 112.03.15A, when the lane closures are used beyond the allotted number of calendar days. Liquidated Damages will be assessed per the Standard Specification Section 108.09 when the contract time extends beyond the contract date.

Contrary to the Standard Specifications, liquidated damages will be assessed to the Contractor during the months of December, January, February and March when the contract time has expired on any individual bridge. Contract time will be charged during these months. All construction must be completed in accordance with the weather limitations specified in Section 606 and/or Section 601 as applicable. No extension of Contract time will be granted due to inclement weather or temperature limitations that occur due to starting work on the Contract or a structure late in the construction season.

SPECIAL NOTE FOR CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACTS

053B00002N HICKMAN 1-10144.00

I. COMPLETION DATE.

Upon Notice to Proceed, the Contractor has the option of selecting the Begin Work date. Once selected, notify the Department in writing of the date selected at least two weeks prior to beginning work and provide a proposed project schedule. All work is to be completed by the specified contract completion date. The Contractor is allotted 90 calendar days once the bridge is closed, and traffic is on the diversion to complete all work to safely reopen the structure with no lane closures. At a minimum, prior to reopening the bridge to traffic, all strength requirements and curing for materials used shall be completed per Division 600 of the Standard Specifications. Guardrail shall be installed to the satisfaction of the Engineer prior to reopening the bridge to traffic unless prior approval is obtained from the engineer for use of temporary railing.

The Engineer will begin charging calendar days for a structure on the day the Contractor closes the structure to traffic, regardless of holidays or seasonal weather limitations.

II. LIQUIDATED DAMAGES.

Liquidated damages will be assessed to the Contractor in accordance with the Transportation Cabinet, Department of Highway's current Standard Specifications for Road and Bridge Construction, Section 108.09, when either the allotted number of calendar days or the specified completion date is exceeded.

Contrary to the Standard Specifications, liquidated damages will be assessed to the Contractor during the months of December, January, February, and March when the contract time has expired on any individual bridge. Contract time will be charged during these months. All construction must be completed in accordance with the weather limitations specified in Section 606 and/or Section 601 as applicable. No extension of Contract time will be granted due to inclement weather or temperature limitations that occur due to starting work on the Contract or a structure late in the construction season.

Maintenance of the diversion must be completed within 24 hours for items that do not adversely affect traffic. In the event of a washout, and access is no longer maintained, the contractor has 4 hours to reopen the roadway to traffic. Failure to meet either the 24-hour requirement or the 4-hour requirement will result in Liquidated Damages being charged at a rate of $750 per hour beyond the required time specified, once notified. Re-grading of the diversion will be incidental to maintain and control traffic, however additional material if deemed necessary by the Engineer will be paid as specified in the contract.

SPECIAL NOTE

SEASONAL TREE CLEARING RESTRICTION

No clearing of trees five (5) inches or greater dbh (diameter breast height) between May 15 and July 31.

Questions regarding this note should be directed to Danny Peake, Director, KYTC Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

Special Note for Bridge Demolition, Renovation and Asbestos Abatement

If the project includes any bridge demolition or renovation, the successful bidder is required to notify Kentucky Division for Air Quality (KDAQ) via filing of form (DEP 7036) a minimum of 10 working days prior to commencement of any bridge demolition or renovation work.

Any available information regarding possible asbestos containing materials (ACM) on or within bridges to be affected by the project has been included in the bid documents. These are to be included with the Contractor's notification filed with the KDAQ. If not included in the bid documents, the Department will provide that information to the successful bidder for inclusion in the KDAQ notice as soon as possible. If there are no documents stating otherwise, the bidders should assume there are no asbestos containing materials that will in any way affect the work.

PAGE 1 OF
INITIAL SUBMITTAL DATE
REVISION DATE
NOTIFICATION # -

NOTIFICATION OF ASBESTOS ABATEMENT/DEMOLITION/RENOVATION

(Instructions for completing form on back)

File this form with Regional Office where project will be performed

Kentucky Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

OFFICE USE ONLY
ID #
LOG #

Contractor _____
Address _____
City _____ State _____ Zip _____
Phone _____ Contact Person _____
Owner _____
Address _____
City _____ State _____ Zip _____
Phone _____ Contact Person _____
Project Location _____
Address _____
City _____ State _____ Zip _____
Facility Age (yrs.) _____ Size of Facility or Affected Part (sq.ft.) _____
#Floors Affected _____ Present and Prior Use of Facility _____

TYPE OF PROJECT (CHECK ONLY ONE):

Renovation ☐ Demolition ☐ Ordered Demolition ☐ Emergency ☐ Long-term ☐

PROJECT DATES:

Start Removal _____ End Removal _____
Start Renovation/Demolition _____ End Renovation/Demolition _____

Amount of ACM to be Removed:

	Regulated ACM (RACM)	Category II nonfriable ACM (optional)	Category I nonfriable ACM (optional)
Linear Feet			
Square Feet			
Cubic Feet			

Description of planned renovation/demolition, including abatement methods & demo/reno methods. _____

Description of affected facility components _____

Asbestos detection technique _____

Amount of Cat. I & II nonfriable ACM involved but will not be removed: _____

Describe **physical characteristics** that make it nonfriable and **methods** to keep it nonfriable (optional): _____

Describe **contingency plan** should nonfriable ACM become friable or additional ACM be uncovered during renovation/ demolition: _____

Transporter _____
Address _____
City _____ State _____ Zip _____
Phone _____
Disposal Site _____
Address _____
City _____ State _____ Zip _____

I hereby certify that at least one person trained as required by 40 CFR 61.145(c)(8) will supervise the abatement work described herein. (optional for strictly non-friable work)

Submitted by: _____
Company Name: _____

INSTRUCTIONS FOR COMPLETING FORM DEP7036: NOTIFICATION OF ASBESTOS ABATEMENT/DEMOLITION/RENOVATION

Filing Deadline: This form must be completed and filed with the Kentucky Division for Air Quality at least ten (10) working days before starting any asbestos removal, demolition, or other work which will disturb asbestos-containing material (ACM) in Kentucky facilities outside Jefferson County and in schools statewide, including Jefferson County. File with appropriate Regional Office.
Renotification: If developments occur that invalidate information on a notification (e.g., changes in dates, amounts, locations), file a revised form within the time frames specified in 401 KAR 58:025. Notifications may be numbered in the top-left corner (optional). First two digits are project year; remaining digits are project number (e.g., the first project in 1999 is 99-1).
Attachments: Attachments may be included to provide additional information, propose alternative procedures, declare nonfriable removal, identify secondary transporters, etc.

Line-by-Line Instructions:
Contractor/Owner: the contractor is the asbestos remover (or, for zero-asbestos demolitions, the demolition contractor). The owner is the entity having the work done.
Project Location: The location at the address given where the work is taking place (e.g., which building/floor/room?).
Present/Prior Use: Enter the present and prior use(s) of the facility.
Type of Project: Each choice shown in this category has a specific description under 401 KAR 58:025:

Emergency renovations result from a sudden, unexpected event. If the project is an emergency renovation, attach a detailed description of the sudden, unexpected event that necessitated removal. Include the exact date and hour the event occurred and explain how the event caused an unsafe condition, or would cause equipment damage or unreasonable financial burden.

Planned renovations are renovations that do not qualify as emergency renovations.

A long-term notification is a type of planned renovation which involves a number of nonscheduled small-scale removals whose annual total exceeds the NESHAP threshold amounts and can be estimated based on past years' experience. File yearly estimate at least 10 working days before the beginning of the calendar year for which a long-term notification is being given.

Demolitions involve the wrecking or taking out of a load-supporting structural member, such as a load-bearing beam or wall. Tearing down a structure, dismantling it piecemeal, and moving it from one place to another are all considered demolitions.

Ordered demolitions must result from a demolition order issued by a government agency because the building is structurally unsound and in danger of imminent collapse. For ordered demolitions, attach to the notification a signed, dated copy of order that includes demolition deadlines and name/title/authority of the government representative issuing the order.

Project Dates: Schedules must be precise and accurate. The "start removal" date is the date the removers arrive on-site and begin physically preparing the work area for removal. "End removal" is the date the removers dismantle the work area after cleaning and clearing it. If circumstances arise that invalidate previously submitted start dates, a revised notification must be submitted showing the updated, correct start date. If the start date has been moved up, submit written renotification at least ten working days before the new start date. If the start date has been moved back, telephone the Division as soon as possible before the original date and submit written renotification no later than the original start date.
Schedules for renovation and demolition (next line after removal schedule) are handled similarly, except that renotification is required only for schedule changes involving demolitions, not renovations.
Amount of ACM: In this table, enter the amount and type (RACM , Category I, and/or Category II) of asbestos that will be removed. Although the regulation does not require you to identify the amount of nonfriable ACM that will be removed, the table provides space for nonfriable ACM to accommodate those notifiers who choose to document these removals.
Description of project: Describe the demolition or renovation work to be performed and method(s) to be used , including work practices and engineering controls to be used.
Asbestos Detection Technique: Give a general description of the asbestos survey, for example, "AHERA-style survey by accredited inspector; samples analyzed by PLM."
Amount of nonfriable ...: If all nonfriable ACM will be properly removed, enter "NA."
Contingency Plans: If Category II nonfriable ACM becomes crumbled, pulverized, or reduced to powder, or if additional RACM is discovered, describe procedures to be followed. For example, "Move demolition activity away from ACM immediately; remove the ACM using regulation-required procedures." Even "Stop work, call Division for Air Quality" is OK.

TEAM KENTUCKY®
TRANSPORTATION CABINET

ASBESTOS INSPECTION REPORT

Prepared for: Terri Combs, PE
Prime AE Group, Inc.

Prepared by: Jared Looney, EIT
AI Number 175162
License Number 74088

Structure ID: 018B00018N, Item 1-10099
KY-121 over Clayton Creek
Calloway County, Kentucky

Prepared: December 23, 2022

PROJECT DESCRIPTION

Third Rock Consultants, LLC (Third Rock) was retained to conduct a pre-demolition asbestos survey for the above-referenced project. Based on the Bridge Inspection Report from Kentucky Transportation Cabinet, the bridge appears to have been constructed in 1932.

INSPECTION METHODOLOGY

An inspection was conducted on December 13, 2022 in accordance with applicable National Emission Standards for Hazardous Air Pollutants (NESHAP) standards to determine if asbestos-suspect materials are present, including Category I non-friable, Category II non-friable, and friable materials. Upon inspection, the following asbestos-suspect material was observed and sampled:

- Black expansion joint material in vertical joints of abutments and girders above piers, approximately 230 square feet of material
- Black expansion joint material in horizontal joint of abutments and pier caps, approximately 260 square feet of material
- Grey, poured expansion joint material in road surface and curb joints, approximately 80 square feet of material

One (1) sample was taken at a representative location from each of the three (3) asbestos-suspect materials that were observed and delivered under chain-of-custody as Samples 1-10099-1, 1-10099-2, and 1-10099-3, respectively. The COC and photo documentation of each sampling location are attached.

FINDINGS

Laboratory analysis revealed all samples contained less than 1% asbestos. Results are attached.

Note that the Kentucky Division for Air Quality (KDAQ) must be notified at least 10 working days prior to any demolition activities, even though no asbestos-containing material was identified. To notify KDAQ, Form ID 70 must be completed through the Kentucky Energy and Environment Cabinet's eForms website.

LIMITATIONS

The findings and conclusions of this report are based solely on the conditions present at the structure during the inspection date. Although great care has been taken by Third Rock to conduct a thorough, accurate inspection and report, Third Rock disclaims any and all liability for any errors, omissions, or inaccuracies in the information provided, whether due to inadvertence or otherwise, and for any consequence arising therefrom. The information provided hereunder neither claims to be nor constitutes legal or medical advice. Third Rock shall not be liable for any special, consequential, or exemplary damages resulting, in whole or in part, from the customer's use of the information. Liability on the part of Third Rock is limited to the monetary value paid for this report.

REFERENCES

Google Earth. [Accessed December 15, 2022]. https://www.google.com/earth.

Asbestos Inspection Photo Log
Bridge ID 018B00018N, Item No. 1-10099
KY-121, Calloway County, Kentucky

1 - IMG_2723 Bridge Surface - Facing E.JPG

2 -IMG_2719 Bridge Below Deck - Facing W.JPG

Asbestos Inspection Photo Log
Bridge ID 018B00018N, Item No. 1-10099
KY-121, Calloway County, Kentucky

3 - IMG_2718 Bridge Abutment - Facing E.JPG

4 - IMG_2720 Girder Joint - Facing S - Sample 1-10099-1.JPG

Asbestos Inspection Photo Log
Bridge ID 018B00018N, Item No. 1-10099
KY-121, Calloway County, Kentucky

5 - IMG_2721 Joint at Pier Cap - Facing W - Sample 1-10099-2.JPG

6 - IMG_2722 Joint in Curb - Facing S - Sample 1-10099-3.JPG

MICROBAC 3323 Gilmore Industrial Blvd., Louisville, KY 40213 | 502.962.6400 p | 502.962.6411 f

CHAIN OF CUSTODY RECORD

Number
Instructions on back

TO BE COMPLETED BY MICROBAC

Temperature Upon Receipt (°C): 19.8
Therm ID
Holding Time: LI

Samples Received on Ice? ☐ Yes ☐ No ☐ N/A
Custody Seals Intact? ☐ Yes ☐ No ☐ N/A

Lab Report Address
Client Name: Third Rock Consultants, LLC
Address: 2526 Regency Road, STE 180
City, State, Zip: Lexington, KY 40503
Contact: Jared Looney
Telephone No.: (859) 977-2000

Invoice Address
Client Name: Third Rock Consultants, LLC
Address: 2526 Regency Road, STE 180
City, State, Zip: Lexington, KY 40503
Contact: Becky Weatherford
Telephone No.: (859) 977-2000

Turnaround Time
☒ Routine (5 to 7 business days)
☐ RUSH* (notify lab)
(needed by)

Report Type
☒ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Send Report via: ☐ Mail ☐ Fax ☒ e-mail (address) jlooney@thirdrockconsultants.com

Send Invoice via: ☐ Mail ☐ Fax ☒ e-mail (address) bweatherford@thirdrockconsultants.com

Project: KY22-034 Location: Various PO No.:

Compliance Monitoring? ☐ Yes ☐ No
☐ Agency/Program

Sampled by (PRINT): Jared Looney Sampler Signature: Jared Looney Sampler Phone No.: (859) 977-2000

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

REQUESTED ANALYSIS

Lab ID	Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	Asbestos PLM	Lead Paint	Additional Notes
	1-10100-1	12/13/22	1:00P	1	S	G	—	X		
	1-10100-2	12/13/22	1:00P	1	S	G	—	X		
	1-10100-3	12/13/22	1:00P	1	S	G	—	X		
	1-10099-1	12/13/22	2:00P	1	S	G	—	X		
	1-10099-2	12/13/22	2:00P	1	S	G	—	X		
	1-10099-3	12/13/22	2:00P	1	S	G	—	X		
	1-10101-1	12/13/22	3:00P	1	S	G	—	X		
	1-10101-2	12/13/22	3:00P	1	S	G	—	X		
	1-10101-3	12/13/22	3:00P	1	S	G	—	X		
	1-10101-4	12/13/22	3:00P	1	S	G	—	X		

Possible Hazard Identification ☒ Hazardous ☐ Non-Hazardous ☐ Radioactive

Sample Disposition ☒ Dispose as appropriate ☐ Return ☐ Archive

Comments

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
[signature]	12/14/22 902	Crystal Williams	12/14/22 902
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time

rev. 7/18/18

Page of

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

Project Description

SOIL ANALYSIS

For:

Gerry Fister

Third Rock Consultants

2526 Regency Road, Suite 180; SUITE 104

Lexington, KY 40503

Customer Relationship Manager
David Lester

Friday, December 23, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Louisville. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

MICROBAC®

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID: 1-10100-3
Sample Matrix: Solid
Lab Sample ID: L2L0722-03
Collected By: CUSTOMER
Collection Date: 12/13/2022 13:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1300		MCS
Cellulose	20		1	1	%		12/13/22 1300		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1300		MCS
Mineral Wool	<1		1	1	%		12/13/22 1300		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/13/22 1300		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1300		MCS

Client Sample ID: 1-10099-1
Sample Matrix: Solid
Lab Sample ID: L2L0722-04
Collected By: CUSTOMER
Collection Date: 12/13/2022 14:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1400		MCS
Cellulose	15		1	1	%		12/13/22 1400		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1400		MCS
Mineral Wool	<1		1	1	%		12/13/22 1400		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/13/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1400		MCS

MICROBAC®

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	1-10099-2		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-05	**Collection Date:**	12/13/2022 14:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1400		MCS
Cellulose	20		1	1	%		12/13/22 1400		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1400		MCS
Mineral Wool	<1		1	1	%		12/13/22 1400		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/13/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1400		MCS

Client Sample ID:	1-10099-3		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-06	**Collection Date:**	12/13/2022 14:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1400		MCS
Cellulose	20		1	1	%		12/13/22 1400		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1400		MCS
Mineral Wool	<1		1	1	%		12/13/22 1400		MCS
Other Non-Asbestos Fibers	98		1	1	%		12/13/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1400		MCS

SPECIAL NOTE

BRIDGE DEMOLITION OR RENOVATION AND ASBESTOS

018B00023N CALLOWAY 1-10100.00

If the project includes bridge demolition or renovation, the Contractor is required to notify Kentucky Division for Air Quality (KDAQ) via filing of form DEP 7036 (attached) a minimum of 10 days prior to commencement of any bridge demolition or renovation work.

KYTC has completed a pre-demolition asbestos survey of the bridge, the results of which are attached to this note and should be included with the Contractor's notification filed with the KDAQ.

Survey results revealed no regulated asbestos containing material (RACM) present, therefore no asbestos-specific work practices are required.

Questions regarding this note should be directed to Danny Peake, Director, KYTC Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

PAGE 1 OF
INITIAL SUBMITTAL DATE
REVISION DATE
NOTIFICATION # -

NOTIFICATION OF ASBESTOS ABATEMENT/DEMOLITION/RENOVATION

(Instructions for completing form on back)

File this form with Regional Office where project will be performed

Kentucky Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

OFFICE USE ONLY
ID #
LOG #

Contractor _____
Address _____
City _____ State _____ Zip _____
Phone _____ Contact Person _____
Owner _____
Address _____
City _____ State _____ Zip _____
Phone _____ Contact Person _____
Project Location _____
Address _____
City _____ State _____ Zip _____
Facility Age (yrs.) _____ Size of Facility or Affected Part (sq.ft.) _____
#Floors Affected _____ Present and Prior Use of Facility _____

TYPE OF PROJECT (CHECK ONLY ONE):

Renovation ☐ Demolition ☐ Ordered Demolition ☐ Emergency ☐ Long-term ☐

PROJECT DATES:

Start Removal _____ End Removal _____
Start Renovation/Demolition _____ End Renovation/Demolition _____

Amount of ACM to be Removed:

	Regulated ACM (RACM)	Category II nonfriable ACM (optional)	Category I nonfriable ACM (optional)
Linear Feet			
Square Feet			
Cubic Feet			

Description of planned renovation/demolition, including abatement methods & demo/reno methods. _____

Description of affected facility components _____

Asbestos detection technique _____

Amount of Cat. I & II nonfriable ACM involved but will not be removed: _____

Describe **physical characteristics** that make it nonfriable and **methods** to keep it nonfriable (optional): _____

Describe **contingency plan** should nonfriable ACM become friable or additional ACM be uncovered during renovation/ demolition: _____

Transporter _____
Address _____
City _____ State _____ Zip _____
Phone _____
Disposal Site _____
Address _____
City _____ State _____ Zip _____

I hereby certify that at least one person trained as required by 40 CFR 61.145(c)(8) will supervise the abatement work described herein. (optional for strictly non-friable work)

Submitted by: _____
Company Name: _____

INSTRUCTIONS FOR COMPLETING FORM DEP7036: NOTIFICATION OF ASBESTOS ABATEMENT/DEMOLITION/RENOVATION

Filing Deadline: This form must be completed and filed with the Kentucky Division for Air Quality at least ten (10) working days before starting any asbestos removal, demolition, or other work which will disturb asbestos-containing material (ACM) in Kentucky facilities outside Jefferson County and in schools statewide, including Jefferson County. File with appropriate Regional Office.
Renotification: If developments occur that invalidate information on a notification (e.g., changes in dates, amounts, locations), file a revised form within the time frames specified in 401 KAR 58:025. Notifications may be numbered in the top-left corner (optional). First two digits are project year; remaining digits are project number (e.g., the first project in 1999 is 99-1).
Attachments: Attachments may be included to provide additional information, propose alternative procedures, declare nonfriable removal, identify secondary transporters, etc.

Line-by-Line Instructions:
Contractor/Owner: the contractor is the asbestos remover (or, for zero-asbestos demolitions, the demolition contractor). The owner is the entity having the work done.
Project Location: The location at the address given where the work is taking place (e.g., which building/floor/room?).
Present/Prior Use: Enter the present and prior use(s) of the facility.
Type of Project: Each choice shown in this category has a specific description under 401 KAR 58:025:

Emergency renovations result from a sudden, unexpected event. If the project is an emergency renovation, attach a detailed description of the sudden, unexpected event that necessitated removal. Include the exact date and hour the event occurred and explain how the event caused an unsafe condition, or would cause equipment damage or unreasonable financial burden.

Planned renovations are renovations that do not qualify as emergency renovations.

A long-term notification is a type of planned renovation which involves a number of nonscheduled small-scale removals whose annual total exceeds the NESHAP threshold amounts and can be estimated based on past years' experience. File yearly estimate at least 10 working days before the beginning of the calendar year for which a long-term notification is being given.

Demolitions involve the wrecking or taking out of a load-supporting structural member, such as a load-bearing beam or wall. Tearing down a structure, dismantling it piecemeal, and moving it from one place to another are all considered demolitions.

Ordered demolitions must result from a demolition order issued by a government agency because the building is structurally unsound and in danger of imminent collapse. For ordered demolitions, attach to the notification a signed, dated copy of order that includes demolition deadlines and name/title/authority of the government representative issuing the order.

Project Dates: Schedules must be precise and accurate. The "start removal" date is the date the removers arrive on-site and begin physically preparing the work area for removal. "End removal" is the date the removers dismantle the work area after cleaning and clearing it. If circumstances arise that invalidate previously submitted start dates, a revised notification must be submitted showing the updated, correct start date. If the start date has been moved up, submit written renotification at least ten working days before the new start date. If the start date has been moved back, telephone the Division as soon as possible before the original date and submit written renotification no later than the original start date.
Schedules for renovation and demolition (next line after removal schedule) are handled similarly, except that renotification is required only for schedule changes involving demolitions, not renovations.
Amount of ACM: In this table, enter the amount and type (RACM , Category I, and/or Category II) of asbestos that will be removed. Although the regulation does not require you to identify the amount of nonfriable ACM that will be removed, the table provides space for nonfriable ACM to accommodate those notifiers who choose to document these removals.
Description of project: Describe the demolition or renovation work to be performed and method(s) to be used , including work practices and engineering controls to be used.
Asbestos Detection Technique: Give a general description of the asbestos survey, for example, "AHERA-style survey by accredited inspector; samples analyzed by PLM."
Amount of nonfriable ...: If all nonfriable ACM will be properly removed, enter "NA."
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TEAM KENTUCKY®
TRANSPORTATION CABINET

ASBESTOS INSPECTION REPORT

Prepared for: Aaron Detjen, PE, RSPI
WSP USA, Inc.

Prepared by: Jared Looney, EIT
AI Number 175162
License Number 74088

Structure ID: 018B00023N, Item 1-10100
KY-121 over Blood River
Calloway County, Kentucky

Prepared: December 23, 2022

PROJECT DESCRIPTION

Third Rock Consultants, LLC (Third Rock) was retained to conduct a pre-demolition asbestos survey for the above-referenced project. Based on the Bridge Inspection Report from Kentucky Transportation Cabinet, the bridge appears to have been constructed in 1945.

INSPECTION METHODOLOGY

An inspection was conducted on December 13, 2022 in accordance with applicable National Emission Standards for Hazardous Air Pollutants (NESHAP) standards to determine if asbestos-suspect materials are present, including Category I non-friable, Category II non-friable, and friable materials. Upon inspection, the following asbestos-suspect material was observed and sampled:

- Black expansion joint material in joints of abutments, approximately 95 square feet of material
- Black expansion joint material in horizontal joints at pier caps, approximately 630 square feet of material
- Black, poured expansion joint material in vertical joints of curb and road surface, extending down through the deck, approximately 630 square feet of material

One (1) sample was taken at a representative location from each of the three (3) asbestos-suspect materials that were observed and delivered under chain-of-custody (COC) as 1-10100-1, 1-10100-2, and 1-10100-3, respectively. The COC and photo documentation of each sampling location are attached.

FINDINGS

Laboratory analysis revealed all samples contained less than 1% asbestos. Results are attached.

Note that the Kentucky Division for Air Quality (KDAQ) must be notified at least 10 working days prior to any demolition activities, even though no asbestos-containing material was identified. To notify KDAQ, Form ID 70 must be completed through the Kentucky Energy and Environment Cabinet's eForms website.

LIMITATIONS

The findings and conclusions of this report are based solely on the conditions present at the structure during the inspection date. Although great care has been taken by Third Rock to conduct a thorough, accurate inspection and report, Third Rock disclaims any and all liability for any errors, omissions, or inaccuracies in the information provided, whether due to inadvertence or otherwise, and for any consequence arising therefrom. The information provided hereunder neither claims to be nor constitutes legal or medical advice. Third Rock shall not be liable for any special, consequential, or exemplary damages resulting, in whole or in part, from the customer's use of the information. Liability on the part of Third Rock is limited to the monetary value paid for this report.

REFERENCES

Google Earth. [Accessed December 15, 2022]. https://www.google.com/earth.

Asbestos Inspection Photo Log
Bridge ID 018B00023N, Item No. 1-10100
KY-121, Calloway County, Kentucky

1 - IMG_2711 Bridge Surface - Facing W.JPG

2 - IMG_2712 Bridge Below Deck - Facing W.JPG

Asbestos Inspection Photo Log
Bridge ID 018B00023N, Item No. 1-10100
KY-121, Calloway County, Kentucky

3 -IMG_2713 Bridge Abutment - Facing E.JPG

4 - IMG_2714 Abutment Joint - Facing E - Sample 1-10100-1.JPG

Asbestos Inspection Photo Log
Bridge ID 018B00023N, Item No. 1-10100
KY-121, Calloway County, Kentucky

5 - IMG_2715 Joint at Pier Cap - Facing W - Sample 1-10100-2.JPG

6 - IMG_2716 Deck and Curb Joint - Facing S - Sample 1-10100-3.JPG

MICROBAC 3323 Gilmore Industrial Blvd., Louisville, KY 40213 | 502.962.6400 p | 502.962.6411 f

CHAIN OF CUSTODY RECORD

Number
Instructions on back

TO BE COMPLETED BY MICROBAC

Temperature Upon Receipt (°C): 19.8
Therm ID: L11
Holding Time
Samples Received on Ice? ☐ Yes ☐ No ☐ N/A
Custody Seals Intact? ☐ Yes ☐ No ☐ N/A

Lab Report Address
Client Name: Third Rock Consultants, LLC
Address: 2526 Regency Road, STE 180
City, State, Zip: Lexington, KY 40503
Contact: Jared Looney
Telephone No.: (859) 977-2000

Invoice Address
Client Name: Third Rock Consultants, LLC
Address: 2526 Regency Road, STE 180
City, State, Zip: Lexington, KY 40503
Contact: Becky Weatherford
Telephone No.: (859) 977-2000

Turnaround Time
☒ Routine (5 to 7 business days)
☐ RUSH* (notify lab)
(needed by)

Report Type
☒ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Send Report via: ☐ Mail ☐ Fax ☒ e-mail (address) jlooney@thirdrockconsultants.com
Send Invoice via: ☐ Mail ☐ Fax ☒ e-mail (address) bweatherford@thirdrockconsultants.com

Project: KY22-034 Location: Various PO No.:
Compliance Monitoring? ☐ Yes ☐ No ☐ Agency/Program

Sampled by (PRINT): Jared Looney Sampler Signature: Jared Looney Sampler Phone No.: (859) 977-2000

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)
** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

REQUESTED ANALYSIS

Lab ID	Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	Asbestos PLM	Lead Paint	Additional Notes
	1-10100-1	12/13/22	1:00P	1	S	G	—	X		
	1-10100-2	12/13/22	1:00P	1	S	G	—	X		
	1-10100-3	12/13/22	1:00P	1	S	G	—	X		
	1-10099-1	12/13/22	2:00P	1	S	G	—	X		
	1-10099-2	12/13/22	2:00P	1	S	G	—	X		
	1-10099-3	12/13/22	2:00P	1	S	G	—	X		
	1-10101-1	12/13/22	3:00P	1	S	G	—	X		
	1-10101-2	12/13/22	3:00P	1	S	G	—	X		
	1-10101-3	12/13/22	3:00P	1	S	G	—	X		
	1-10101-4	12/13/22	3:00P	1	S	G	—	X		

Possible Hazard Identification ☒ Hazardous ☐ Non-Hazardous ☐ Radioactive
Sample Disposition ☒ Dispose as appropriate ☐ Return ☐ Archive

Comments

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
[signature]	12/14/22 902	Crystal Williams	12/14/22 902
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time

rev. 7/18/18

Page of

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

Project Description

SOIL ANALYSIS

For:

Gerry Fister

Third Rock Consultants

2526 Regency Road, Suite 180; SUITE 104

Lexington, KY 40503

Customer Relationship Manager
David Lester

Friday, December 23, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Louisville. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

MICROBAC®

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

Analytical Testing Parameters

Client Sample ID: 1-10100-1
Sample Matrix: Solid
Lab Sample ID: L2L0722-01
Collected By: CUSTOMER
Collection Date: 12/13/2022 13:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1300		MCS
Cellulose	15		1	1	%		12/13/22 1300		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1300		MCS
Mineral Wool	<1		1	1	%		12/13/22 1300		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/13/22 1300		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1300		MCS

Client Sample ID: 1-10100-2
Sample Matrix: Solid
Lab Sample ID: L2L0722-02
Collected By: CUSTOMER
Collection Date: 12/13/2022 13:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1300		MCS
Cellulose	20		1	1	%		12/13/22 1300		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1300		MCS
Mineral Wool	<1		1	1	%		12/13/22 1300		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/13/22 1300		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1300		MCS

MICROBAC®

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID: 1-10100-3
Sample Matrix: Solid
Lab Sample ID: L2L0722-03
Collected By: CUSTOMER
Collection Date: 12/13/2022 13:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1300		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1300		MCS
Cellulose	20		1	1	%		12/13/22 1300		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1300		MCS
Mineral Wool	<1		1	1	%		12/13/22 1300		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/13/22 1300		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1300		MCS

Client Sample ID: 1-10099-1
Sample Matrix: Solid
Lab Sample ID: L2L0722-04
Collected By: CUSTOMER
Collection Date: 12/13/2022 14:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1400		MCS
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Other Non-Asbestos Fibers	85		1	1	%		12/13/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1400		MCS

SPECIAL NOTE

BRIDGE DEMOLITION OR RENOVATION AND ASBESTOS

053B00002N HICKMAN 1-10144

If the project includes bridge demolition or renovation, the Contractor is required to notify Kentucky Division for Air Quality (KDAQ) via filing of form DEP 7036 (attached) a minimum of 10 days prior to commencement of any bridge demolition or renovation work.

KYTC has completed a pre-demolition asbestos survey of the bridge, the results of which are attached to this note and should be included with the Contractor's notification filed with the KDAQ.

Survey results revealed no regulated asbestos containing material (RACM) present, therefore no asbestos-specific work practices are required.

Questions regarding this note should be directed to Danny Peake, Director, KYTC Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

PAGE 1 OF
INITIAL SUBMITTAL DATE
REVISION DATE
NOTIFICATION # -

NOTIFICATION OF ASBESTOS ABATEMENT/DEMOLITION/RENOVATION

(Instructions for completing form on back)

File this form with Regional Office where project will be performed

Kentucky Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

OFFICE USE ONLY
ID #
LOG #

Contractor _____
Address _____
City _____ State _____ Zip _____
Phone _____ Contact Person _____
Owner _____
Address _____
City _____ State _____ Zip _____
Phone _____ Contact Person _____
Project Location _____
Address _____
City _____ State _____ Zip _____
Facility Age (yrs.) _____ Size of Facility or Affected Part (sq.ft.) _____
#Floors Affected _____ Present and Prior Use of Facility _____

TYPE OF PROJECT (CHECK ONLY ONE):

Renovation ☐ Demolition ☐ Ordered Demolition ☐ Emergency ☐ Long-term ☐

PROJECT DATES:

Start Removal _____ End Removal _____
Start Renovation/Demolition _____ End Renovation/Demolition _____

Amount of ACM to be Removed:

	Regulated ACM (RACM)	Category II nonfriable ACM (optional)	Category I nonfriable ACM (optional)
Linear Feet			
Square Feet			
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Description of planned renovation/demolition, including abatement methods & demo/reno methods. _____

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Transporter _____
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Phone _____
Disposal Site _____
Address _____
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I hereby certify that at least one person trained as required by 40 CFR 61.145(c)(8) will supervise the abatement work described herein. (optional for strictly non-friable work)

Submitted by: _____
Company Name: _____

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TEAM KENTUCKY®
TRANSPORTATION CABINET

ASBESTOS INSPECTION REPORT

Prepared for: Mike McGregor, PE
Bacon Farmer Workman Engineering & Testing, Inc.

Prepared by: Jared Looney, EIT
AI Number 175162
License Number 74088

Structure ID: 053B00002N, Item 1-10144
US-51 over Brush Creek
Hickman County, Kentucky

Prepared: January 5, 2023

PROJECT DESCRIPTION

Third Rock Consultants, LLC (Third Rock) was retained to conduct a pre-demolition asbestos survey for the above-referenced project. Based on the Bridge Inspection Report from Kentucky Transportation Cabinet, the bridge appears to have been constructed in 1926.

INSPECTION METHODOLOGY

An inspection was conducted on December 19, 2022 in accordance with applicable National Emission Standards for Hazardous Air Pollutants (NESHAP) standards to determine if asbestos-suspect materials are present, including Category I non-friable, Category II non-friable, and friable materials. Upon inspection, asbestos-suspect material was observed in the horizontal and vertical abutment joints. The expansion joint material was black in color with approximately 130 square feet of material present.

One (1) sample was taken at a representative location from the asbestos-suspect material and delivered under chain-of-custody (COC) as Sample 1-10144-1. The COC and photo documentation of the sampling location are attached.

FINDINGS

Laboratory analysis revealed that Sample 1-10144-1 contained less than 1% asbestos. Results are attached.

Note that the Kentucky Division for Air Quality (KDAQ) must be notified at least 10 working days prior to any demolition activities, even though no asbestos-containing material was identified. To notify KDAQ, Form ID 70 (attached) must be completed through the Kentucky Energy and Environment Cabinet's eForms website.

LIMITATIONS

The findings and conclusions of this report are based solely on the conditions present at the structure during the inspection date. Although great care has been taken by Third Rock to conduct a thorough, accurate inspection and report, Third Rock disclaims any and all liability for any errors, omissions, or inaccuracies in the information provided, whether due to inadvertence or otherwise, and for any consequence arising therefrom. The information provided hereunder neither claims to be nor constitutes legal or medical advice. Third Rock shall not be liable for any special, consequential, or exemplary damages resulting, in whole or in part, from the customer's use of the information. Liability on the part of Third Rock is limited to the monetary value paid for this report.

REFERENCES

Google Earth. [Accessed January 5, 2023]. https://www.google.com/earth.

Asbestos Inspection Photo Log
Bridge ID 053B00002N, Item No. 1-10144
US-51, Hickman County, Kentucky

1 - IMG_2753 Bridge Surface - Facing S.JPG

2 - IMG_2754 Bridge Below Deck - Facing S.JPG

Asbestos Inspection Photo Log
Bridge ID 053B00002N, Item No. 1-10144
US-51, Hickman County, Kentucky

3 - IMG_2755 Abutment Joint - Facing S - Sample 1-10144-1.JPG

MICROBAC 3323 Gilmore Industrial Blvd., Louisville, KY 40213 | 502.962.6400 p | 502.962.6411 f

CHAIN OF CUSTODY RECORD

Number
Instructions on back

L2L1039 David Lester

Lab Report Address
Client Name: Third Rock Consultants, LLC
Address: 2526 Regency Road, STE 180
City, State, Zip: Lexington, KY 40503
Contact: Jared Looney
Telephone No.: (859) 977-2000

Invoice Address
Client Name: Third Rock Consultants, LLC
Address: 2526 Regency Road, STE 180
City, State, Zip: Lexington, KY 40503
Contact: Becky Weatherford
Telephone No.: (859) 977-2000

Turnaround Time
☒ Routine (5 to 7 business days)
☐ RUSH* (notify lab)
(needed by)

Report Type
☒ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

TO BE COMPLETED BY MICROBAC
Temperature Upon Receipt (°C) 18.3
Therm ID
Holding Time L11
Samples Received on Ice? ☐ Yes ☐ No ☐ N/A
Custody Seals Intact? ☐ Yes ☐ No ☐ N/A

Send Report via: ☐ Mail ☐ Fax ☒ e-mail (address) jlooney@thirdrockconsultants.com
Send Invoice via: ☐ Mail ☐ Fax ☒ e-mail (address) bweatherford@thirdrockconsultants.com

Project: KY22-034 Location: Various PO No.:
Compliance Monitoring? ☐ Yes ☐ No ☐ Agency/Program

Sampled by (PRINT): Jared Looney Sampler Signature: Jared Looney Sampler Phone No.: (859) 977-2000

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)
** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

REQUESTED ANALYSIS

Lab ID	Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	Asbestos PLM	Lead Paint	Additional Notes
	1-10105-1	12/19/22	11:00	1	S	G	—	X		
	1-10104-1	12/19/22	11:30	1	S	G	—	X		
	1-10144-1	12/19/22	12:00	1	S	G	—	X		
	1-10116-1	12/19/22	1:00p	1	S	G	—	X		
	1-10116-2	12/19/22	1:00p	1	S	G	—	X		
	1-10116-3	12/19/22	1:00p	1	S	G	—	X		
	1-10115-1	12/19/22	2:00p	1	S	G	—	X		
	1-10115-2	12/19/22	2:00p	1	S	G	—	X		
	1-10146-1	12/19/22	2:30p	1	S	G	—	X		

Possible Hazard Identification ☒ Hazardous ☐ Non-Hazardous ☐ Radioactive
Sample Disposition ☒ Dispose as appropriate ☐ Return ☐ Archive

Comments

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Jared Looney	12/21/22 818	Crystal Williams	12/21/22 818
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time

rev. 7/18/18

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Holding Time
Samples Received on Ice? ☐ Yes ☐ No ☐ N/A
Custody Seals Intact? ☐ Yes ☐ No ☐ N/A

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City, State, Zip: Lexington, KY 40503
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Turnaround Time
☒ Routine (5 to 7 business days)
☐ RUSH* (notify lab)
(needed by)

Report Type
☒ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Send Report via: ☐ Mail ☐ Fax ☒ e-mail (address) jlooney@thirdrockconsultants.com
Send Invoice via: ☐ Mail ☐ Fax ☒ e-mail (address) bweatherford@thirdrockconsultants.com

Project: KY22-034 Location: Various PO No.:
Compliance Monitoring? ☐ Yes ☐ No ☐ Agency/Program

Sampled by (PRINT): Jared Looney Sampler Signature: Jared Looney Sampler Phone No.: (859) 977-2000

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REQUESTED ANALYSIS

Lab ID	Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	Asbestos PLM	Lead Paint	Additional Notes
	1-10128-1	12/19/22	3:00p	1	S	G	—	X		
	1-10128-2	12/19/22	3:00p	1	S	G	—	X		
	2-10061-1	12/19/22	4:00p	1	S	G	—	X		
	2-10061-2	12/19/22	4:00p	1	S	G	—	X		
	2-10061-3	12/19/22	4:00p	1	S	G	—	X		
	2-10061-4	12/19/22	4:00p	1	S	G	—	X		
	2-10061-5	12/19/22	4:00p	1	S	G	—		X	

Possible Hazard Identification ☒ Hazardous ☐ Non-Hazardous ☐ Radioactive
Comments

Sample Disposition ☒ Dispose as appropriate ☐ Return ☐ Archive

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
[signature]	12/21/22 818	Crystal Williams	12/21/22 818
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time

rev. 7/18/18

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CHAIN OF CUSTODY RECORD

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L2L1039 David Lester

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City, State, Zip: Lexington, KY 40503
Contact: Becky Weatherford
Telephone No.: (859) 977-2000

Turnaround Time
☒ Routine (5 to 7 business days)
☐ RUSH* (notify lab)
(needed by)

TO BE COMPLETED BY MICROBAC
Temperature Upon Receipt (°C) 18.3
Therm ID
Holding Time L11
Samples Received on Ice? ☐ Yes ☐ No ☐ N/A
Custody Seals Intact? ☐ Yes ☐ No ☐ N/A

Report Type
☒ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Send Report via: ☐ Mail ☐ Fax ☒ e-mail (address) jlooney@thirdrockconsultants.com
Send Invoice via: ☐ Mail ☐ Fax ☒ e-mail (address) bweatherford@thirdrockconsultants.com

Project: KY22-034 Location: Various PO No.:
Compliance Monitoring? ☐ Yes ☐ No ☐ Agency/Program

Sampled by (PRINT): Jared Looney Sampler Signature: Jared Looney Sampler Phone No.: (859) 977-2000

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	1-10104-1	12/19/22	11:30	1	S	G	—	X		
	1-10144-1	12/19/22	12:00	1	S	G	—	X		
	1-10116-1	12/19/22	1:00p	1	S	G	—	X		
	1-10116-2	12/19/22	1:00p	1	S	G	—	X		
	1-10116-3	12/19/22	1:00p	1	S	G	—	X		
	1-10115-1	12/19/22	2:00p	1	S	G	—	X		
	1-10115-2	12/19/22	2:00p	1	S	G	—	X		
	1-10146-1	12/19/22	2:30p	1	S	G	—	X		

Possible Hazard Identification ☒ Hazardous ☐ Non-Hazardous ☐ Radioactive
Sample Disposition ☒ Dispose as appropriate ☐ Return ☐ Archive
Comments

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
[signature]	12/21/22 818	Crystal Williams	12/21/22 818
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time

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Therm ID L11
Holding Time
Samples Received on Ice? ☐ Yes ☐ No ☐ N/A
Custody Seals Intact? ☐ Yes ☐ No ☐ N/A

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Project: KY22-034 Location: Various PO No.:
Compliance Monitoring? ☐ Yes ☐ No ☐ Agency/Program

Sampled by (PRINT): Jared Looney Sampler Signature: Jared Looney Sampler Phone No.: (859) 977-2000

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Lab ID	Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	Asbestos PLM	Lead Paint	Additional Notes
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	1-10128-2	12/19/22	3:00p	1	S	G	—	X		
	2-10061-1	12/19/22	4:00p	1	S	G	—	X		
	2-10061-2	12/19/22	4:00p	1	S	G	—	X		
	2-10061-3	12/19/22	4:00p	1	S	G	—	X		
	2-10061-4	12/19/22	4:00p	1	S	G	—	X		
	2-10061-5	12/19/22	4:00p	1	S	G	—		X	

Possible Hazard Identification ☒ Hazardous ☐ Non-Hazardous ☐ Radioactive
Comments

Sample Disposition ☒ Dispose as appropriate ☐ Return ☐ Archive

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
[signature]	12/21/22 818	Crystal Williams	12/21/22 818
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time

rev. 7/18/18

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1039

Project Description

SOIL ANALYSIS

For:

Gerry Fister

Third Rock Consultants

2526 Regency Road, Suite 180; SUITE 104

Lexington, KY 40503

Customer Relationship Manager
David Lester

Thursday, January 5, 2023

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Louisville. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

MICROBAC®

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1039

Third Rock Consultants

Gerry Fister
2526 Regency Road, Suite 180; SUITE 104
Lexington, KY 40503

Project Name: SOIL ANALYSIS

Project / PO Number: N/A
Received: 12/21/2022
Reported: 01/05/2023

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
1-10105-1	L2L1039-01	Solid	Grab		12/19/22 11:00	12/21/22 08:18
1-10104-1	L2L1039-02	Solid	Grab		12/19/22 11:30	12/21/22 08:18
1-10144-1	L2L1039-03	Solid	Grab		12/19/22 12:00	12/21/22 08:18
1-10116-1	L2L1039-04	Solid	Grab		12/19/22 13:00	12/21/22 08:18
1-10116-2	L2L1039-05	Solid	Grab		12/19/22 13:00	12/21/22 08:18
1-10116-3	L2L1039-06	Solid	Grab		12/19/22 13:00	12/21/22 08:18
1-10115-1	L2L1039-07	Solid	Grab		12/19/22 14:00	12/21/22 08:18
1-10115-2	L2L1039-08	Solid	Grab		12/19/22 14:00	12/21/22 08:18
1-10146-1	L2L1039-09	Solid	Grab		12/19/22 14:30	12/21/22 08:18
1-10128-1	L2L1039-10	Solid	Grab		12/19/22 15:00	12/21/22 08:18
1-10128-2	L2L1039-11	Solid	Grab		12/19/22 15:00	12/21/22 08:18
2-10061-1	L2L1039-12	Solid	Grab		12/19/22 16:00	12/21/22 08:18
2-10061-2	L2L1039-13	Solid	Grab		12/19/22 16:00	12/21/22 08:18
2-10061-3	L2L1039-14	Solid	Grab		12/19/22 16:00	12/21/22 08:18
2-10061-4	L2L1039-15	Solid	Grab		12/19/22 16:00	12/21/22 08:18
2-10061-5	L2L1039-16	Solid	Grab		12/19/22 16:00	12/21/22 08:18

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1039

Analytical Testing Parameters

Client Sample ID: 1-10105-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-01
Collected By: CUSTOMER
Collection Date: 12/19/2022 11:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	2		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Other Non-Asbestos Fibers	93		1	1	%		12/19/22 1100	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1100	01/03/23 0000	MCS

Client Sample ID: 1-10104-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-02
Collected By: CUSTOMER
Collection Date: 12/19/2022 11:30

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Other Non-Asbestos Fibers	85		1	1	%		12/19/22 1130	01/03/23 0000	MCS
Other Matrix Materials	10		1	1	%		12/19/22 1130	01/03/23 0000	MCS

MICROBAC®

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1039

Client Sample ID: 1-10144-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-03
Collected By: CUSTOMER
Collection Date: 12/19/2022 12:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Other Non-Asbestos Fibers	95		1	1	%		12/19/22 1200	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1200	01/03/23 0000	MCS

Client Sample ID: 1-10116-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-04
Collected By: CUSTOMER
Collection Date: 12/19/2022 13:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Other Non-Asbestos Fibers	95		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1039

Client Sample ID: 1-10116-2
Sample Matrix: Solid
Lab Sample ID: L2L1039-05
Collected By: CUSTOMER
Collection Date: 12/19/2022 13:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Other Non-Asbestos Fibers	95		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS

Client Sample ID: 1-10116-3
Sample Matrix: Solid
Lab Sample ID: L2L1039-06
Collected By: CUSTOMER
Collection Date: 12/19/2022 13:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/19/22 1300	01/03/23 0000	MCS
Other Matrix Materials	5		1	1	%		12/19/22 1300	01/03/23 0000	MCS

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CERTIFICATE OF ANALYSIS

L2L1039

Client Sample ID: 1-10115-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-07
Collected By: CUSTOMER
Collection Date: 12/19/2022 14:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Cellulose	10		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS

Client Sample ID: 1-10115-2
Sample Matrix: Solid
Lab Sample ID: L2L1039-08
Collected By: CUSTOMER
Collection Date: 12/19/2022 14:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Cellulose	10		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/19/22 1400	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1400	01/03/23 0000	MCS

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CERTIFICATE OF ANALYSIS

L2L1039

Client Sample ID: 1-10146-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-09
Collected By: CUSTOMER
Collection Date: 12/19/2022 14:30

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Cellulose	10		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/19/22 1430	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1430	01/03/23 0000	MCS

Client Sample ID: 1-10128-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-10
Collected By: CUSTOMER
Collection Date: 12/19/2022 15:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Other Non-Asbestos Fibers	85		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Other Matrix Materials	10		1	1	%		12/19/22 1500	01/03/23 0000	MCS

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CERTIFICATE OF ANALYSIS

L2L1039

Client Sample ID: 1-10128-2
Sample Matrix: Solid
Lab Sample ID: L2L1039-11
Collected By: CUSTOMER
Collection Date: 12/19/2022 15:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Other Non-Asbestos Fibers	95		1	1	%		12/19/22 1500	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1500	01/03/23 0000	MCS

Client Sample ID: 2-10061-1
Sample Matrix: Solid
Lab Sample ID: L2L1039-12
Collected By: CUSTOMER
Collection Date: 12/19/2022 16:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Cellulose	10		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS

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L2L1039

Client Sample ID: 2-10061-2
Sample Matrix: Solid
Lab Sample ID: L2L1039-13
Collected By: CUSTOMER
Collection Date: 12/19/2022 16:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Cellulose	5		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Non-Asbestos Fibers	95		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS

Client Sample ID: 2-10061-3
Sample Matrix: Solid
Lab Sample ID: L2L1039-14
Collected By: CUSTOMER
Collection Date: 12/19/2022 16:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Cellulose	10		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS

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CERTIFICATE OF ANALYSIS

L2L1039

Client Sample ID: 2-10061-4
Sample Matrix: Solid
Lab Sample ID: L2L1039-15
Collected By: CUSTOMER
Collection Date: 12/19/2022 16:00

Analyses Performed by: MCCALL AND SPERO ENVIRONMENTAL

General Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA/600/M4-82-020									
Asbestos, Chrysotile	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Cellulose	10		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Mineral Wool	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/19/22 1600	01/03/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/19/22 1600	01/03/23 0000	MCS

Client Sample ID: 2-10061-5
Sample Matrix: Solid
Lab Sample ID: L2L1039-16
Collected By: CUSTOMER
Collection Date: 12/19/2022 16:00

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Metals Total by ICP	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: ASTM E1645-01									
Lead	140000		220	1100	mg/kg		01/04/23 1150	01/05/23 1421	SSL

*Results in **bold** have exceeded a limit defined for this project. Limits are provided for reference but as regulatory limits change frequently, Microbac Laboratories, Inc. advises the recipient of this report to confirm such limits and units of concentration with the appropriate Federal, state or local authorities before acting on the data.*

Definitions

%: Percent
MDL: Minimum Detection Limit
mg/kg: Milligrams per Kilogram
RL: Reporting Limit

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 18.3°C

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CERTIFICATE OF ANALYSIS

L2L1039

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		

Project Requested Certification(s)

McCall and Spero Environmental
00076 Kentucky Energy and Environment Cabinet

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:

David Lester
Customer Relationship Manager
Reported: 01/05/2023 16:50

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET
Department of Highways
DIVISION OF RIGHT OF WAY & UTILITIES

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RIGHT OF WAY CERTIFICATION

☒ Original	☐ Re-Certification	RIGHT OF WAY CERTIFICATION

ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
01-10099.00	Calloway	1100 FD55 121 9414002R	

PROJECT DESCRIPTION

Kentucky Bridge Program - 018B00018N - KY 121 at Clayton Creek Bridge Replacement

☐ **No Additional Right of Way Required**

Construction will be within the limits of the existing right of way. The right of way was acquired in accordance to FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional right of way or relocation assistance were required for this project.

☒ **Condition # 1 (Additional Right of Way Required and Cleared)**

All necessary right of way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Just Compensation has been paid or deposited with the court. All relocations have been relocated to decent, safe, and sanitary housing or that KYTC has made available to displaced persons adequate replacement housing in accordance with the provisions of the current FHWA directive.

☐ **Condition # 2 (Additional Right of Way Required with Exception)**

The right of way has not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Just Compensation has been paid or deposited with the court for most parcels. Just Compensation for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract

☐ **Condition # 3 (Additional Right of Way Required with Exception)**

The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. All remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary right of way will not be fully acquired, and/or some occupants will not be relocated, and/or the just compensation will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction.

Total Number of Parcels on Project	5	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed	5		
Condemnation	0		
Signed ROE	0		

Notes/ Comments (Text is limited. Use additional sheet if necessary.)

LPA RW Project Manager		Right of Way Supervisor	
Printed Name		Printed Name	Mark C. Askin, P.E.
Signature		Signature	Mark Askin, P.E. Digitally signed by Mark Askin, P.E. DN: cn=Mark Askin, P.E., c=US, email=mark.askin@strand.com Date: 2024.05.06 07:32:34 -04'00'
Date		Date	05/06/24

Right of Way Director		FHWA	
Printed Name	Dean M. Loy	Printed Name	
Signature	DM Loy Digitally signed by DM Loy Date: 2024.05.06 07:42:53 -04'00'	Signature	
Date		Date	

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET
Department of Highways
DIVISION OF RIGHT OF WAY & UTILITIES

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RIGHT OF WAY CERTIFICATION

☒ Original	☐ Re-Certification	RIGHT OF WAY CERTIFICATION

ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
01-10100.00	Calloway	1100 FD55 121 9414002R	

PROJECT DESCRIPTION

Kentucky Bridge Program - 018B00023N - KY 121 at Blood River Bridge Replacement

☒ **No Additional Right of Way Required**

Construction will be within the limits of the existing right of way. The right of way was acquired in accordance to FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional right of way or relocation assistance were required for this project.

☐ **Condition # 1 (Additional Right of Way Required and Cleared)**

All necessary right of way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Just Compensation has been paid or deposited with the court. All relocations have been relocated to decent, safe, and sanitary housing or that KYTC has made available to displaced persons adequate replacement housing in accordance with the provisions of the current FHWA directive.

☐ **Condition # 2 (Additional Right of Way Required with Exception)**

The right of way has not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Just Compensation has been paid or deposited with the court for most parcels. Just Compensation for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract

☐ **Condition # 3 (Additional Right of Way Required with Exception)**

The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. All remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary right of way will not be fully acquired, and/or some occupants will not be relocated, and/or the just compensation will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction.

Total Number of Parcels on Project	0	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed	0		
Condemnation	0		
Signed ROE	0		

Notes/ Comments (Text is limited. Use additional sheet if necessary.)

LPA RW Project Manager		Right of Way Supervisor	
Printed Name		Printed Name	Mark C. Askin, P.E.
Signature		Signature	Mark Askin, P.E. Digitally signed by Mark Askin, P.E. DN: cn=Mark Askin, P.E., c=US, email=mark.askin@strand.com Date: 2024.05.06 07:36:55 -04'00'
Date		Date	05/06/24

Right of Way Director		FHWA	
Printed Name	Dean M. Loy	Printed Name	
Signature	DM Loy Digitally signed by DM Loy Date: 2024.05.06 07:44:16 -04'00'	Signature	
Date		Date	

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET
Department of Highways
DIVISION OF RIGHT OF WAY & UTILITIES

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RIGHT OF WAY CERTIFICATION

☒ Original	☐ Re-Certification	RIGHT OF WAY CERTIFICATION

ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
01-10144	Hickman	1100 FD55 121 9414002R	

PROJECT DESCRIPTION

Kentucky Bridge Program - 053B00002N - US 51 AT BRUSH CREEK

☐ **No Additional Right of Way Required**

Construction will be within the limits of the existing right of way. The right of way was acquired in accordance to FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional right of way or relocation assistance were required for this project.

☒ **Condition # 1 (Additional Right of Way Required and Cleared)**

All necessary right of way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Just Compensation has been paid or deposited with the court. All relocations have been relocated to decent, safe, and sanitary housing or that KYTC has made available to displaced persons adequate replacement housing in accordance with the provisions of the current FHWA directive.

☐ **Condition # 2 (Additional Right of Way Required with Exception)**

The right of way has not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Just Compensation has been paid or deposited with the court for most parcels. Just Compensation for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract

☐ **Condition # 3 (Additional Right of Way Required with Exception)**

The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. All remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary right of way will not be fully acquired, and/or some occupants will not be relocated, and/or the just compensation will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction.

Total Number of Parcels on Project	5	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed	5		
Condemnation	0		
Signed ROE	0		

Notes/ Comments (Text is limited. Use additional sheet if necessary.)

LPA RW Project Manager		Right of Way Supervisor	
Printed Name		Printed Name	Mark C. Askin, P.E.
Signature		Signature	Mark Askin, P.E. Digitally signed by Mark Askin, P.E. DN: cn=Mark Askin, P.E., c=US, email=mark.askin@strand.com Date: 2023.09.28 14:13:34 -04'00'
Date		Date	09/28/2023

Right of Way Director		FHWA	
Printed Name	Dean M. Loy	Printed Name	
Signature	DM Loy Digitally signed by DM Loy Date: 2024.05.06 09:52:30 -04'00'	Signature	
Date		Date	

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
FD55 121 94140 02U
Mile point: 10.834 TO 10.852
BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00018N) KY-121 AT CLAYTON CREEK
ITEM NUMBER: 01-10099.00

PROJECT NOTES ON UTILITIES

For all projects under 2000 Linear feet which require a normal excavation locate request pursuant to KRS 367.4901-4917, the awarded contractor shall field mark the proposed excavation or construction boundaries of the project (also called white lining) using the procedure set forth in KRS 367.4909(9)(k). For all projects over 2000 linear feet, which are defined as a "Large Project" in KRS 367.4903(18), the awarded contractor shall initially mark the first 2000 linear feet minimally of proposed excavation or construction boundaries of the project to be worked using the procedure set forth in KRS 367.4909(9)(k). This temporary field locating of the project excavation boundary shall take place prior to submitting an excavation location request to the underground utility protection Kentucky Contact Center. For large projects, the awarded contractor shall work with the impacted utilities to determine when additional white lining of the remainder of the project site will take place. This provision shall not alter or relieve the awarded contractor from complying with requirements of KRS 367.4905 to 367.4917 in their entirety.

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs. The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
FD55 121 94140 02U
Mile point: 10.834 TO 10.852
BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00018N) KY-121 AT CLAYTON CREEK
ITEM NUMBER: 01-10099.00

the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

NOTE: DO NOT DISTURB THE FOLLOWING FACILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

West Kentucky RECC – Electric

- Contractor to coordinate with WKRECC engineering & safety personnel to have lines covered and review crane swing plans prior to construction.

City of Murray - Water

The Contractor is fully responsible for protection of all utilities listed above

THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

AT&T KY – Communication

- AT&T No-Charge Agreement: Aerial copper cable, poles, down guys, and anchors to be removed over creek on north and south side. Buried cable to be cut off and abandoned in place.

City of Murray – Natural Gas

- Relocation of 1,000 linear feet of existing 4” PE due to roadway/bridge widening. Project requires trenching 650 feet of 4” PE and HDD 350’ of 4” PE and connecting into existing system on either side of relocation.

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
FD55 121 94140 02U
Mile point: 10.834 TO 10.852
BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00018N) KY-121 AT CLAYTON CREEK
ITEM NUMBER: 01-10099.00

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE OWNER OR THEIR SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

Not Applicable

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD CONTRACTOR AS INCLUDED IN THIS CONTRACT

Not Applicable

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ **No Rail Involvement** ☐ **Rail Involved** ☐ **Rail Adjacent**

Form Revised 6/24/16

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
FD55 121 94140 02U
Mile point: 10.834 TO 10.852
BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00018N) KY-121 AT CLAYTON CREEK
ITEM NUMBER: 01-10099.00

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T KY - Communication	810 Kentucky Avenue Paducah, KY 42003	Amanda Berkley	270-444-5047	as0063@att.com
City of Murray - Natural Gas	200 Andrus Drive Murray, KY 42071	Thomas Kutcher	270-762-0336	Thomas.Kutcher@murrayky.gov
City of Murray - Water	200 Andrus Drive Murray, KY 42071	Thomas Kutcher	270-762-0336	Thomas.Kutcher@murrayky.gov
WKRECC - Electric	1218 West Broadway Mayfield, KY 42006	Ricky Binkley	270-705-1295	mjones@wkrecc.com

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
No federal number available
FD55 121 9414002U
Mile point: 5.220 TO 5.276
BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00023N) KY-121 AT BLOOD RIVER
ITEM NUMBER: 01-10100.00

PROJECT NOTES ON UTILITIES

The contractor should be aware that there is UTILITY WORK INCLUDED IN THIS ROAD CONSTRUCTION CONTRACT. The Contractor shall review the GENERAL UTILITY NOTES AND INSTRUCTIONS which may include KYTC Utility Bid Item Descriptions, utility owner supplied specifications, plans, list of utility owner preapproved subcontractors, and other instructions. Utility contractors may be added via addendum if KYTC is instructed to do so by the utility owner. Potential contractors must seek prequalification from the utility owner. Any revisions must be sent from the utility owner to KYTC a minimum of one week prior to bid opening.

For all projects under 2000 Linear feet which require a normal excavation locate request pursuant to KRS 367.4901-4917, the awarded contractor shall field mark the proposed excavation or construction boundaries of the project (also called white lining) using the procedure set forth in KRS 367.4909(9)(k). For all projects over 2000 linear feet, which are defined as a “Large Project” in KRS 367.4903(18), the awarded contractor shall initially mark the first 2000 linear feet minimally of proposed excavation or construction boundaries of the project to be worked using the procedure set forth in KRS 367.4909(9)(k). This temporary field locating of the project excavation boundary shall take place prior to submitting an excavation location request to the underground utility protection Kentucky Contact Center. For large projects, the awarded contractor shall work with the impacted utilities to determine when additional white lining of the remainder of the project site will take place. This provision shall not alter or relieve the awarded contractor from complying with requirements of KRS 367.4905 to 367.4917 in their entirety.

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs. The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
No federal number available
FD55 121 9414002U
Mile point: 5.220 TO 5.276
BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00023N) KY-121 AT BLOOD RIVER
ITEM NUMBER: 01-10100.00

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The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

NOTE: DO NOT DISTURB THE FOLLOWING FACILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

Mediacom - Communication

West Kentucky RECC - Electric

Comcast (Paducah) - CATV

The Contractor is fully responsible for protection of all utilities listed above

THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
No federal number available
FD55 121 9414002U
Mile point: 5.220 TO 5.276
BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00023N) KY-121 AT BLOOD RIVER
ITEM NUMBER: 01-10100.00

Not Applicable

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE OWNER OR THEIR SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

Not Applicable

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD CONTRACTOR AS INCLUDED IN THIS CONTRACT

West Kentucky & Tennessee Telecommunications Coop - Communication

- The proposed relocation will require the following:
  - Approximately 1600 LNFT of directional drilling
  - Installation/pulling of approximately 1800 LNFT of fiber optic cable in the proposed innerduct placed via directional drilling.
  - Drilling through pockets of heavy rock or gravel in bottom of creek
  - Installation of two (2) each flush mount hand holes.
  - Splicing of proposed fiber optic line to existing fiber optic line.

- Roadway Contractor shall schedule and participate in an onsite pre-construction meeting with WK&T prior to the commencement of construction.
- Roadway Contractor shall locate and pothole the existing WK&T fiber optic lines prior to beginning of any excavation.
- WK&T can provide an onsite representative to be present during the excavation around their fiber lines upon request at least 2 days in advance from the Roadway Contractor.
- WK&T shall provide all materials for relocation to the selected subcontractor prior to the commencement of the relocation work. This material includes but is not limited to: Corning 96 Strand Fiber, Corning 48 Strand Fiber, Hubble 24x36x24 Vaults, PLP 9.5”x19” Coyote

UTILITIES AND RAIL CERTIFICATION NOTE

Calloway County
No federal number available
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BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00023N) KY-121 AT BLOOD RIVER
ITEM NUMBER: 01-10100.00

Dome Splice Closures, Blue Diamond 2" Innerduct SDR 13.5 HDPE, and all other miscellaneous and necessary appurtenances.

- Roadway Contractor shall subcontract relocation work to one of the WK&T prequalified preferred contractors as shown below for the fiber optic relocation.

1. Fiberworks Installation and Repair
   Contact Name: Adam Elliot
   Email: Adam.fiberworks@gmail.com
   Phone: (270) 970-0670
   2424 County Road 1024
   Cunningham, KY 42035-9300

2. OBT Construction
   Contact Name: David Bell
   Email: david.bell@frontiernet.net
   Phone: (731) 431-9428
   P.O. Box 908
   Martin, TN 38237

3. Star Construction
   Contact Name: Gerald Hedden
   Email: Gerald.hedden@star-llc.net
   Phone: (828) 557-6285
   6621 Asheville Hwy
   Knoxville, TN 37924

UTILITIES AND RAIL CERTIFICATION NOTE

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BRIDGE PROJECT IN CALLOWAY COUNTY ON (018B00023N) KY-121 AT BLOOD RIVER
ITEM NUMBER: 01-10100.00

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ **No Rail Involvement** ☐ **Rail Involved** ☐ **Rail Adjacent**

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
Comcast (Paducah) - CATV	3620 James Sanders Blvd. Paducah, KY 42001	Steve Parmley	270-243-4137	Steve_Parmley@comcast.com
Mediacom - Communication	90 North Main Benton, KY 42025	Brian Carter	270-703-4363	bcarter@mediacomcc.com
West Kentucky & Tennessee Telecommunications Coop - Communication	100 WK&T Technology Drive Hickory, KY 42051	Tim Merrick	270-856-1878	tmerrick.wk@wk.net
West Kentucky RECC - Electric	1218 West Broadway Mayfield, KY 42006	Milton Jones	270-705-1295	mjones@wkrecc.com

UTILITIES AND RAIL CERTIFICATION NOTE

Hickman County
FD55 121 94140 02U
Mile point: 11.912 TO 11.922
BRIDGE PROJECT IN HICKMAN COUNTY ON (053B00002N) US-51 AT BRUSH CREEK
ITEM NUMBER: 01-10144.00

PROJECT NOTES ON UTILITIES

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs. The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

UTILITIES AND RAIL CERTIFICATION NOTE

Hickman County
FD55 121 94140 02U
Mile point: 11.912 TO 11.922
BRIDGE PROJECT IN HICKMAN COUNTY ON (053B00002N) US-51 AT BRUSH CREEK
ITEM NUMBER: 01-10144.00

NOTE: DO NOT DISTURB THE FOLLOWING FACILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

Not Applicable

The Contractor is fully responsible for protection of all utilities listed above

THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

Not Applicable

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE OWNER OR THEIR SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

AT&T KY – Communication

AT&T will remove one (1) 6-strand fiber, one (1) 48-strand fiber, and one (1) 200 pair copper cable. AT&T will place one (1) new 216-strand fiber cable, the removed copper cable will not be replaced. The relocation schedule duration set in the executed agreement, is 60 days. The notice to proceed was sent to AT&T on 5/4/2023. At the time of the notice to proceed notification, the right of way acquisition had not been cleared. Therefore, the AT&T utility relocation will be completed in coordination with the roadway contract.

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD CONTRACTOR AS INCLUDED IN THIS CONTRACT

Not Applicable

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ **No Rail Involvement** ☐ **Rail Involved** ☐ **Rail Adjacent**

Form Revised 6/24/16

UTILITIES AND RAIL CERTIFICATION NOTE

Hickman County
FD55 121 94140 02U
Mile point: 11.912 TO 11.922
BRIDGE PROJECT IN HICKMAN COUNTY ON (053B00002N) US-51 AT BRUSH CREEK
ITEM NUMBER: 01-10144.00

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T KY - Communication	810 Kentucky Avenue Paducah, KY 42003	Alan Shelby	270-444-5048	as7168@att.com

GENERAL UTILITY NOTES AND INSTRUCTIONS APPLICABLE TO ALL UTILITY WORK MADE A PART OF THE ROAD CONSTRUCTION CONTRACT

The contractor should be aware the following utility notes and KYTC Utility Bid Item Descriptions shall supersede, replace and take precedence over any and all conflicting information that may be contained in utility owner supplied specifications contained in the contract, on plans supplied by the utility owner, or any utility owner specifications or information externally referenced in this contract.

Where information may have been omitted from these notes, bid item descriptions, utility owner supplied specifications or plans; the KYTC Standard Specifications for Road and Bridge Construction shall be referenced.

PROTECTION OF EXISTING UTILITIES

The existing utilities shown on the plans are shown as best known at the time the plans were developed and are to be used as a guide only by the Contractor. The Contractor shall use all means at his disposal to accurately locate all existing utilities, whether shown on the plans or not, prior to excavation. The contractor shall protect these utilities during construction. Any damage to existing utilities during construction that are shown or not shown on the plans shall be repaired at the Contractor's expense.

PREQUALIFIED UTILITY CONTRACTORS

Some utility owners may require contractors that perform relocation work on their respective facilities as a part of the road contract be prequalified or preapproved by the utility owner**. Utility contractors may be added via addendum if KYTC is instructed to do so by the utility owner. Potential contractors must seek prequalification from the utility owner. Any revisions must be sent from the utility owner to KYTC a minimum of one week prior to bid opening.** Those utility owners with a prequalification or preapproval requirement are as follows:

> *West Kentucky and Tennessee Telecommunications Cooperative – fiber optic line relocation*

The bidding contractor needs to review the above list and choose from the list of approved subcontractors at the end of these general notes as identified above before bidding. When the list of approved subcontractors is provided, only subcontractors shown on the following list(s) will be allowed to work on that utility as a part of this contract. In such instances, the utility subcontractor is not required to be prequalified with the KYTC Division of Construction Procurement.

IF A UTILITY SUPPLIED CONTRACTOR LIST IS NOT PROVIDED

When the above list of approved subcontractors for the utility work is not provided, the utility work can be completed by the prime contractor, or a prime contractor-chosen subcontractor. In such instances, the subcontractor shall be prequalified with the KYTC Division of Construction Procurement in the work type of "Utilities" (I33). Those who would like to become prequalified may contact the Division of Construction Procurement at (502) 564-3500. Please note: it could take up to 30 calendar days for prequalification to be approved. The prequalification does not have to be approved prior to the bid, but must be approved before the subcontract will be approved by KYTC and the work can be performed.

CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

All utility work is being performed as a part of a contract administered by KYTC; there is not a direct contract between the utility contractor and utility owner. The KYTC Section Engineer is ultimately responsible for the administration of the road contract and any utility work included in the contract.

SUBMITTALS AND CORRESPONDENCE

All submittals and correspondence of any kind relative to utility work included in the road contract shall be directed to the KYTC Section Engineer, a copy of which may also be supplied to the utility owner by the contractor to expedite handling of items like material approvals and shop drawings. All approvals and correspondence generated by the utility owner shall be directed to the KYTC Section Engineer. The KYTC Section Engineer will relay any approvals or correspondence to the utility contractor as appropriate. At no time shall any direct communication between the utility owner and utility contractor without the communication flowing through the KYTC Section Engineer be considered official and binding under the contract.

ENGINEER

Where the word "Engineer" appears in any utility owner specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the "Engineer" is the Kentucky Transportation Cabinet (KYTC) Section Engineer or designated representative and the utility owner engineer or designated representative jointly. Both engineers must mutually agree upon all decisions made with regard to the utility construction. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

Where the word "Inspector" or "Resident Project Representative" appears in the utility specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the "Inspector" or "Resident Project Representative" is the utility owner inspector and KYTC inspector jointly. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

NOTICE TO UTILITY OWNERS OF THE START OF WORK

One month before construction is to start on a utility, the utility contractor shall make notice to the KYTC Section Engineer and the utility owner of when work on a utility is anticipated to start. The utility contractor shall again make confirmation notice to the KYTC Section Engineer and the utility owner one week before utility work is to actually start.

UTILITY SHUTDOWNS

The Contractor shall not shut down any active and in-service mains, utility lines or services for any reason unless specifically given permission to do so by the utility owner. The opening and closing of valves and operating of other active utility facilities for main, utility line or utility service shut downs are to be performed by the utility owner unless specific permission is given to the contractor by the owner to make shutdowns . If and when the utility owner gives the contractor permission to shutdown mains, utility lines or utility services, the contractor shall do so following the rules, procedures and regulations of the utility owner. Any permission given by the utility owner to the contractor to shutdown active and in-service mains, utility lines or services shall be communicated to the KYTC Section Engineer by the utility owner that such permission has been given.

Notice to customers of utility shut downs is sometimes required to be performed by the utility contractor. The contractor may be required; but, is not limited to, making notice to utility customers in a certain minimum amount of time in advance of the shut down and by whatever means of communication specified by the utility owner. The means of communication to the customer may be; but is not limited to, a door hanger, notice by newspaper ad, telephone contact, or any combination of communication methods deemed necessary, customary and appropriate by the utility owner. The contractor should refer to the utility owner specifications for requirements on customer notice.

Any procedure the utility owner may require the contractor to perform by specification or plan note and any expense the contractor may incur to comply with the utility owner's shut down procedure and notice to customers shall be considered an incidental expense to the utility construction.

CUSTOMER SERVICE AND LATERAL ABANDONMENTS

When temporary or permanent abandonment of customer water, gas, or sewer services or laterals are necessary during relocation of utilities included in the contract, the utility contractor shall perform these abandonments as part of the contract as incidental work. No separate payment will be made for service line and lateral abandonments. The contractor shall provide all labor, equipment and materials to accomplish the temporary or permanent abandonment in accordance with the plans, specifications and/or as directed by the engineer. Abandonment may include, but is not limited to, digging down on a water or gas main at the tap to turn off the tap valve or corporation stop and/or capping or plugging the tap, digging down on a sewer tap at the main and plugging or capping the tap, digging down on a service line or lateral at a location shown on the plans or agreeable to the engineer and capping or plugging, or performing any other work necessary to abandon the service or lateral to satisfactorily accomplish the final utility relocation.

STATIONS AND DISTANCES

All stations and distances, when indicated for utility placement in utility relocation plans or specifications, are approximate; therefore, some minor adjustment may have to be made during construction to fit actual field conditions. Any changes in excess of 6 inches of plan location shall be reviewed and approved jointly by the KYTC Section Engineer or designated representative and utility owner engineer or designated representative. Changes in location without prior approval shall be remedied by the contractor at his own expense if the unauthorized change creates an unacceptable conflict or condition.

RESTORATION

Temporary and permanent restoration of paved or stone areas due to utility construction shall be considered incidental to the utility work. No separate payment will be made for this work. Temporary restoration shall be as directed by the KYTC Section Engineer. Permanent restoration shall be "in-kind" as existing.

Restoration of seed and sod areas will be measured and paid under the appropriate seeding and sodding bid items established in the contract for roadway work.

BELOW ARE NOTES FOR WHEN "INST" ITEMS ARE IN THE CONTRACT MEANING THE UTILITY COMPANY IS PROVIDING CERTAIN MATERIALS FOR UTILITY RELOCATION

MATERIAL

Contrary to Utility Bid Item Descriptions, those bid items that have the text **"Inst"** at the end of the bid item will have the major components of the bid item provided by the utility owner. No direct payment will be made for the major material component(s) supplied by the utility company. All remaining materials required to construct the bid item as detailed in utility bid item descriptions, in utility specifications and utility plans that are made a part of this contract will be supplied by the contractor. The contractor's bid price should reflect the difference in cost due to the provided materials.

The following utility owners have elected to provide the following materials for work under this contract:

West Kentucky and Tennessee Telecommunications Cooperative:
Corning 96 Ribbon Fiber (96EC5 FIBER)
Corning 48 Ribbon Fiber (48EC5 FIBER)
Hubble 30x48x36 vault PG3048Z793792
PLP 9.5"x19" Coyote Dome Splice Closure (800015584)
Blue Diamond 2" InnerDuct SDR 13.5, HDPE Orange T12.5 Smooth (BDI214OR-T12.5)

SECURITY OF SUPPLIED MATERIALS

If any utility materials are to be supplied by the utility owner, it will be the responsibility of the utility contractor to secure all utility owner supplied materials after delivery to the project site. The utility contractor shall coordinate directly with the utility owner and their suppliers for delivery and security of the supplied materials. Any materials supplied by the utility owner and delivered to the construction site that are subsequently stolen, damaged or vandalized and deemed unusable shall be replaced with like materials at the contractor's expense.

LIST OF PREQUALIFIED OR PREAPPROVED CONTRACTORS

West Kentucky and Tennessee Telecommunications Cooperative – fiber optic line relocation

1. *Fiberworks Installation and Repair*
   2424 County Road 1024
   Cunninham, KY
   Adam Elliott
   (270) 970-0670

2. *OBT Construction, Inc.*
   PO Box 908
   Martin, TN
   David Bell
   (731) 431-9428

3. *Star Construction, LLC*
   6621 Asheville Highway
   Knoxville TN 37924
   Gerald Hedden
   (828) 557-6285

Standard Electric and Communications Bid Item Descriptions

THESE BID ITEM DESCRIPTIONS SHALL SUPERCEDE ANY BID ITEM DESCRIPTIONS CONTAINED WITHIN UTILITY OWNER SUPPLIED SPECIFICATIONS ELSEWHERE IN THIS PROPOSAL.

BOLLARDS This item is for payment for furnishing and installing protective guard posts at above-ground utility installations. A bollard may consist of, but is not limited to, a steel post set in concrete, or any other substantial post material. This item shall include all labor, equipment, and materials needed for complete installation of the bollard, as specified by the utility owner specifications and plans. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item paid EACH (EA) when complete.

NOTE: A bid code for this item has been established in standard roadway bid items and shall be used for payment of this item. The bid code is 21341ND.

EC CONCRETE PAD This item is for payment for the installation of a concrete pad for the mounting of electrical or communications equipment. The pad may be prefabricated or cast-in-place as the specifications, standard drawings, or plans allow. This item shall include all labor, equipment, excavation, materials, and backfill to install the specified concrete pad at the locations shown on the plans, in accordance with the specifications, standard drawings, and plans, complete and ready-for-use. If specifications, standard drawings, or plans require a granular base or reinforcement steel, such base or steel and their placement shall be considered incidental to this bid item. Any duct that is to be placed to the pad shall be installed prior to pad construction. Duct will be paid under separate bid items. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be measured and paid SQUARE YARD (SY) when complete.

EC DIRECTIONAL BORE Payment under this item is made whenever the plans or specifications specifically show directional boring is to be utilized to minimize the impact of open-cut for the installation of conduit under streets, creeks, etc. Payment under this item shall include the specified encasement pipe, conduit(s), void filler material (including grout, aggregate, bentonite, or other material as specified), casing spacers (as specified), labor, and equipment. No separate payment will be made for encasement pipe and/or conduits used within the limits of the directional bore. Payment under this item shall not be size specific and no separate bid items will be established for size or number of conduit variations to be installed. The encasement pipe, conduit sizes, and conduit numbers to be included under this item shall be as shown on the plans and/or in the specifications. Any and all directional bores in each contract shall be paid under one directional bore bid item included in the contract, regardless of bore size, encasement size, conduit size, or number of conduits. Some bores may not require the use of an encasement, but may only require pulling the conduit directly into the bore. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

EC DUCT These items shall include all labor, equipment, and material to excavate, install, and backfill the specified bank of duct at locations shown in the plans, in accordance with the specifications and standard drawings, complete and ready-for-use. These bid items shall include all necessary appurtenances, connections, fittings, plugs, tees, bends, collars, racks or spacers, pull string, granular or concrete encasement, compacted earth or flowable fill backfill, etc. Flowable fill, where specified on the plans and specifications, shall be considered incidental to the duct items. No separate payment will be made for

flowable fill, unless directed to be used contrary to plans and specifications. All excavation shall be unclassified. No additional payment will be made for rock excavation. Duct shall be measured as the horizontal distance from outside face of structure to outside face of structure; or, to the point of duct termination at dead ends or poles. No additional payment will be made for vertical conduit. No separate bid items will be provided due to varying duct sizes. Any and all duct sizes and configurations shall be paid under these items. The only variations in bid items shall be in the number of ducts in a bank and if the duct is or is not to be concrete encased. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

EC ELECTRIC MANHOLE, ELECTRIC PIT, ELECTRIC PULL BOX, ELECTRIC VAULT, COMMUNICATIONS MANHOLE, COMMUNICATIONS PULL BOX These items shall include all labor, equipment, excavation, materials, and backfill to install the specified manhole, pit, vault or pull box at the locations as shown on the plans, in accordance with the specifications and standard drawings, complete and ready-for-use. No separate bid items will be provided for varying sizes of these structures. All structures shall be paid under the appropriate bid items regardless of size. Where the specifications, plans, or standard drawings specify a granular base be placed under these structures, these bid items shall include the materials and construction of the granular base. Where structures are specified to be backfilled with flowable fill, the cost of the flowable fill shall be considered incidental to the bid item. Payment under these items shall be made regardless of whether the structure is precast or cast-in-place as the plans, specifications, or standard drawings may require. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. These items shall be paid EACH (EA) when complete.

EC LINE MARKER This item is for payment for furnishing and installing an electric or communications utility line marker, as specified by the utility owner specifications and plans. A line marker may consist of a post or monument of whatever materials specified and shall include markings and/or signage on same, as specified by plans or specifications. This item shall include all labor, equipment, and materials needed for complete installation of the marker. This item shall be paid EACH (EA) when complete.

EC POLE REMOVE This item shall include all labor and equipment required for the removal of a wood, steel, or other type utility pole, regardless of material or size. No separate pole removal bid items will be provided for variations of pole material, type, or size. This item also includes removal of any associated attachments to the pole including, but not limited to, cross-arms, hangers, brackets, insulators, downguys, in-ground anchors, etc. All removed materials shall be disposed of by the contractor. This item shall be paid EACH (EA) when complete.

EC POLE REMOVE AND STOCKPILE This item shall include all labor and equipment required for the removal of a wood, steel, or other type utility pole, regardless of material or size. No separate pole removal bid items will be provided for variations of pole material, type, or size. This item also includes removal of any associated attachments to the pole including, but not limited to, cross-arms, hangers, brackets, insulators, downguys, etc. All removed materials shall be stockpiled on-site at a location or locations previously agreed to between the utility owner and contractor, for pickup and disposal by the utility owner. Stockpile locations shall be accessible to the utility owner's road vehicles. Any pole removed that still has cross-arms, protruding insulators, and/or protruding brackets attached shall have such items removed by the contractor so poles can be stacked neatly for pickup. Removed cross-arms, insulators, and brackets shall be stacked separately for pickup. This item shall be paid EACH (EA) when the poles and attachments are stockpiled and ready for pickup.

EC STRUCTURE ABANDON/REMOVE This item is to be used to pay for abandonment, removal, or partial removal and disposal of larger concrete or steel above or below ground electrical or communications structures, such as, but not limited to, manholes, vaults, pits, concrete pull boxes, huts, sheds, small buildings, etc. Payment under this item shall not be limited by size or scope. Payment under this item shall include all labor, equipment, and compacted backfill or flowable fill for abandonment or removal of the underground or above-ground structure and complete restoration. Underground structures to be abandoned or partially removed shall be safeloaded with flowable fill. An underground structure may be abandoned and/or partially removed if the structure is removed to at least 12 inches below final grade or 12 inches below subgrade if under pavement, and the remainder of the structure is not in conflict with other road construction or utility installations. The engineer shall determine if an underground structure requires partial or total removal, or if it can remain partial or whole and safeloaded. Above ground structures shall be removed in total, including any associated base. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

Removal of small underground composite or plastic structures, such as pull boxes, shall not be paid under this item. Due to the ease of removal and disposal of small composite or plastic structures, their removal and disposal shall be considered incidental to road construction.

Fiber Optic Installation and Testing Specifications

1. Material
   a. Existing fiber, conduit, and poles will be used to the maximum extent possible, as is/where is, and may not comply with portions of these cable installation specifications.
   b. Steel or PVC conduit shall be minimum schedule 40.
   c. Any exposed steel conduit, brackets, or hardware shall be hot-dipped galvanized after fabrication.
   d. All new split steel shall be flanged.
   e. Handholes shall have a minimum H-15 load rating.
   f. Vaults shall have a minimum H-20 load rating.
   g. Warning signs shall display universal do not dig symbol, “Warning-Buried Fiber-Optic Cable,” company name and logo, local and emergency One Call toll-free numbers.

2. Minimum Depths
   a. Minimum cover required in the placement of the conduit/cable shall be 3’-4” except in the following instances:
      i. Existing construction will be used as is/where is and may not comply with portions of these cable installation specifications as existing fiber is typically buried at a depth of 30 to 36 inches.
      ii. The minimum cover across streams, rivers, and other waterways shall be 10’.
      iii. In rock, the cable/conduit shall be installed to provide a minimum of 18” below the surface of the solid rock or provide a minimum of 42” of total cover, whichever requires the least rock excavation.

3. Buried Cable Warning Tape
   a. All cable/conduit shall be installed with buried detectable warning tape. The warning tape shall be:
      i. Warning tape shall be polyethylene, suitable for direct burial with face resistant colors, and magnetically detectable.
      ii. Installed a minimum 12” above the cable/conduit.
      iii. Installed at a depth 24” below grade and directly above the cable/conduit.
      iv. A minimum of 3” wide and display “Warning-Buried Fiber-Optic Cable,” a company name, logo and emergency one-call toll-free number repeated every 24”.
   b. Bored conduit shall be installed with tracer wire.

4. Conduit Construction
   a. Install conduits by trenching, plowing, or HDD drilling.
   b. Install conduits on a level grade parallel to the surface with only gradual change in grade.
   c. Steel conduits shall be joined with threaded collars, Zap-Lok, or welding per WK&T requirements.
   d. All directional bores shall use HDPE or steel conduit.
   e. Maintain 3’-0” separation from all existing utilities and existing/proposed structures.

5. Innerduct Installation
    a. No cable shall be placed directly in any split/solid steel conduit without innerduct.
    b. Innerduct shall extend beyond the end of all conduits a minimum of 18”. No cable shall be placed directly in any split/solid steel conduit without innerduct.

6. Cable installation in conduit
    a. Do not pull wire into any conduit until conduits have been thoroughly cleaned and swabbed to remove water and debris.
    b. The cable shall be installed using either a sealed pneumatic cable blowing system or a powered pulling winch and hydraulic assist pulling wheels.
    c. The maximum pulling force to be applied to the cable shall not exceed 600 pounds.
    d. Sufficient pulling assists shall be available used to ensure the maximum pulling force is not exceeded at any point along the pull.
    e. The cable shall be lubricated at the reel and all pulling assist locations.
    f. A pulling swivel breakaway rated at 600 pounds shall be used at all times.
    g. Splices shall be allowed only at planned junctions and reel ends.
    h. All splices shall be contained in a handhole or vault.
    i. A minimum of 50’ of slack cable, or as directed by WK&T, shall be left in all intermediate handholes and manholes.
    j. A minimum of 100’ of slack cable, or as directed by WK&T, shall be left in all splice locations.
    k. PVC Conduit/innerduct may be split, with the cable installed inside the split duct and plowed in.

7. Vaults and Handholes
    a. The cable shall be installed using either a sealed pneumatic cable blowing system or a powered pulling winch and hydraulic assist pulling wheels.
    b. The maximum pulling force to be applied to the cable shall not exceed 600 pounds.
    c. All vaults shall be supplied with waterproof lids.
    d. Vaults shall be supplied with coyote enclosures for splicing existing and proposed fiber optic cable.

8. EMS Markers
    a. EMS Markers shall be placed directly above the lid of all buried handholes shall be fabricated into the lids of the handholes.

9. Cable Markers (Warning Signs)
    a. Cable markers shall be installed at all changed in buried cable running line direction, splices, pull boxes, assist-pulling locations, and at both side of road and railroad crossings.
    b. Markers shall be spaced at intervals of no more than 500’ apart in metropolitan areas and within line of light (not to exceed 1000’) in non-metropolitan areas.
    c. Markers shall be positioned so that they can be seen from the location of the cable and set facing perpendicular to the cable running line.
    d. Splices and pull boxes shall be marked on the cable marker post.

10. Delivery, Storage, and Handling
    a. Packing, Shipping, Handling and Unloading
        i. Inspect products for damage prior to delivery onto the job site.
        ii. Deliver materials in the manufacturer's original unopened protective packages.
        iii. Protect equipment and exposed finishes during transportation.
        iv. Unload and handle in a manner to prevent misalignment of parts.
        v. Do not use wire and cable manufactured more than 12 months before delivery to the Worksite.
        vi. Deliver to the site in unbroken standard coils or reels with a tag bearing the manufacturer's name, trade name of the wire, and UL label.
    b. Storage and Protection
        i. Protect equipment from humidity, corrosion, and dirt by storing in a safe, dry, clean area, well-ventilated and heated environment to prevent condensation.
        ii. Store materials in their original protective packaging and protect them against physical damage.
        iii. Protect conduit from the entrance of debris by storing above ground and providing a flat surface and an appropriate covering.
        iv. Protect steel conduit from corrosion and PVC conduit from sunlight.

11. Testing
    a. Test the grounds to determine their resistance in accordance with NEC.
    b. During fiber optic cable installation, use an OTDR to test splices unless otherwise directed by WK&T. Perform installation tests at 1550 nm.
        i. If the loss value for a splice, when measured in one direction with an OTDR, exceeds 0.3 dB, break the splice and re-splice until the splice is 0.3 dB or less.
        ii. If unable to achieve a loss value of 0.3 dB of less after three total splicing attempts, the splice shall be marked as Out-of-Spec. The 0.3 dB spec does not apply to fibers that are being spliced that have different mode-fields. The splice loss may be higher due to the mode-field mismatch.
    c. Test Deliverables: Record test values and results on forms acceptable to Owner/Owner’s Representative.
    d. Correct defective equipment, components, accessories disclosed as the result of field tests at no cost to Owner.

12. Project Records
    a. Document installed work on Project Record Documents. Show horizontal and vertical locations (distance from baselines) and accurate routing into construction including vaults and pull boxes; show sizes and number of conduits, etc.
    b. Test deliverables as indicated in Section 11.
    c. Cable manufacturers, cable type (buffer/ribbon), fiber type, number of fibers, number of fibers per tube, and distance of each section of cable between splice points.

13. Grounding
    a. Size Conductors per NEC or as directed by WK&T.
    b. Connectors
        i. Grounding Connectors Above Grade: Bolted, solderless type made of high strength electrical bronze with silicon bronze clamping bolts and hardware; designed such that bolts, nuts, lock washers and similar hardware which might nick or otherwise damage the ground wire shall not directly contact the ground wire.
        ii. Grounding Connectors below grade: Made using the exothermic weld process.
    c. Ground Rods
        i. Cone-pointed copper-clad steel.
        ii. Length in feet and the manufacturer's trademark die stamped near the top.
        iii. Clean, smooth, continuous copper surfaces, and the proportion of copper shall be uniform throughout the length of the rod.
        iv. Size: 3/4 inch in diameter, eight feet long minimum. Multiple ground rods of shorter lengths may be used at locations where sufficient depth is not available for the eight-foot rods.

NOTICE

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
NATIONWIDE SECTION 404 PERMIT AUTHORIZATION

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
KENTUCKY DIVISION OF WATER
SECTION 401 INDIVIDUAL WATER QUALITY CERTIFICATION

The replacement of US 51 over Brush Creek (Bridge 053B00002N) will entail complete removal of the existing bridge and construction of a new bridge without load restrictions. The project will replace the bridge in the same location with generally the same current geometrics (bridge width, length, hydraulic opening, etc.) to avoid environmental impacts, utility impacts, and minimize the need for new right of way. Approach roadway pavement will be replaced in the direct vicinity of the bridge. The bridge will be closed during construction. Traffic will be maintained by constructing a temporary on-site diversion downstream and stream crossing immediately adjacent. Right-of-way and temporary construction easements will be required.

Location	Description of Project Impacts
US 51 over Brush Creek at MP 19.18	The proposed project will impact approximately 121 ft (0.08 ac) of Brush Creek, a perennial stream approximately 30 ft wide at the US 51 intersection.

Impacts to jurisdictional Waters of the United States as defined by the US Army Corps of Engineers and surface waters of the Commonwealth defined pursuant to 401 KAR Chapter 10 are authorized under Section 404 Nationwide Permit (NWP) #3 for maintenance associated with the repair, rehabilitation, replacement or removal of any previously authorized, currently serviceable structure or fill.

The Kentucky Division of Water has conditionally certified the use of NWP #3 provided the conditions of the attached Individual Water Quality Certification WQC2024-041-1 are met. One such condition limits the use or operation of heavy equipment within the stream channel. In those instances in which such in-stream work is unavoidable, a work platform or temporary crossing constructed with clean rock and sufficient pipe to allow stream flow to continue, unimpeded, shall be used.

To expedite construction, the Contractor may elect to alter the design, or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the Contractor shall obtain written permission from the Division of Construction and the Kentucky Transportation Cabinet, Division of Environmental Analysis (DEA). If such changes result in additional impacts to jurisdictional Waters of the United States, the Contractor will be responsible for coordinating directly with the US Army Corps of Engineers and Kentucky Division of Water to secure the requisite authorization Copies of all correspondence to or from either agency shall be forwarded to DEA Director Danny Peake at 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

The Contractor shall post a copy of this Notice in a conspicuous location at the project site, with unencumbered public access for the duration of the construction.

Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

Rebecca W. Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

April 29, 2024

Mr. Danny Peake
Kentucky Transportation Cabinet (KYTC)
200 Mero St
Frankfort, KY 40622

Re: §401 Water Quality Certification
KY 51 Bridge - Hickman Co
KYTC Bridge Replacement
WQC No: WQC2024-041-1
AI No.: 180969; Activity ID: APE20240001
KYTC Item No.: 1-10144
Brush Creek
Hickman County, Kentucky

Dear Mr. Danny Peake:

Pursuant to Section 401 of the Clean Water Act (CWA) and 40 CFR 121.7(c), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under a federal license or permit, and the attached conditions are met.

Other permits from the Division of Water may be required for this activity. Projects that disturb one acre or more of land or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land require a Kentucky Pollution Discharge Elimination System (KPDES) Stormwater Permit; contact the Surface Water Permits Branch (502-564-3410 or SWPBSupport@ky.gov). A Groundwater Protection Plan is required if activities listed in Section 2(2) of 401 KAR 5:037 are conducted. A Water Withdrawal Application is required for activities proposing raw water withdrawals of 10,000 gallons per day or more; contact the Watershed Management Branch (502-564-3410).

All future correspondence on this project must reference AI No. **180969**. **The attached document is your official Water Quality Certification; please read it carefully**. Please contact Conner Flora by phone at 502-782-3531 or email at conner.flora@ky.gov if you have any questions.

Sincerely,

Samantha Vogeler

Samantha Vogeler, Supervisor
Water Quality Certification Section
Kentucky Division of Water

SV:CF
Attachment

cc: Andrew Logsdon, KYTC: Frankfort (via email: Andrew.Logsdon@ky.gov)
Dave Harmon, KYTC: Frankfort (via email: Dave.Harmon@ky.gov)
Derek Adams, Third Rock Consultants (via email: dadams@thirdrockconsulants.com)
Lee Andrews, USFWS: Frankfort (via email: kentuckyes@fws.gov)
Rhonda Lamb, Four Rivers Basin Coordinator: (via email: rlamb@murraystate.edu)
Shannon McLeary, Paducah Regional Field Office: (via email: shannon.mcleary@ky.gov)

KTC Water Quality Certification

KY 51 Bridge - Hickman Co

Facility Requirements

Permit Number: WQC2024-041-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180969, APE20240001:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Kentucky Transportation Cabinet shall notify the Water Quality Certification Project Manager or Supervisor of the scheduled start of construction activities at least two weeks before the start of construction. This condition is necessary for the Division of Water to be informed of the ongoing activity for the purposes of site visits to ensure implementation of Kentucky Regulatory Statutes and Administrative Regulations; the Division will monitor the environment, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
S-2	Kentucky Transportation Cabinet ongoing activity for the purposes of site visits to ensure implementation of Kentucky Regulatory Statutes and Administrative Regulations; the Division will monitor the environment, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
S-3	Kentucky Transportation Cabinet shall submit as-built drawings within 90 days after substantial completion of construction to the Water Quality Certification Section Project Manager or Supervisor. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

Narrative Requirements:

Condition No.	Condition
T-1	The work approved by this certification shall be limited to 36.726001, -89.000027: The replacement of US 51 over Brush Creek, a perennial stream, will entail complete removal of the existing bridge and construction of a new bridge without load restrictions. The project will replace the bridge in the same location with generally the same current geometrics (bridge width, length, hydraulic opening, etc.) to avoid environmental impacts, utility impacts, and minimize the need for new right of way. To complete this project a total of 371 cubic yards of class III riprap distributed over 121 linear feet of perennial stream. This condition is necessary to confirm activities approved by this certification. [401 KAR 10:030 Section 1, 401 KAR 9:010 Section 1(a)(2), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification

KY 51 Bridge - Hickman Co

Facility Requirements

Permit Number: WQC2024-041-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180969, APE20240001:

Narrative Requirements:

Condition No.	Condition
T-2	All work performed under this certification shall adhere to the design and specifications set forth in the following document(s): Application for Permit to Construct Across or Along a Stream and/or Water Quality Certification received on 2/5/2024, a Pre-Filling Meeting Request on 2/5/2024, and a Certification Request on 3/12/2024. 053B00002N_PRIME_KDOW401WQC_Prefiling_Form_ENV_SUB 053B00002N_PRIME_401WQCApplication_ENV_SUB NOD 1.pdf RE NOD.pdf This condition is necessary to confirm activities approved by this certification. [401 KAR 10:030 Section 1, 401 KAR 9:010 Section 1(a)(2), KRS 224.10-100, KRS 224.70-110]
T-3	Kentucky Transportation Cabinet is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sediment control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-4	No in-stream operations or activities shall be conducted during fish spawning season (April 1 through June 30), due to the potential impacts of increased sediment load and associated water quality and designated aquatic habitat impacts. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 4(1)(c,h), KRS 224.10-100, KRS 224.70-110]
T-5	Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such instream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification

KY 51 Bridge - Hickman Co

Facility Requirements

Permit Number: WQC2024-041-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180969, APE20240001:

Narrative Requirements:

Condition No.	Condition
T-6	Erosion and sediment pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-7	Remove all sediment and erosion control measures after re-vegetation has become well-established. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-8	Any fill or riprap shall be of a composition that shall not cause violations of water quality standards by adversely affecting the biological, chemical, or physical properties of waters of the Commonwealth. If riprap is used, it shall be of a weight and size that bank stress or slump conditions shall not occur. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-9	Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-10	Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse. This condition is necessary to prevent water pollution as prohibited by statute. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-11	To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-12	Removal of existing riparian vegetation shall be restricted to the minimum necessary for project construction. This condition is necessary to minimize negative effects to the environment, protect the use of the stream, and protect aquatic resources. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification

KY 51 Bridge - Hickman Co

Facility Requirements

Permit Number: WQC2024-041-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180969, APE20240001:

Narrative Requirements:

Condition No.	Condition
T-13	Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-14	This Water Quality Certification expires on April 25, 2029. This condition is necessary for the issuance of the certification. [KRS 224.10-100, KRS 224.16-050(2), KRS 224.70-110]
T-15	Other permits from the Division of Water may be required for this activity. If this activity occurs within a floodplain, a Permit to Construct Across or Along a Stream may be required. Please contact the Floodplain Management Section Supervisor (502-564-3410) for more information prior to construction. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) Stormwater Permit shall be required. Please contact the Surface Water Permits Branch (502-564-3410 or SWPBSupport@ky.gov) for more information. A Groundwater Protection Plan is required if any of the activities listed in Section 2(2) of 401 KAR 5:037 are conducted. A Water Withdrawal Application is required for any activities proposing raw water withdrawals of 10,000 gallons per day or more. For technical assistance contact the Watershed Management Branch at 502-564-3410 or visit eec.ky.gov. This condition is necessary for confirm authorized impacts, the appropriate responsible party, monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [KRS 224.10-100, KRS 224.16-050(2), KRS 224.70-110]

NOTICE

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
NATIONWIDE SECTION 404 PERMIT AUTHORIZATION

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
KENTUCKY DIVISION OF WATER
SECTION 401 INDIVIDUAL WATER QUALITY CERTIFICATION

The replacement of KY 121 over Blood River (Bridge 018B00023N) will entail complete removal of the existing bridge and construction of a new bridge without load restrictions. The project will replace the bridge in the same location with generally the same current geometrics (bridge width, length, hydraulic opening, etc.) to avoid environmental impacts, utility impacts, and minimize the need for new right of way. Approach roadway pavement will be replaced in the direct vicinity of the bridge. Part-width construction will be utilized. One lane of traffic will be maintained with temporary signals during the construction by phasing. There will not be an on-site diversion. No right of way will be required.

Location	Description of Project Impacts
KY-121 over Blood River at MP 8.45	The proposed project will impact approximately 33 ft (0.04 ac) of Blood River, a perennial stream approximately 50 ft wide at the KY 121 intersection.

Impacts to jurisdictional Waters of the United States as defined by the US Army Corps of Engineers and surface waters of the Commonwealth defined pursuant to 401 KAR Chapter 10 are authorized under Section 404 Nationwide Permit (NWP) #3 for maintenance associated with the repair, rehabilitation, replacement or removal of any previously authorized, currently serviceable structure or fill.

The Kentucky Division of Water has conditionally certified the use of NWP #3 provided the conditions of the attached Individual Water Quality Certification WQC2024-039-1 are met. One such condition limits the use or operation of heavy equipment within the stream channel. In those instances in which such in-stream work is unavoidable, a work platform or temporary crossing constructed with clean rock and sufficient pipe to allow stream flow to continue, unimpeded, shall be used.

To expedite construction, the Contractor may elect to alter the design, or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the Contractor shall obtain written permission from the Division of Construction and the Kentucky Transportation Cabinet, Division of Environmental Analysis (DEA). If such changes result in additional impacts to jurisdictional Waters of the United States, the Contractor will be responsible for coordinating directly with the US Army Corps of Engineers and Kentucky Division of Water to secure the requisite authorization Copies of all correspondence to or from either agency shall be forwarded to DEA Director Danny Peake at 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

The Contractor shall post a copy of this Notice in a conspicuous location at the project site, with unencumbered public access for the duration of the construction.

Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

Rebecca W. Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

April 10, 2024

Mr. Danny Peake
Kentucky Transportation Cabinet (KYTC)
200 Mero St
Frankfort, KY 40622

Re: §401 Water Quality Certification
KY 121 Bridge - Calloway Co
KYTC Bridge Replacement
WQC No: WQC2024-039-1
AI No.: 180972; Activity ID: APE20240001
KYTC Item No.: 1-10100
Blood River
Calloway County, Kentucky

Dear Mr. Danny Peake:

Pursuant to Section 401 of the Clean Water Act (CWA) and 40 CFR 121.7(c), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under a federal license or permit, and the attached conditions are met.

Other permits from the Division of Water may be required for this activity. Projects that disturb one acre or more of land or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land require a Kentucky Pollution Discharge Elimination System (KPDES) Stormwater Permit; contact the Surface Water Permits Branch (502-564-3410 or SWPBSupport@ky.gov). A Groundwater Protection Plan is required if activities listed in Section 2(2) of 401 KAR 5:037 are conducted. A Water Withdrawal Application is required for activities proposing raw water withdrawals of 10,000 gallons per day or more; contact the Watershed Management Branch (502-564-3410).

All future correspondence on this project must reference AI No. **180972**. **The attached document is your official Water Quality Certification; please read it carefully**. Please contact Conner Flora by phone at 502-782-3531 or email at conner.flora@ky.gov if you have any questions.

Sincerely,

Samantha Vogeler

Samantha Vogeler, Supervisor
Water Quality Certification Section
Kentucky Division of Water

SV:CF
Attachment

cc: Andrew Logsdon, KYTC: Frankfort (via email: Andrew.Logsdon@ky.gov)
Dave Harmon, KYTC: Frankfort (via email: Dave.Harmon@ky.gov)
Norma Condra, USACE: Louisville (via email:
Derek Adams, Third Rock Consultants (via email: dadams@thirdrockconsultants.com)
Lee Andrews, USFWS: Frankfort (via email: kentuckyes@fws.gov)
Rhonda Lamb, Four Rivers Basin Coordinator (via email: rlamb@murraystate.edu)
Shannon McLeary, Paducah Regional Office (via email: shannon.mcleary@ky.gov)

KTC Water Quality Certification

KY 121 Bridge - Calloway Co

Facility Requirements

Permit Number: WQC2024-039-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180972 APE20240001:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Kentucky Transportation Cabinet shall notify the Water Quality Certification Project Manager or Supervisor of the scheduled start of construction activities at least two weeks before the start of construction. This condition is necessary for the Division of Water to be informed of the ongoing activity for the purposes of site visits to ensure implementation of Kentucky Regulatory Statutes and Administrative Regulations; the Division will monitor the environment, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
S-2	Kentucky Transportation Cabinet shall notify the Water Quality Certification Project Manager or Supervisor of substantial completion of construction no later than two weeks post-construction. This condition is necessary for the Division of Water to be informed of the ongoing activity for the purposes of site visits to ensure implementation of Kentucky Regulatory Statutes and Administrative Regulations; the Division will monitor the environment, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
S-3	Kentucky Transportation Cabinet shall submit as-built drawings within 90 days after substantial completion of construction to the Water Quality Certification Section Project Manager or Supervisor. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

Narrative Requirements:

Condition No.	Condition
T-1	The work approved by this certification shall be limited to 36.548533, -88.164188: The replacement of KY-121 over Blood River, a perennial resource, will entail complete removal of the existing bridge and construction of a new bridge without load restrictions, the total permanent impacts from this project will be 33 linear feet. All 33 linear feet of impact will be from riprap used to stabilize the banks surrounding the abutments of the bridge. The project will replace the bridge in the same location with generally the same current geometrics (bridge width, length, hydraulic opening, etc.). This condition is necessary to confirm activities approved by this certification. [401 KAR 10:030 Section 1, 401 KAR 9:010 Section 1(a)(2), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification
KY 121 Bridge - Calloway Co
Facility Requirements
Permit Number: WQC2024-039-1
Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180972 APE20240001:

Narrative Requirements:

Condition No.	Condition
T-2	All work performed under this certification shall adhere to the design and specifications set forth in the following document(s): Application for Permit to Construct Across or Along a Stream and/or Water Quality Certification received on 2/5/2024, a Prefilling Meeting Request on 2/5/2024, and a Certification Request on 3/6/2024. 018B00023N_PRIME_KDOW401WQC_PFMR_ENV_SUB.pdf 018B00023N_PRIME_401WQCApplication_ENV_SUB.pdf NOD #1 KY 121 Bridge – Blood River (AI180972_ 01800023N).pdf RE_ NOD #1 KY 121 Bridge – Blood River (AI180972, 01800023N).pdf This condition is necessary to confirm activities approved by this certification. [401 KAR 10:030 Section 1, 401 KAR 9:010 Section 1(a)(2), KRS 224.10-100, KRS 224.70-110]
T-3	Kentucky Transportation Cabinet is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sediment control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-4	No in-stream operations or activities shall be conducted during fish spawning season (April 1 through June 30), due to the potential impacts of increased sediment load and associated water quality and designated aquatic habitat impacts. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 4(1)(c,h), KRS 224.10-100, KRS 224.70-110]
T-5	Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such instream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-6	Erosion and sediment pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification
KY 121 Bridge - Calloway Co
Facility Requirements
Permit Number: WQC2024-039-1
Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180972 APE20240001:

Narrative Requirements:

Condition No.	Condition
T-7	Remove all sediment and erosion control measures after re-vegetation has become well-established. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-8	Any fill or riprap shall be of a composition that shall not cause violations of water quality standards by adversely affecting the biological, chemical, or physical properties of waters of the Commonwealth. If riprap is used, it shall be of a weight and size that bank stress or slump conditions shall not occur. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-9	Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-10	Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse. This condition is necessary to prevent water pollution as prohibited by statute. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-11	To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-12	Removal of existing riparian vegetation shall be restricted to the minimum necessary for project construction. This condition is necessary to minimize negative effects to the environment, protect the use of the stream, and protect aquatic resources. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-13	Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification

KY 121 Bridge - Calloway Co

Facility Requirements

Permit Number: WQC2024-039-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180972 APE20240001:

Narrative Requirements:

Condition No.	Condition
T-14	This Water Quality Certification expires on April 9, 2029. This condition is necessary for the issuance of the certification. [KRS 224.10-100, KRS 224.16-050(2), KRS 224.70-110]
T-15	Other permits from the Division of Water may be required for this activity. If this activity occurs within a floodplain, a Permit to Construct Across or Along a Stream may be required. Please contact the Floodplain Management Section Supervisor (502-564-3410) for more information prior to construction. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) Stormwater Permit shall be required. Please contact the Surface Water Permits Branch (502-564-3410 or SWPBSupport@ky.gov) for more information. A Groundwater Protection Plan is required if any of the activities listed in Section 2(2) of 401 KAR 5:037 are conducted. A Water Withdrawal Application is required for any activities proposing raw water withdrawals of 10,000 gallons per day or more. For technical assistance contact the Watershed Management Branch at 502-564-3410 or visit eec.ky.gov. This condition is necessary for confirm authorized impacts, the appropriate responsible party, monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [KRS 224.10-100, KRS 224.16-050(2), KRS 224.70-110]

NOTICE

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
NATIONWIDE SECTION 404 PERMIT AUTHORIZATION

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
KENTUCKY DIVISION OF WATER
SECTION 401 INDIVIDUAL WATER QUALITY CERTIFICATION

The replacement of KY 121 over Clayton Creek (Bridge 018B00018N) will entail complete removal of the existing bridge and construction of a new bridge without load restrictions. The project will replace the bridge in the same location with generally the same current geometrics (bridge width, length, hydraulic opening, etc.) to avoid environmental impacts, utility impacts, and minimize the need for new right of way. Approach roadway pavement will be replaced in the direct vicinity of the bridge. The bridge will be closed during construction. Traffic will be maintained by constructing a temporary on-site diversion upstream and stream crossing immediately adjacent.

Location	Description of Project Impacts
KY 121 over Clayton Creek at MP 17.45	The proposed project will impact approximately 70 ft (0.04 ac) of Clayton Creek, an intermittent stream approximately 25 ft wide at the KY 121 intersection.

Impacts to jurisdictional Waters of the United States as defined by the US Army Corps of Engineers and surface waters of the Commonwealth defined pursuant to 401 KAR Chapter 10 are authorized under Section 404 Nationwide Permit (NWP) #3 for maintenance associated with the repair, rehabilitation, replacement or removal of any previously authorized, currently serviceable structure or fill.

The Kentucky Division of Water has conditionally certified the use of NWP #3 provided the conditions of the attached Individual Water Quality Certification WQC2024-038-01 are met. One such condition limits the use or operation of heavy equipment within the stream channel. In those instances in which such in-stream work is unavoidable, a work platform or temporary crossing constructed with clean rock and sufficient pipe to allow stream flow to continue, unimpeded, shall be used.

To expedite construction, the Contractor may elect to alter the design, or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the Contractor shall obtain written permission from the Division of Construction and the Kentucky Transportation Cabinet, Division of Environmental Analysis (DEA). If such changes result in additional impacts to jurisdictional Waters of the United States, the Contractor will be responsible for coordinating directly with the US Army Corps of Engineers and Kentucky Division of Water to secure the requisite authorization Copies of all correspondence to or from either agency shall be forwarded to DEA Director Danny Peake at 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

The Contractor shall post a copy of this Notice in a conspicuous location at the project site, with unencumbered public access for the duration of the construction.

Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

Rebecca W. Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

April 10, 2024

Mr. Danny Peake
Kentucky Transportation Cabinet (KYTC)
200 Mero St
Frankfort, KY 40622

Re: §401 Water Quality Certification
KY 121 Bridge - Calloway Co
KYTC Bridge Replacement
WQC No: WQC2024-038-1
AI No.: 180973; Activity ID: APE20240001
KYTC Item No.: 1-10099
Clayton Creek
Calloway County, Kentucky

Dear Mr. Danny Peake:

Pursuant to Section 401 of the Clean Water Act (CWA) and 40 CFR 121.7(c), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under a federal license or permit, and the attached conditions are met.

Other permits from the Division of Water may be required for this activity. Projects that disturb one acre or more of land or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land require a Kentucky Pollution Discharge Elimination System (KPDES) Stormwater Permit; contact the Surface Water Permits Branch (502-564-3410 or SWPBSupport@ky.gov). A Groundwater Protection Plan is required if activities listed in Section 2(2) of 401 KAR 5:037 are conducted. A Water Withdrawal Application is required for activities proposing raw water withdrawals of 10,000 gallons per day or more; contact the Watershed Management Branch (502-564-3410).

All future correspondence on this project must reference AI No. **180973**. **The attached document is your official Water Quality Certification; please read it carefully**. Please contact Conner Flora by phone at 502-782-3531 or email at conner.flora@ky.gov if you have any questions.

Sincerely,

Samantha Vogeler

Samantha Vogeler, Supervisor
Water Quality Certification Section
Kentucky Division of Water

SV:CF
Attachment

cc: Andrew Logsdon, KYTC: Frankfort (via email: Andrew.Logsdon@ky.gov)
Dave Harmon, KYTC: Frankfort (via email: Dave.Harmon@ky.gov)
Norma Condra, USACE: Louisville (via email:
Derek Adams, Third Rock Consultants (via email: dadams@thirdrockconsultants.com)
Lee Andrews, USFWS: Frankfort (via email: kentuckyes@fws.gov)
Rhonda Lamb, Four Rivers Basin Coordinator (via email: rlamb@murraystate.edu)
Shannon McLeary, Paducah Regional Office (via email: shannon.mcleary@ky.gov)

KTC Water Quality Certification

KY 121 Bridge - Calloway Co

Facility Requirements

Permit Number: WQC2024-038-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180973 APE20240001:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Kentucky Transportation Cabinet shall notify the Water Quality Certification Project Manager or Supervisor of the scheduled start of construction activities at least two weeks before the start of construction. This condition is necessary for the Division of Water to be informed of the ongoing activity for the purposes of site visits to ensure implementation of Kentucky Regulatory Statutes and Administrative Regulations; the Division will monitor the environment, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
S-2	Kentucky Transportation Cabinet shall notify the Water Quality Certification Project Manager or Supervisor of substantial completion of construction no later than two weeks post-construction. This condition is necessary for the Division of Water to be informed of the ongoing activity for the purposes of site visits to ensure implementation of Kentucky Regulatory Statutes and Administrative Regulations; the Division will monitor the environment, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
S-3	Kentucky Transportation Cabinet shall submit as-built drawings within 90 days after substantial completion of construction to the Water Quality Certification Section Project Manager or Supervisor. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

Narrative Requirements:

Condition No.	Condition
T-1	The work approved by this certification shall be limited to 36.580548, -88.252986: The replacement of KY-121 over Clayton Creek, a perennial stream, will entail complete removal of the existing bridge and construction of a new bridge without load restrictions, impacting a total of 70 linear feet. All impacts associated with this project will be from concrete for the structure of the bridge or riprap to stabilize the banks. The project will replace the bridge in the same location with generally the same current geometrics (bridge width, length, hydraulic opening, etc.). This condition is necessary to confirm activities approved by this certification. [401 KAR 10:030 Section 1, 401 KAR 9:010 Section 1(a)(2), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification

KY 121 Bridge - Calloway Co

Facility Requirements

Permit Number: WQC2024-038-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180973 APE20240001:

Narrative Requirements:

Condition No.	Condition
T-2	All work performed under this certification shall adhere to the design and specifications set forth in the following document(s): Application for Permit to Construct Across or Along a Stream and/or Water Quality Certification received on 2/5/2024, a Pre-Filling Meeting Request 2/5/2024, and a Certification Request 3/7/2024. 018B00018N_PRIME_KDOW401WQC_PFMR_ENV_SUB.pdf 018B00018N_PRIME_401WQCApplication_ENV_SUB.pdf NOD #1 KY 121 Bridge – Clayton Creek (AI180973_ 018B00018N).pdf RE_ NOD #1 KY 121 Bridge – Clayton Creek.pdf This condition is necessary to confirm activities approved by this certification. [401 KAR 10:030 Section 1, 401 KAR 9:010 Section 1(a)(2), KRS 224.10-100, KRS 224.70-110]
T-3	Kentucky Transportation Cabinet is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sediment control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-4	No in-stream operations or activities shall be conducted during fish spawning season (April 1 through June 30), due to the potential impacts of increased sediment load and associated water quality and designated aquatic habitat impacts. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 4(1)(c,h), KRS 224.10-100, KRS 224.70-110]
T-5	Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such instream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification

KY 121 Bridge - Calloway Co

Facility Requirements

Permit Number: WQC2024-038-1

Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180973 APE20240001:

Narrative Requirements:

Condition No.	Condition
T-6	Erosion and sediment pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-7	Remove all sediment and erosion control measures after re-vegetation has become well-established. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-8	Any fill or riprap shall be of a composition that shall not cause violations of water quality standards by adversely affecting the biological, chemical, or physical properties of waters of the Commonwealth. If riprap is used, it shall be of a weight and size that bank stress or slump conditions shall not occur. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-9	Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-10	Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse. This condition is necessary to prevent water pollution as prohibited by statute. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-11	To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow. This condition is necessary to prevent and minimize objectionable deposits and pollution and protect the use of the stream. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-12	Removal of existing riparian vegetation shall be restricted to the minimum necessary for project construction. This condition is necessary to minimize negative effects to the environment, protect the use of the stream, and protect aquatic resources. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]

KTC Water Quality Certification
KY 121 Bridge - Calloway Co
Facility Requirements
Permit Number: WQC2024-038-1
Activity ID No.:APE20240001

ACTV0000000001 (KYTC Bridge Replacement) AI: 180973 APE20240001:

Narrative Requirements:

Condition No.	Condition
T-13	Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380. This condition is necessary to monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [401 KAR 10:030 Section 1, 401 KAR 10:031 Section 2(1)(a), KRS 224.10-100, KRS 224.70-110]
T-14	This Water Quality Certification expires on April 9, 2029. This condition is necessary for the issuance of the certification. [KRS 224.10-100, KRS 224.16-050(2), KRS 224.70-110]
T-15	Other permits from the Division of Water may be required for this activity. If this activity occurs within a floodplain, a Permit to Construct Across or Along a Stream may be required. Please contact the Floodplain Management Section Supervisor (502-564-3410) for more information prior to construction. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) Stormwater Permit shall be required. Please contact the Surface Water Permits Branch (502-564-3410 or SWPBSupport@ky.gov) for more information. A Groundwater Protection Plan is required if any of the activities listed in Section 2(2) of 401 KAR 5:037 are conducted. A Water Withdrawal Application is required for any activities proposing raw water withdrawals of 10,000 gallons per day or more. For technical assistance contact the Watershed Management Branch at 502-564-3410 or visit eec.ky.gov. This condition is necessary for confirm authorized impacts, the appropriate responsible party, monitor the aquatic resources, minimize impact to aquatic resources, protect the use and designation of resources, allow more effective and efficient control practices, identify changes and conditions in ecological systems as a result of activities, and to warn of emergency conditions. [KRS 224.10-100, KRS 224.16-050(2), KRS 224.70-110]

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
500 SOUTH 17TH STREET | PADUCAH, KY 42003

MEMORANDUM

TO: Michael Carpenter, P.E.
Director
Division of Structural Design / Geotechnical Branch
Kentucky Transportation Cabinet
1236 Wilkinson Boulevard
Frankfort, Kentucky 40601

FROM: Christopher N. Farmer, P.E. (Consultant)
Principal Geotechnical Engineer
Bacon Farmer Workman Engineering & Testing, Inc. (BFW)
500 South 17th Street
Paducah, Kentucky 42001

DATE: February 23, 2023

SUBJECT: **Calloway County**
D1 018B00018N
Item No. 1-10099
KY 121
Bridge Over Clayton Creek
Geotechnical Engineering Structure Foundation Report

1.0 Location and Description

The project is located on KY 121 over a branch of Clayton Creek, approximately 3.29 miles southeast of Murray, Calloway County, Kentucky. The bridge is being replaced as part of the KYTC SW Bridge Delivery Program. The proposed bridge is a three-span structure constructed using PPC Box Beams with a length of 129'-6" (out to out), a bridge width of 24'-0" on a 0˚ skew right. The bridge will be supported by piles with two integral end bents and 2 intermediate pile bents.

2.0 Site Geologic Conditions

The bridge is located within the Hazel, KY Geologic and Topographic Quadrangle (GQ #203). Geologic mapping of the bridge location shows the geologic strata composed of water deposited alluvium which consists of sands, silts, silty clays, and gravels locally cemented with iron oxides. The Natural Resources Conservation Service (NRCS) Soil map classifies the surface soils at the bridge location as Collins-Iuka complex.

3.0 Field Investigation

Subsurface drilling was conducted by Bacon Farmer Workman Engineering & Testing, Inc. (BFW) from December 6th to 9th, 2022. Two borings, B-1001 (Station 108+44.10, 16.75' LT) and B-1002 (Station 107+29.83', 17.33 LT) were advanced near each proposed Integral End Bents. The

borings were advanced to depths of 101.5 feet (Elevation 397.11) and 81.5 feet (Elevation 424.48) for B-1001 and B-1002, respectively. Soil samples were collected during the drilling activities and were delivered to and analyzed by BFW's in-house soil laboratory.

4.0 Laboratory Testing

Alluvial soils were encountered during drilling activities and consisted of layered and intermixed inorganic low plasticity silty clayey sand with gravel, silty clayey gravel with sand, well graded gravel with silt and sand, poorly to well graded sand with silt, well graded gravel with silt and sand, silty sand, and poorly graded sand with silt. Soil samples were collected during drilling activities and were taken to BFW's inhouse laboratory for classification.

Based on laboratory results, soils were classified as ML, SP, SC-SM, SP-SC, SM, SW-SM, SP-SM, and GW-GM using the Unified Soil Classification System and A-1-a, A-1-b, A-2-4, A-3, and A-4 using the AASHTO Classification Method.

5.0 Subsurface Conditions

Soil samples collected at each location were similar between the two borings. Below surface organics, silty clayey sands with gravels to silty clayey gravels with sands were encountered to a depth of 5 to 7.5 feet. Below the upper clayey sands and silty clays, the soil transitioned to a mixture of dense to very dense, poor to well graded sands, silty sands to silty gravels to depths of approximately 15 to 25 feet. The silty sands and silty gravels continued with dense to very dense consistencies. Evidence of iron oxides and cemented sands were encountered throughout the soil column. The sands continued with depth varying in silt content with some gravels to boring termination depth of 81.5 feet below ground surface (bgs) in boring, B-1002. The dense to very dense sands with varying silt contents continued with depth in boring, B-1001 to a depth of approximately 87 feet where the soil transitioned to a firm to dense silt. The silts continued to boring termination depth of 101.5 feet bgs.

Groundwater levels ranged from approximately 15 to 20 feet Elev. 485 – 483 at 2 days after drilling.

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

6.1 Embankments and Settlement – Since little to no fill will be placed for the bridge replacement, slope stability and settlement are not of geotechnical concern. Embankment slopes are to be constructed at slopes the same as currently in existence or 2H:1V, whichever is flatter. If a slope steeper than 2H:1V is required, please contact BFW for further assistance and recommendations.

6.2 Integral End Bents 1 and 2 and Intermediate Pile Bents 1 and 2 – The use of HP 14x89 are recommended as friction piles at both the Integral End Bent and Intermediate Pile Bent locations. According to the **KYTC Bridge Program Project Delivery Manual** the use of H-piles is preferred over pipe piles. Additionally, the use of pipe piles is not recommended due to the presence of very dense sand and gravel layers that would cause driving problems. LRFD Factored Pile Capacities are shown on the pile capacity tables included in the attachments to this report. Capacities may be linearly interpolated between the five-foot intervals presented in the tables. If base of pile cap varies from the elevation used for the capacity tables base of pile cap by more

than 5 feet, contact BFW Engineering for re-evaluation of the capacities. **H-piles used as friction piles should not include pile points as this will result in loss of side friction as the piles are being driven**.

Piles should be installed with a center-to-center spacing of three (3) times the pile diameter or greater in order to optimize group resistance and minimize installation problems. If spacing less than three diameters are needed, please contact BFW Engineering for capacity reduction factors.

Please note that the Total Factored Geotechnical Axial Resistance from the charts may not exceed the Maximum Nominal Geotechnical Axial Capacity of the pile. We recommend using a resistance factor (Φ_c) of 0.6 to determine the Maximum Nominal Geotechnical Axial Capacity of the pile, which results in a maximum of 783 kips for 14x89 piles.

6.3 **Scour** – BFW conducted grain size analysis of samples collected during drilling activities. Grain size information was provided to WSP so that scour depths could be evaluated. The results of the scour analysis is presented in Table 1 below.

Local abutment scour is to be resisted by appropriate slope protection. According to KYTC Drainage Manual - DR 804-11, abutment scour can be mitigated by the use of countermeasures (Cyclopean Stone Rip Rap) for slope protection. Pile foundations at the piers must be designed for local and contraction scour conditions.

Table 1

Scour Analysis Summary			
Substructure	**Total (ft)**	**Local (ft)**	**Contraction (ft)**
End Bent 1	5.63	4.48	1.15
Intermediate Pile Bent 1 & 2	9.71	8.56	1.15
End Bent 2	5.63	4.48	1.15

To design for the above scour estimates, the piles can either be designed to withstand the potential unsupported length, the pile cap can be set down to that depth to avoid any unsupported length, or a combination of these measures can be employed. The pile capacity tables provided at the end of this report have already considered the effects of scour on the pile bearing capacities.

6.4 **Slope Protection** – Slope protection will be required at the bridge meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridge Construction, current edition. Place a Class 1, Geotextile Fabric, in accordance with Sections 214 & 843 of the Standard Specification for Road and Bridge Construction, current edition, between the embankment and the slope protections.

6.5 **Wave Equation Analysis -** Drivability analyses were performed for the piles at this locations assuming 14x89, 50-ksi steel H-piles. These analyses indicated that a sufficient range of single acting diesel hammers are available to install the piles to the required depth without excessive blow counts or overstressing the piles. Drivability studies were performed assuming continuous driving. If interruptions in driving individual piles should occur, difficulties in continuing the installation process will likely occur due to pile "set-up" characteristics.

6.6 **Verification of Piles Capacities** – Based on the **KYTC Bridge Program Project Delivery Manual** the construction control of friction piles will use the FHWA Modified Gates Formula. Therefore, it is recommended that field verification of pile capacity should be performed using the FHWA Modified Gates Formula instead of the formulas provided in the Standard Specifications. The field verification values for End of Driving (EOD) using the Modified Gates Formula are provided under the Static Analysis Method columns of the LRFD Pile Capacity Tables for friction piles located in the attachments to this report.

6.7 **Seismic Site Class Definition** – The seismic design procedures outlined in the current AASHTO LRFD Bridge Design Specification indicates that structural design loads are to be based on site class definitions developed from the subsurface condition encountered. Based on the results of the exploration and geology of the area, a site class of D, as per Table 3.10.3.1.1 – Site Class Definitions, should be used for design purposes.

6.8 **Minimum Pile Lengths** – It is recommended that the structural designer include minimum required pile lengths or tip elevations required to satisfy pile lateral stability on the project plans. It is also recommended that factored uplift design loads, if applicable, be included in the pile record table. Since final pile lengths or tip elevations will be adjusted in the field based on field verification of axial capacity, this information will be used during construction to help ensure that adequate pile embedment and capacities are obtained, and pile lengths are not based on compressive axial capacity alone.

6.9 **Lateral Loads** – Perform lateral load analysis using the geotechnical parameters provided in the attached Idealized Soil Profiles. These parameters may be used to perform analysis using LPILE or other similar software. Some of the parameters may not be required to input depending on the version of software used.

7.0 Plan Notes

The following notes should be included at the appropriate locations in the plans.

7.1 HAMMER CRITERIA: Single acting diesel hammers with rated energies of 60 kip-ft to 80 kips-ft is recommended for HP 14 x 89 to adequately drive the piles at End Bents without encountering excessive blow counts or overstressing the piles. The use of hammers other than single acting diesel may require different rated energies. The Contractor shall submit the proposed pile driving system to the Department for approval prior to the installation of the first pile. Approval of the pile driving system by the Engineer will be subject to satisfactory field performance of the pile driving procedures.

7.2 Embankments at the bridge end bent locations shall be constructed in accordance with Special Provision 69 Embankment at Bridge End Bent Structures.

7.3 Slope protection will be required at the bridge meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridges Construction, current edition. Place Geotextile Fabric, in accordance with Section 843 of the Standard Specifications for Road and Bridge Construction, current edition, between the embankment and the slope protection.

7.4 Cofferdams and/or dewatering methods may be required to facilitate foundation construction.

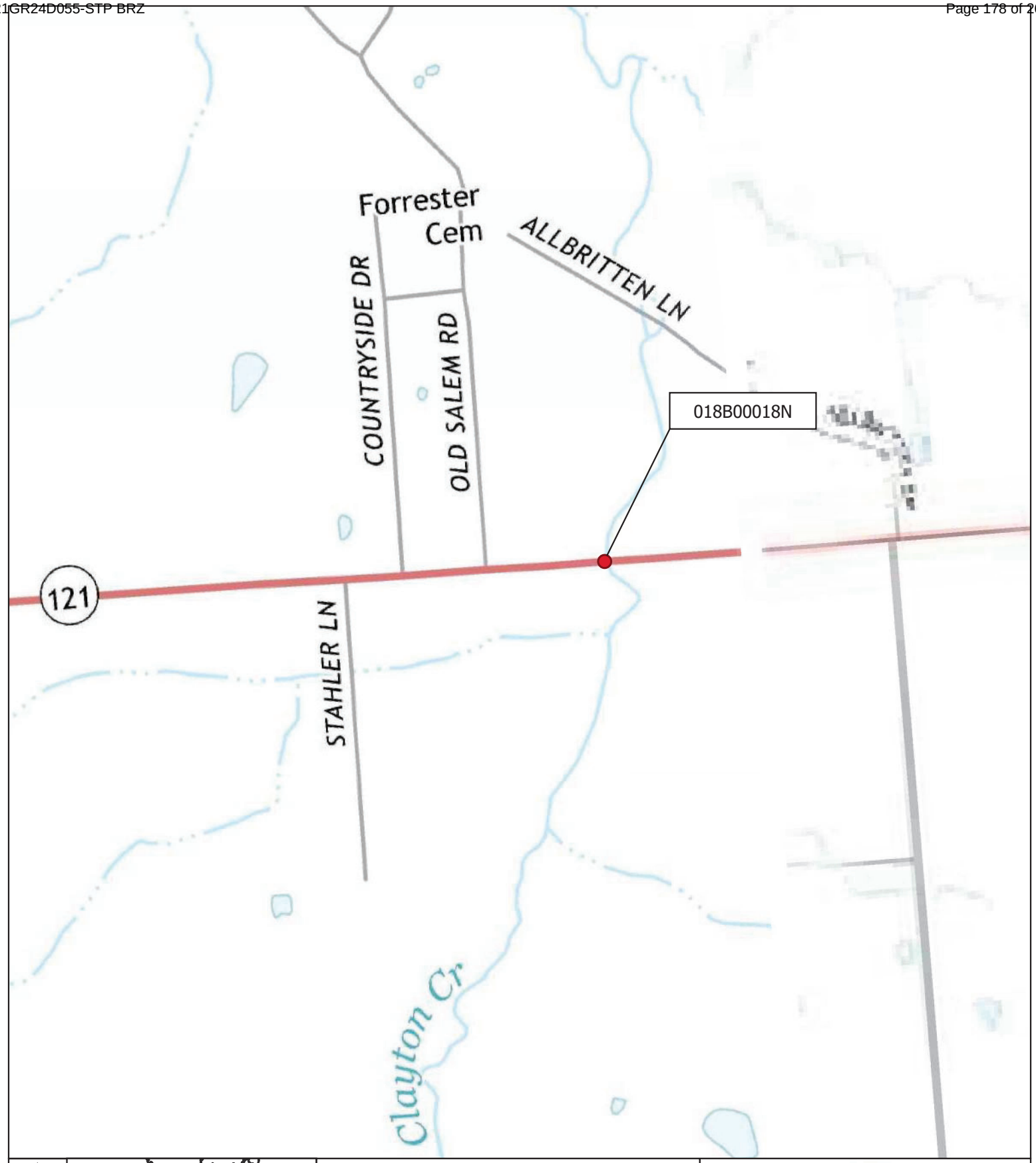
7.5 Temporary shoring or sheeting may be required to facilitate construction.

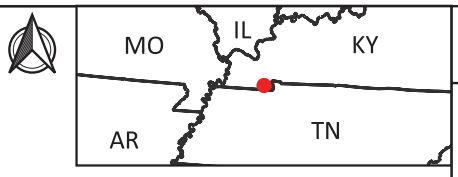
7.6 Field verification of pile capacity shall be performed using the FHWA Modified Gates Formula instead of the formulas provided in the Standard Specifications for Road and Bridge Construction.

Should there be any questions, please contact BFW at (270) 443-1995 for further recommendations.

Attachments:

- **Project Location Map**
- **Bridge Layout Sheet with Boring Locations**
- **Subsurface Data Sheet**
- **Pile Capacity Tables**
- **Idealized Soil Profile Sheets for Lateral Pile Analysis**
- **Coordinate Data Sheet**





0 800 1,600 ft

1 inch : 833 feet

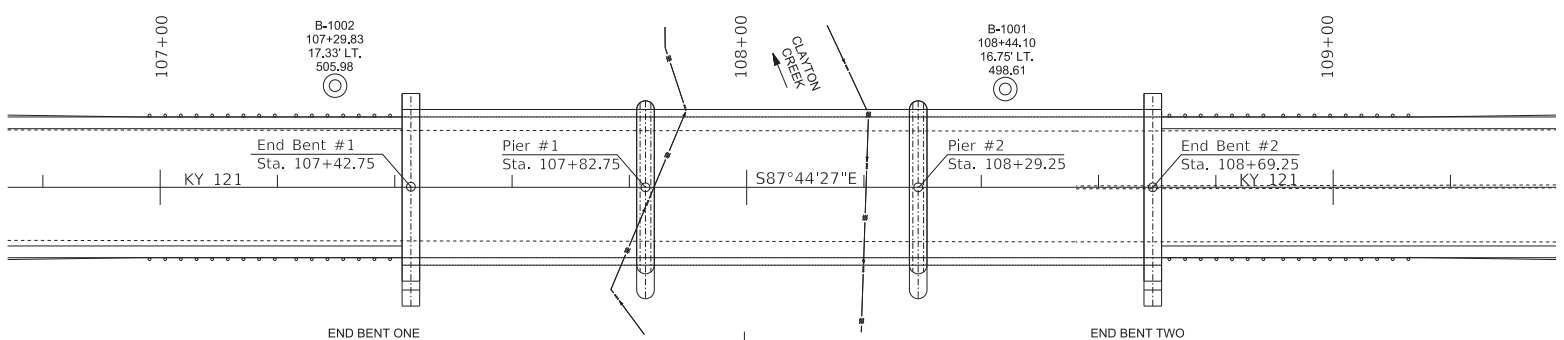
KY-121 Over Clayton Creek

36.5805079, -88.2530335
Calloway County, KY

Project Number:	Drafted/Checked:	Date:
22349 - 10099	HK/CF	2022-12-22

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
500 SOUTH 17TH STREET
PADUCAH, KY 42003

SUBSURFACE DATA



Profile Scale:
Vertical 1"=10'
Horizontal not to scale

END BENT ONE
APPROXIMATE ROADWAY GRADE ELEV. = 508.44

END BENT TWO
APPROXIMATE ROADWAY GRADE ELEV. = 508.76

(Sea level datum)
Hole No.
Station
Offset
Elev.

B-1002
107+29.83
17.33' LT.
505.98

D_{50} (mm)	w%	LI		
			N=3	
0.106	24.6	1.3	N=2	A-4, GC-GM, S+C=47(41+6)
2.58	18.1	NP	N=1	A-1-a, SW-SM, S+C=8(7+1)
2.15	11.5	NP	N=57	A-1-a, SP-SM, S+C=5(1+4)
2.04	17.2	NP	N=50+/0.4	A-1-a, SW-SM, S+C=9(5+4)
3.57	14.3	NP	N=77 / N=55	A-1-a, SP, S+C=5(4+1)
3.38	15.1	NP	N=64	A-1-a, SW-SM, S+C=7(6+1)
4.99	21.4	NP	N=50+/0.5	A-1-a, GW-GM, S+C=9(6+3)
0.187	19.8	NP	N=50+/0.5	A-3, SP-SM, S+C=7(5+2)
0.153	22.8	NP	N=13 / N=7 / N=24 / N=52 / N=39 / N=52	A-2-4, SM, S+C=16(14+2)
0.173	26.4	NP	N=50+/0.5 / N=50+/0.5	A-3, SP-SM, S+C=8(6+2)

N.R.
(424.48)

B-1001
108+44.10
16.75' LT.
498.61

D_{50} (mm)	w%	LI		
1.30	10.3	-1.5	N=55	A-2-4, SC-SM, S+C=20(17+3)
2.61	13.9	-0.84	N=72	A-1-a, SP-SC, S+C=8(4+4)
1.42	17.5	NP	N=84 / N=50+	A-1-b, SW-SM, S+C=5(4+1)
2.32	11.3	NP	N=50+	A-1-b, SP-SM, S+C=5(4+1)
1.70	13.4	NP	N=35	A-1-a, GW-GM, S+C=6(5+1)
6.07	15.8	NP	N=62	A-1-a, SW-SM, S+C=10(7+3)
0.160	24.0	NP	N=93 / N=17 / N=31 / N=16 / N=15 / N=21 / N=21	A-2-4, SM, S+C=14(12+2)
0.170	24.1	NP	N=65 / N=72 / N=23	A-3, SP-SM, S+C=7(5+2)
0.162	27.9	NP	N=56	A-2-4, SP-SM, S+C=11(7+4)
0.163	31.7	NP	N=41	A-3, SP-SM, S+C=10(5+5)
0.015	22.9	NP	N=35 / N=20	A-4, ML, S+C=71(47+24)
			N=50+	No Recovery

N.R.
(397.11)

510 500 490 480 470 460 450 440 430 420 410 400 390

Datum

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SUBSURFACE DATA FOR KY 121 OVER CLAYTON CREEK

HORIZONTAL SCALE
SCALE: N.T.S.

ITEM NO. 1-10099
COUNTY OF CALLOWAY
SHEET NO. S3

OpenRoads Designer v10.16.2.267
USER: bvollmer
FILE NAME: C:\BMS\WSP-US-PW-02\D0560876\000_0018N_SUBSURFACE _DATA.DGN

LRFD Pile Capacities (For Friction Piles)

Integral End Bent 1

County: Calloway
Location: KY - 121 Over Clayton Creek
Item #: 1-10099

Date: 1/16/2023
Pile Size: HP 14X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **502.9 ft**
Finished Grade Elevation: **508.4 ft**
Original Groundline Elevation: **506.0 ft**

								Static Analysis Method				Dynamic Testing Method						Uplift	
			Nominal Side Resistance		Nominal End Bearing		R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	503	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
20	483	cohesionless	49	24	13	6	62	31	28	14	70	35	41	20	56.0	27	62.4	31	17	9
25	478	cohesionless	79	39	13	6	92	46	41	21	104	51	60	29	85.7	42	92.1	46	28	14
30	473	cohesionless	111	55	9	4	120	60	54	27	135	67	78	39	111.7	55	120.2	60	39	20
35	468	cohesionless	149	74	20	9	168	84	76	38	189	94	109	54	157.7	78	168.4	84	52	26
40	463	cohesionless	190	95	9	4	199	99	90	45	224	112	130	64	186.2	93	199.4	100	67	34
45	458	cohesionless	227	113	2	1	229	114	103	52	258	128	149	74	209.9	104	229.3	115	79	40
50	238	cohesionless	260	129	2	1	262	130	118	59	295	147	170	85	237.2	118	261.7	131	91	46
55	448	cohesionless	298	148	6	2	304	151	137	69	342	170	197	98	272.5	136	303.7	152	104	52
60	443	cohesionless	343	171	6	2	349	174	157	79	393	196	227	113	310.6	155	349.3	175	120	60
65	438	cohesionless	392	195	6	2	398	198	179	90	448	223	259	129	351.0	175	397.9	199	137	69
70	433	cohesionless	449	224	13	6	463	231	208	104	521	260	301	150	406.3	203	462.8	231	157	79
75	428	cohesionless	514	257	13	6	528	263	238	119	594	296	343	171	460.5	230	527.8	264	180	90
80	423	cohesionless	583	291	13	6	596	298	268	134	671	335	388	193	517.7	258	596.5	298	204	102

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn => \Sigma\eta_i\gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

Integral End Bent 2

County: Calloway
Location: KY - 121 Over Clayton Creek
Item #: 1-10099

Date: 1/16/2023
Pile Size: HP 14X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **503.2 ft**
Finished Grade Elevation: **508.7 ft**
Original Groundline Elevation: **498.6 ft**

								Static Analysis Method				Dynamic Testing Method						Uplift	
							R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing															
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	503	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
20	483	cohesionless	60	30	6	2	66	33	30	15	75	37	43	21	57.3	28	66.3	33	21	11
25	478	cohesionless	90	44	13	6	103	51	46	23	116	57	67	33	90.6	45	102.9	51	31	16
30	473	cohesionless	126	62	20	9	145	72	65	33	164	81	95	47	127.1	63	145.4	73	44	22
35	468	cohesionless	158	78	2	1	160	80	72	36	180	90	104	52	136.6	68	160.3	80	55	28
40	463	cohesionless	190	95	6	2	196	97	88	44	220	110	127	63	167.0	83	196.0	98	67	34
45	458	cohesionless	223	111	2	1	226	112	102	51	254	126	147	73	191.2	95	225.8	113	78	39
50	238	cohesionless	256	128	2	1	259	129	116	58	291	145	168	84	218.6	109	258.7	129	90	45
55	448	cohesionless	296	148	6	2	302	151	136	68	340	170	196	98	255.5	127	302.2	151	104	52
60	443	cohesionless	342	171	6	2	348	174	157	79	392	195	226	113	293.8	146	348.2	174	120	60
65	438	cohesionless	397	198	13	6	410	205	185	93	461	230	267	133	352.6	176	410.2	205	139	70
70	433	cohesionless	459	229	13	6	472	235	212	106	531	265	307	153	414.4	207	472.0	236	161	81
75	428	cohesionless	514	257	4	1	518	259	233	117	583	291	337	168	455.6	227	518.2	259	180	90
80	423	cohesionless	573	286	13	6	587	293	264	132	660	329	381	190	514.2	257	586.6	293	201	101
85	418	cohesionless	645	322	13	6	659	329	296	148	741	370	428	214	574.2	287	658.6	329	226	113
90	413	cohesionless	716	357	6	2	722	360	325	163	812	406	469	234	629.9	314	721.8	361	251	126
95	408	cohesionless	782	391	6	2	788	393	355	178	886	443	512	256	696.1	348	788.0	394	274	137

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn => \Sigma\eta_i\gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

Intermediate Pile Bents 1 & 2

County: Calloway
Location: KY - 121 Over Clayton Creek
Item #: 1-10099

Date: 1/16/2023
Pile Size: HP 14X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **503.2 ft**
Finished Grade Elevation: **498.0 ft**
Original Groundline Elevation: **498.6 ft**

								Static Analysis Method				Dynamic Testing Method						Uplift	
			Nominal Side Resistance		Nominal End Bearing		R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	503	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
20	483	cohesionless	34	16	6	2	40	19	18	9	45	22	26	12	57.3	28	66.3	33	12	6
25	478	cohesionless	63	31	13	6	76	38	34	17	86	42	50	24	90.6	45	102.9	51	22	11
30	473	cohesionless	99	49	20	9	119	59	54	27	134	66	77	38	127.1	63	145.4	73	35	18
35	468	cohesionless	131	65	2	1	134	66	60	30	151	75	87	43	136.6	68	160.3	80	46	23
40	463	cohesionless	164	81	6	2	170	84	76	38	191	95	110	55	167.0	83	196.0	98	57	29
45	458	cohesionless	197	98	2	1	199	99	90	45	224	112	130	64	191.2	95	225.8	113	69	35
50	238	cohesionless	230	114	2	1	232	116	104	52	261	130	151	75	218.6	109	258.7	129	80	40
55	448	cohesionless	270	134	6	2	276	137	124	62	310	155	179	89	255.5	127	302.2	151	94	47
60	443	cohesionless	316	157	6	2	322	160	145	73	362	180	209	104	293.8	146	348.2	174	111	56
65	438	cohesionless	370	185	13	6	384	191	173	87	432	215	249	124	352.6	176	410.2	205	130	65
70	433	cohesionless	432	216	13	6	446	222	200	100	501	250	290	144	414.4	207	472.0	236	151	76
75	428	cohesionless	488	243	4	1	492	245	221	111	553	276	320	159	455.6	227	518.2	259	171	86
80	423	cohesionless	547	273	13	6	560	280	252	126	630	315	364	182	514.2	257	586.6	293	191	96
85	418	cohesionless	619	309	13	6	632	316	284	142	711	355	411	205	574.2	287	658.6	329	217	109
90	413	cohesionless	689	344	6	2	695	347	313	157	782	391	452	225	629.9	314	721.8	361	241	121
95	408	cohesionless	756	377	6	2	762	380	343	172	857	428	495	247	696.1	348	788.0	394	264	132

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn => \Sigma\eta_i\gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

Idealized Soil Profile

Calloway County

Item No: 1-10099 **Bridge ID:** 018B00018N

KY-121 Over Clayton Creek

(Integral End Bent 1)

Elevation (approx.)	Strata	Parameters for Lateral Load Analysis (L-Pile)
505 ft	Sand Soft/Loose - Clayey, Gravelly Sand	Unit Weight (pcf): 115.0 Friction Angle (deg): 28 Soil Modulus (static), k (pci): 25
497 ft		
Water Elev. 483 (approx.)	Sand (Dense Sands)	Unit Weight (pcf): 118.0 Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 33 Soil Modulus (static), k (pci): 125
473 ft		
	Sand (Dense – Gravel/Sands)	Effective Unit Weight (pcf): 62.6 Friction Angle (deg): 35 Soil Modulus (static), submerged, k (pci): 125
467 ft		
	Sand (Dense Sands)	Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 33 Soil Modulus (static), k (pci): 125
462 ft		
	Sand (Firm Sands)	Effective Unit Weight (pcf): 49.6 Friction Angle (deg): 32 Soil Modulus (static), k (pci): 80
452 ft		
	Sand (Dense Sands)	Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 34 Soil Modulus (static), k (pci): 125
424.5 ft	Termination of Boring (81.5')	

Elevations are approximate

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Idealized Soil Profile

Calloway County

Item No: 1-10099 **Bridge ID:** 018B00018N

KY-121 Over Clayton Creek

(Integral End Bent 2)

Elevation (approx.)	Strata	Parameters for Lateral Load Analysis (L-Pile)
503 ft	Sand (Soft/Loose - Clayey, Gravelly Sand (Assumed from Boring 1002 drilled on embankment)	Unit Weight (pcf): 115.0 Friction Angle (deg): 28 Soil Modulus (static), k (pci):25
498 ft	Sand (Dense - Clayey, Silty Sand)	Unit Weight (pcf): 115.0 Friction Angle (deg): 30 Soil Modulus (static), k (pci): 225
491 ft	Sand (Dense Sands)	Unit Weight (pcf): 118.0 Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 33 Soil Modulus (static), k (pci): 125
Water Elev. 485 (approx.)		
483 ft	Sand (Dense – Gravel/Sands)	Effective Unit Weight (pcf): 62.6 Friction Angle (deg): 35 Soil Modulus (static), submerged, k (pci): 125
475 ft	Sand (Dense Sands)	Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 33 Soil Modulus (static), k (pci): 130
465 ft	Sand (Firm Sands)	Effective Unit Weight (pcf): 49.6 Friction Angle (deg): 32 Soil Modulus (static), k (pci): 80
436 ft	Sand (Dense Sands)	Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 34 Soil Modulus (static), k (pci): 125
411 ft	Silt (Very Stiff to Hard)	Effective Unit Weight (pcf): 57.6 Undrained Cohesion, c (psf): 1000 Friction Angle, (Deg): 31 Strain Factor E50: 0.005 Soil Modulus (static), k (pci): 1000 Soil Modulus (cyclic), k (pci): 750
397.5 ft	Termination of Boring (100.5')	

ft

Elevations are approximate

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

Idealized Soil Profile

Calloway County

Item No: 1-10099 **Bridge ID:** 018B00018N

KY-121 Over Clayton Creek

(Intermediate Pile Bents 1 & 2)

Elevation (approx.)	Strata	Parameters for Lateral Load Analysis (L-Pile)
498 ft	Sand (Dense - Clayey, Silty Sand)	Unit Weight (pcf): 115.0 Friction Angle (deg): 30 Soil Modulus (static), k (pci): 225
491 ft	Sand (Dense Sands) Water Elev. 485 (approx.)	Unit Weight (pcf): 118.0 Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 33 Soil Modulus (static), k (pci): 125
483 ft	Sand (Dense – Gravel/Sands)	Effective Unit Weight (pcf): 62.6 Friction Angle (deg): 35 Soil Modulus (static), submerged, k (pci): 125
475 ft	Sand (Dense Sands)	Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 33 Soil Modulus (static), k (pci): 130
465 ft	Sand (Firm Sands)	Effective Unit Weight (pcf): 49.6 Friction Angle (deg): 32 Soil Modulus (static), k (pci): 80
436 ft	Sand (Dense Sands)	Effective Unit Weight (pcf): 55.6 Friction Angle (deg): 34 Soil Modulus (static), k (pci): 125
411 ft	Silt (Very Stiff to Hard)	Effective Unit Weight (pcf): 57.6 Undrained Cohesion, c (psf): 1000 Friction Angle, (Deg): 31 Strain Factor E50: 0.005 Soil Modulus (static), k (pci): 1000 Soil Modulus (cyclic), k (pci): 750
397.5 ft	Termination of Boring (100.5')	

Elevations are approximate

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

COORDINATE DATA SUBMISSION FORM
KYTC DIVISION OF STRUCTURAL DESIGN - GEOTECHNICAL BRANCH

County Calloway Date 1/19/2023

Road Number KY 121

Survey Crew / Consultant BFW

Contact Person Chris Farmer

Item # 01-10099

Mars#

Project #

Notes:

(circle one)
Elevation Datum **NAVD88** **Assumed**

HOLE NUMBER	LATITUDE (Decimal Degrees)	LONGITUDE (Decimal Degrees)	HOLE NUMBER	STATION	OFFSET	ELEVATION (FT)
3 - SPAN BRIDGE - KY 121 OVER CLAYTON CREEK						
1001	36.5805397°N	88.2528743°W	1001	108+44.10	16.75' LT.	498.61
1002	36.5805452°N	88.2532633°W	1002	107+29.83	17.33' LT.	505.98

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
500 SOUTH 17TH STREET | PADUCAH, KY 42003

MEMORANDUM

TO: Michael Carpenter, P.E.
Director
Division of Structural Design / Geotechnical Branch
Kentucky Transportation Cabinet
1236 Wilkinson Boulevard
Frankfort, Kentucky 40601

FROM: Christopher N. Farmer, P.E. (Consultant)
Principal Geotechnical Engineer
Bacon Farmer Workman Engineering & Testing, Inc. (BFW)
500 South 17th Street
Paducah, Kentucky 42001

DATE: September 25, 2023

SUBJECT: **Calloway County**
D1 018B00023N
Item No. 1-10100
KY 121
Bridge Over Blood River
Geotechnical Engineering Structure Foundation Report

1.0 Location and Description

The project is located on KY 121 over Blood River, approximately 8.6 miles southeast of Murray, Calloway County, Kentucky. The bridge is being replaced as part of the KYTC SW Bridge Delivery Program. The proposed bridge is a five-span structure constructed using PPC Box Beams with a length of 328'-0" (out to out), a bridge width of 32'-10½" on a 0˚ skew. The bridge will be supported by two pile supported integral end bents and four intermediate pile bents.

2.0 Site Geologic Conditions

The bridge is located within the New Concord and part of the Buchanan, KY Geologic and Topographic Quadrangles (GQ #313). Geologic mapping of the bridge location shows the geologic strata composed of water deposited alluvium which consists of silts, sands, gravels, and silty clays which is underlain by the McNairy and Clayton Formation. Continental deposits are comprised of sandstones, siltstones, shales, coal, and limestone. The McNairy and Clayton Formations are comprised of sands, clays, and gravels. The Natural Resources Conservation Service (NRCS) Soil map classifies the surface soils at the bridge location as Chenneby, Enville and Arkabutla silt loams.

3.0 Field Investigation

Subsurface drilling was conducted by Bacon Farmer Workman Engineering & Testing, Inc. (BFW) on August 21st - 22nd, 2023. Two borings, B-1001 (Station 106+93.71, 7.58' RT) and B-1002 (Station 103+90.95, 7.15' LT) were advanced near the western and eastern End Bents, respectively.

Boring B-1001 located near the proposed End Bent 1 and boring B-1002 located near the proposed End Bent 2 were both advanced to a depth of 101.5 feet below ground surface (bgs).

Soil samples were collected during the drilling activities and were delivered to and analyzed by BFW's in-house soil laboratory. No rock outcroppings were observed within the creek bed or near the existing bridge location.

4.0 Laboratory Testing

Alluvial soils were encountered during drilling activities and consisted of intermixed inorganic low plasticity clays, silty clays, silty sandy clays, silty clay with gravel, silts, sandy silts, silty sands, and well to poorly graded sand with gravel. Soil samples were collected during drilling activities and were taken to BFW's in-house laboratory for classification.

Based on laboratory results, soils were classified as CL, CL-ML, ML, SM, SP, SW, SP-SM, SC and GP using the Unified Soil Classification System and A-1-a, A-1-b, A-2-4, A-3, A-4, and A-6 using the AASHTO Classification Method.

5.0 Subsurface Conditions

Soil samples collected at each location were roughly similar between the two borings. Below the surface stratum, interbedded layers of silty clays, sandy silty clay and clayey sands with gravel were encountered to depths of approximately 15 to 25 feet bgs. The soil transitioned to poorly graded sands and sands with gravel to silty sands interlayered with poorly graded sands with silt. These interlayered sand and silt strata continued to boring termination depths of 101.5 feet in both borings except for a thin silty clay layer at 100.5 feet in boring, B-1002.

Soil consistencies in the upper 20 to 25 feet ranged from very soft to firm in the silty clays and upper silty sands. Soils consistencies increased below 25 feet and ranged from firm to dense until approximate depths of 65 to 80 feet. Below these depths the soil consistencies again increase to dense to very dense and continued to boring termination depths of 101.5 feet bgs.

Groundwater levels ranged from approximately 14 to 15 feet Elevation 366 at 1 day after drilling.

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

6.1 Embankments and Settlement – Since little to no fill will be placed for the bridge replacement, slope stability and settlement are not of geotechnical concern. Embankment slopes are to be constructed at slopes the same as currently in existence or 2H:1V, whichever is flatter. If a slope steeper than 2H:1V is required, please contact BFW for further assistance and recommendations.

6.2 **End Bents 1 and 2 and Pile Supported Intermediate Pile Bent Locations 1, 2 3, and 4,** – The use of either HP 12x53 or HP14x89 are recommended as friction piles at both end bents and all pile supported pier footing locations. According to the **KYTC Bridge Program Project Delivery Manual** the use of H-piles is preferred over pipe piles. LRFD Factored Pile Capacities are shown on the pile capacity tables included in the attachments to this report. Capacities may be linearly interpolated between the five-foot intervals presented in the tables. If the base of pile cap varies from the elevation used for the capacity tables base of pile cap by more than 5 feet, contact BFW Engineering for re-evaluation of the capacities. **H-piles used as friction piles should not include pile points as this will result in loss of side friction as the piles are being driven**.

Piles should be installed with a center-to-center spacing of three (3) times the pile diameter or greater in order to optimize group resistance and minimize installation problems. If spacing less than three diameters is needed, please contact BFW Engineering for capacity reduction factors.

Please note that the Total Factored Geotechnical Axial Resistance from the charts may not exceed the Maximum Nominal Geotechnical Axial Capacity of the pile. We recommend using a resistance factor (Φ_c) of 0.6 to determine the Maximum Nominal Geotechnical Axial Capacity of the pile, which results in a maximum of 465 kips and 783 kips for HP 12x53 and HP14x89 piles, respectively.

6.3 **Scour** – BFW conducted grain size analysis on samples collected during drilling activities. Grain size information was provided to WSP so that scour depths could be evaluated. The results of the scour analysis is presented in Table 1 below.

Local abutment scour is to be resisted by appropriate slope protection. According to KYTC Drainage Manual (DR 804-11), abutment scour can be mitigated by the use of countermeasures (Cyclopean Stone Rip Rap) for slope protection. According to the KYTC Geotechnical Manual (Section GT-606-1), deep foundation designs should be checked with no lateral support in the worst-case contraction scour condition.

To check for potential exposed lengths the following method should be used for end bents. 1) Construct a vertical line from the toe of the spill-through slope where the stone slope protection terminates, down to the contraction scour depth for the respective end bent. 2) Construct a 1H:1V (45˚) line (from the above point) back toward the end bent until it intercepts the foundation element line. Intermediate piers should be analyzed for total scour (contraction + local scour) conditions.

The foundations can either be designed to withstand the potential unsupported length, the cap can be set down to that depth to avoid any unsupported length, or a combination of these measures can be employed.

Table 1

Scour Analysis Summary			
Substructure	**Local (ft)**	**Contraction (ft)**	**Total (ft)**
End Bent 1	14.77	9.15	23.92
Intermediate Pile Bents 1-4	2.65	9.15	11.80
End Bent 2	14.77	9.15	23.92

6.4 **Slope Protection** – Slope protection will be required at the bridge end bents meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridge Construction, current edition. Place a Class 1, Geotextile Fabric, in accordance with Sections 214 & 843 of the Standard Specification for Road and Bridge Construction, current edition, between the embankment and the slope protections.

6.5 **Wave Equation Analysis –** Drivability analyses were performed for the piles at this location assuming HP12 x 53 and HP14 x 89, 50-ksi steel H-piles. These analyses indicated that a sufficient range of single acting diesel hammers are available to install the piles to the required end bearing depths without excessive blow counts or overstressing the piles. Drivability studies were performed assuming continuous driving. If interruptions in driving individual piles should occur, difficulties in continuing the installation process will likely occur due to pile "set-up" characteristics.

6.6 **Verification of Piles Capacities** – Based on the **KYTC Bridge Program Project Delivery Manual** the construction control of friction piles will use the FHWA Modified Gates Formula. Therefore, it is recommended that field verification of pile capacity should be performed using the FHWA Modified Gates Formula instead of the formulas provided in the Standard Specifications. The field verification values for End of Driving (EOD) using the Modified Gates Formula are provided under the Static Analysis Method columns of the LRFD Pile Capacity Tables for friction piles located in the attachments to this report.

6.7 **Seismic Site Class Definition** – The seismic design procedures outlined in the current AASHTO LRFD Bridge Design Specification indicates that structural design loads are to be based on site class definitions developed from the subsurface condition encountered. Based on the results of the exploration and geology of the area, a site class of D, as per Table 3.10.3.1.1 – Site Class Definitions, should be used for design purposes.

6.8 **Minimum Pile Lengths** – It is recommended that the structural designer include minimum required pile lengths or tip elevations required to satisfy pile lateral stability on the project plans. It is also recommended that factored uplift design loads, if applicable, be included in the pile record table. Since final pile lengths or tip elevations will be adjusted in the field based on field verification of axial capacity, this information will be used during construction to help ensure that adequate pile embedment and capacities are obtained, and pile lengths are not based on compressive axial capacity alone.

6.9 **Lateral Loads** – Perform lateral load analysis as needed using the geotechnical parameters provided in the attached Idealized Soil Profiles. These parameters may be used to perform analysis using LPILE or other similar software. Some of the parameters may not be required to input depending on the version of software used.

7.0 Plan Notes

The following notes should be included at the appropriate locations in the plans.

7.1 HAMMER CRITERIA: Single acting diesel hammers with rated energy of 33 kip-ft to 48 kip-ft is recommended for HP 12 x 53 and a rated energy between 55 kip-ft and 73 kip-ft is recommended for HP 14 x 89 piles to adequately drive the piles at the end bents without

encountering excessive blow counts or overstressing the piles. The use of hammers other than single acting diesel may require different rated energies. The Contractor shall submit the proposed pile driving system to the Department for approval prior to the installation of the first pile. Approval of the pile driving system by the Engineer will be subject to satisfactory field performance of the pile driving procedures.

7.2 Embankments at the bridge end bent locations shall be constructed in accordance with Special Provision 69 Embankment at Bridge End Bent Structures.

7.3 Slope protection will be required at the bridge meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridges Construction, current edition. Place Geotextile Fabric, in accordance with Section 843 of the Standard Specifications for Road and Bridge Construction, current edition, between the embankment and the slope protection.

7.4 Cofferdams and/or dewatering methods may be required to facilitate foundation construction.

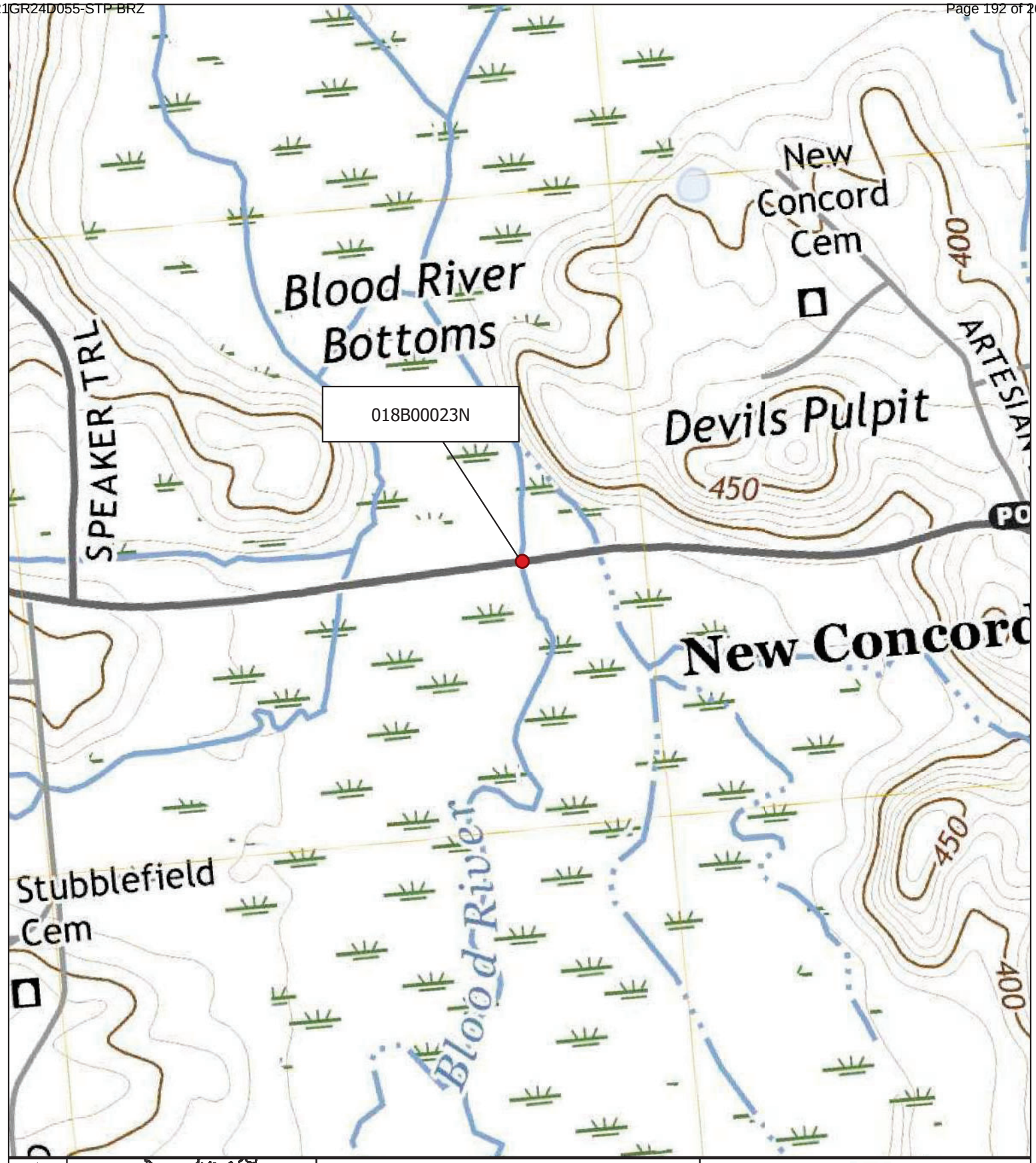
7.5 Temporary shoring or sheeting may be required to facilitate construction.

7.6 Field verification of pile capacity shall be performed using the FHWA Modified Gates Formula instead of the formulas provided in the Standard Specifications for Road and Bridge Construction.

Should there be any questions, please contact BFW at (270) 443-1995 for further recommendations.

Attachments:

- **Project Location Map**
- **Subsurface Data Sheet with Boring Locations**
- **Idealized Soil Profile Sheets for Lateral Pile Analysis**
- **Pile Capacity Tables**
- **Coordinate Data Sheet**



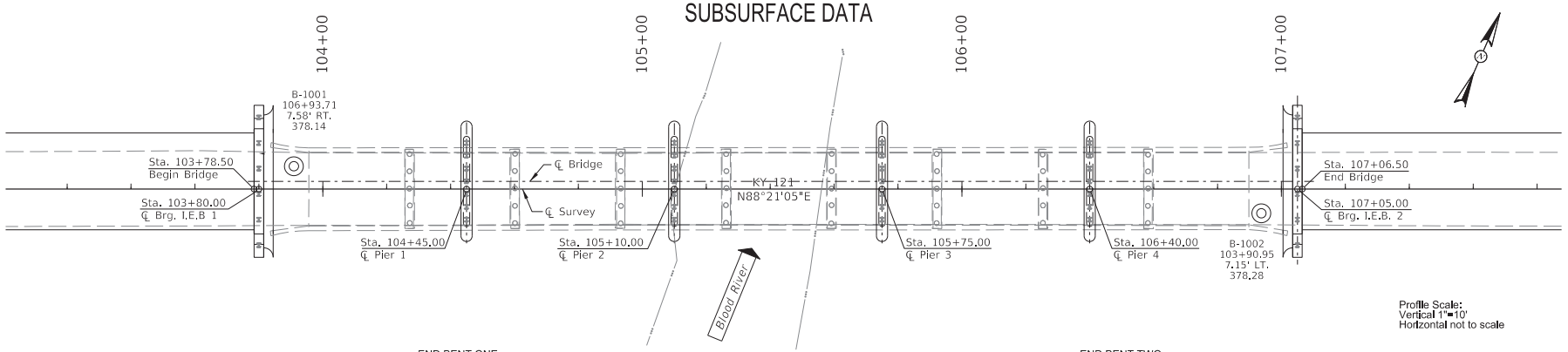
KY-121 - Over Blood River

- 8.5975- 28, H77.189173P
Fftllj wfty Fj mnty, /Y

r gj Nect umb Dec:	a dtdekCFhec6ek:	a ftte:
22- 9P H10100	K/CF4	202- H03H11

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
500 SOUTH 17TH STREET
PADUCAH, KY 42003

SUBSURFACE DATA



END BENT ONE
APPROXIMATE ROADWAY GRADE ELEV. = 378.41

END BENT TWO
APPROXIMATE ROADWAY GRADE ELEV. = 378.41

(Sea level datum)

Hole No.
Station
Offset
Elev.

B-1001
106+93.71
7.58' RT.
378.14

D_{50} (mm)	w%	LI			
0.714	17.81	0.181	N=12		A-2-4, SC, S+C=32(26+6)
			N=9		
0.039	20.21	0.596	N=6		A-4, CL-ML, S+C=60(55+5)
			N=3		
0.195	17.50	NP	N=3		A-2-4, SM, S+C=16(15+1)
			N=2		
0.024	25.40	1.066	N=2		A-4, CL-ML, S+C=69(62+7)
			N=19		
3.353	15.72	NP	N=33		A-1-a,b SP, S+C=3(2+1)
			N=17		
			N=13		
0.196	23.31	NP	N=17		A-3, SP-SM, S+C=10(9+1)
			N=23		
0.192	28.48	NP	N=16		A-2-4, ML, S+C=12(11+1)
			N=18		
			N=34		
0.175	20.68	NP	N=30		A-3, SP-SM, S+C=6(4+2)
9.513	15.89	NP	N=48		A-1-a, GP, S+C=1(1+0)
0.016	25.25	NP	N=20		A-4, ML, S+C=87(85+2)
			N=56		
0.177	25.48	NP	N=29		A-3, SP-SM, S+C=9(7+2)
			N=56		

N.R.
(276.64)

B-1002
103+90.95
7.15' LT.
378.28

D_{50} (mm)	w%	LI			
			N=4		
0.011	27.49	1.081	N=6		A-4, CL-ML, S+C=97(91+6)
			N=2		
			N=0		
0.012	23.81	2.269	N=0		A-4, ML, S+C=97(95+2)
0.450	25.41	NP	N=8		A-1-b, SP-SM, S+C=9(7+2)
0.215	32.09	NP	N=20		A-2-4, SM, S+C=24(22+2)
0.666	18.65	NP	N=24		A-1-b, SW, S+C=4(2+2)
			N=18		
3.845	15.15	NP	N=36		A-1-a,b, SP, S+C=3(2+1)
			N=32		
			N=19		
0.155	28.27	NP	N=9		A-2-4, SM, S+C=15(13+2)
			N=12		A-4, CL, S+C=80(70+10)
			N=25		
0.201	21.80	NP	N=26		A-3, SP-SM, S+C=8(6+2)
			N=18		
0.154	29.96	NP	N=5		A-2-4, SM, S+C=18(16+2)
0.263	23.53	NP	N=29		A-3, SP-SM, S+C=10(8+2)
			N=20		
0.055	23.16	NP	N=39		A-4, ML, S+C=55(53+2)
0.010	26.78	0.299	N=34		A-6, CL, S+C=96(82+14)

N.R.
(276.78)

380 370 360 350 340 330 320 310 300 290 280 270

Datum

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SUBSURFACE DATA FOR KY 121 OVER BLOOD RIVER

HORIZONTAL SCALE
SCALE: N.T.S.

ITEM NO. 1-10100
COUNTY OF CALLOWAY
SHEET NO.

OpenRoads Designer v10.16.2.267 USER: bvollmer FILE NAME: C:\BMS\WSP-US-PW-02\D0561658\018B00023N_SUBSURFACE_DATA.DGN

Idealized Soil Profile

Calloway County

Item No: 1-10100 **Bridge ID:** 018B00023N

KY-121 Over Blood River

(End Bent 1)

Elevation (approx.)	Strata	Parameters for Lateral Load Analysis (L-Pile)
378 ft	Clay (Firm)	Unit Weight (pcf): 120.0 Effective Unit Weight (pcf): 57.6 Undrained Cohesion, c (psf): 900 Strain Factor E50: 0.010 Soil Modulus (static), k (pci): 100
370 ft	Clay (Soft)	Unit Weight (pcf): 120.0 Effective Unit Weight (pcf): 57.6 Undrained cohesion, c (psf): 500 Strain Factor E50: 0.020 Soil Modulus (static), k (pci): 35
Water Elev. 363 (approx.)		
350 ft	Sand (Dense)	Effective Unit Weight (pcf): 55.6 Friction Angle, (deg): 35 Soil Modulus (static), k (pci): 105
336 ft	Sand (Dense)	Effective Unit Weight (pcf): 55.6 Friction Angle, (deg): 36 Soil Modulus (static), k (pci): 125
310 ft	Sand (Dense)	Effective Unit Weight (pcf): 52.6 Friction Angle, (deg): 36 Soil Modulus (static), k (pci): 125
276.64 ft		

Elevations are approximate.

BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC.

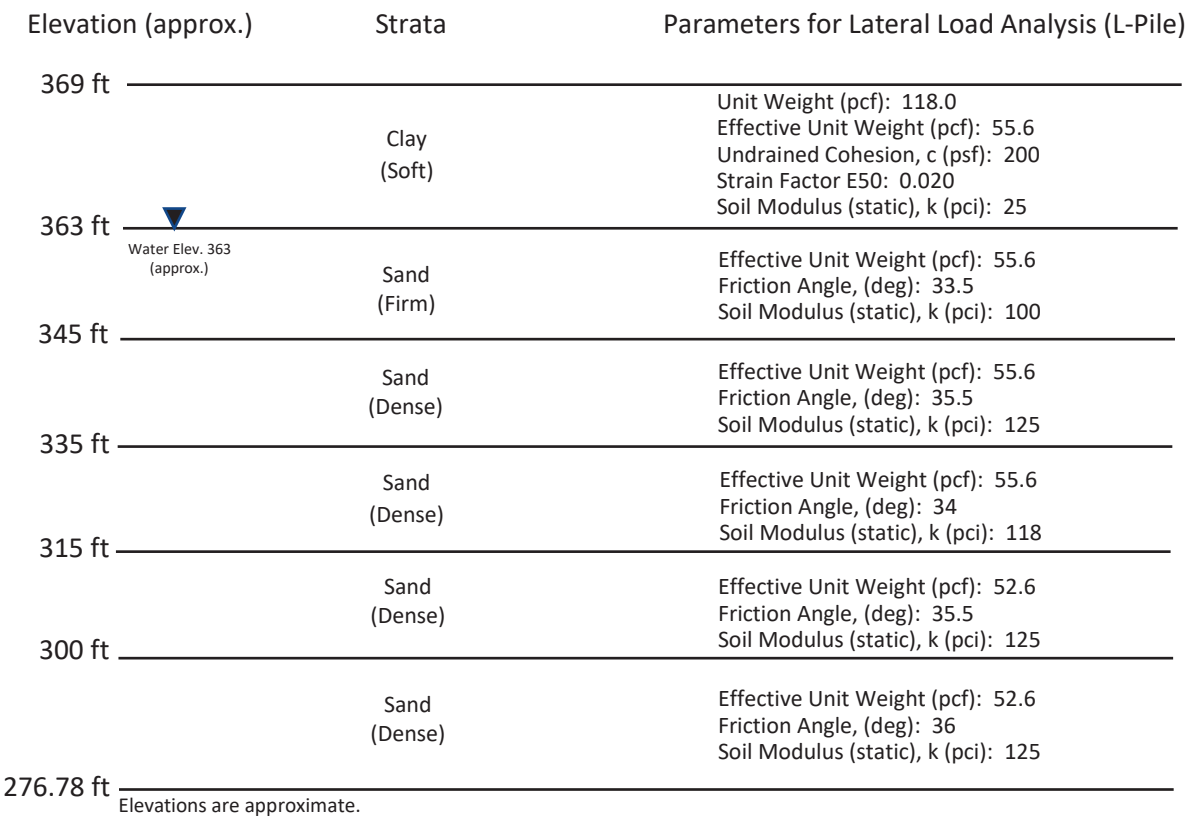
Idealized Soil Profile

Calloway County

Item No: 1-10100 **Bridge ID:** 018B00023N

KY-121 Over Blood River

(Intermediate Pile Bends 1 - 4)



Elevations are approximate.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

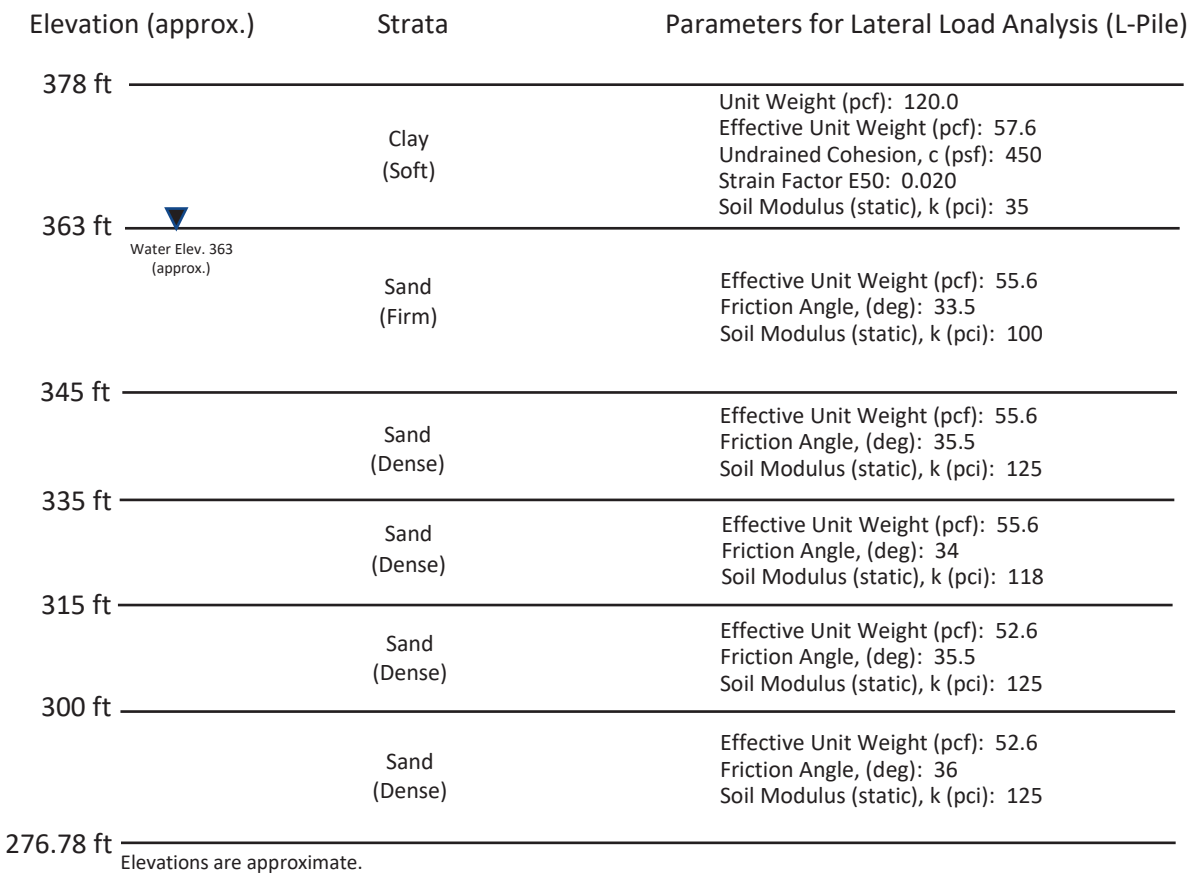
Idealized Soil Profile

Calloway County

Item No: 1-10100 **Bridge ID:** 018B00023N

KY-121 Over Blood River

(End Bent 2)



Elevations are approximate.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

LRFD Pile Capacities (For Friction Piles)

End Bent 1

County: Calloway
Location: KY 121 Over Blood River
Item #: 1-10100

Date: 9/19/2023
Pile Size: HP 12X 53 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **371.5** ft
Finished Grade Elevation: **378.4** ft
Original Groundline Elevation: **378.1** ft

									Static Analysis Method				Dynamic Testing Method						Uplift	
			Nominal Side Resistance		Nominal End Bearing		R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	371	cohesive	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0.6	0	0	0
25	346	cohesive	17	8	0	0	17	8	6	3	15	7	11	5	28.4	14	54.3	27	4	2
30	341	cohesionless	31	15	8	3	39	19	18	9	44	22	26	12	49.3	24	76.1	38	11	6
35	336	cohesionless	49	24	8	3	57	28	26	13	64	32	37	18	67.4	33	94.3	47	17	9
40	331	cohesionless	68	34	3	1	71	35	32	16	80	39	46	23	81.1	40	108.0	54	24	12
45	326	cohesionless	86	43	3	1	89	44	40	20	100	50	58	29	99.5	49	126.3	63	30	15
50	321	cohesionless	107	53	3	1	109	54	49	25	123	61	71	35	119.7	59	146.5	73	37	19
55	238	cohesionless	130	64	5	2	134	67	60	30	151	75	87	43	141.2	70	171.4	86	45	23
60	311	cohesionless	156	78	5	2	161	80	72	36	181	90	105	52	158.9	79	197.9	99	55	28
65	306	cohesionless	185	92	5	2	189	94	85	43	213	106	123	61	177.9	88	226.4	113	65	33
70	301	cohesionless	216	107	5	2	221	110	99	50	249	124	144	71	201.3	100	258.0	129	75	38
75	296	cohesionless	249	124	5	2	254	127	115	58	286	143	165	82	229.3	114	291.6	146	87	44
80	291	cohesionless	289	144	16	8	306	152	138	69	344	171	199	99	276.8	138	342.7	171	101	51
85	286	cohesionless	338	168	14	6	352	175	158	79	396	197	229	114	316.6	158	388.8	194	118	59
90	281	cohesionless	387	193	14	6	401	200	181	91	452	225	261	130	349.7	174	438.5	219	136	68
95	276	cohesionless	440	219	14	6	454	226	204	102	510	255	295	147	384.6	192	490.8	245	154	77
100	271	cohesionless	495	247	14	6	509	254	229	115	572	286	331	165	421.2	210	545.8	273	173	87

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

Intermediate Bents 1 - 4

County: Calloway
Location: KY 121 Over Blood River
Item #: 1-10100

Date: 9/19/2023
Pile Size: HP 12 X 53 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **371.5** ft
Finished Grade Elevation: **378.4** ft
Original Groundline Elevation: **362.0** ft

Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing		R_n Total Nominal Geotechnical Axial Resistance **		**Static Analysis Method** ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		**Static Analysis Method** Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		**Dynamic Testing Method** ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		**Dynamic Testing Method** Field Verification Values (EOD) End of Driving Nominal Resistance		**Dynamic Testing Method** Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		**Uplift** ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	371	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
25	346	cohesionless	3	1	2	0	5	2	2	1	6	2	3	1	10.9	5	12.4	6	1	1
30	341	cohesionless	8	4	2	1	11	5	5	3	12	6	7	3	20.0	10	21.5	11	3	2
35	336	cohesionless	15	7	3	1	18	9	8	4	20	10	12	5	30.3	15	31.8	16	5	3
40	331	cohesionless	24	12	5	2	30	14	13	7	33	16	19	9	46.3	23	47.7	24	9	5
45	326	cohesionless	37	18	6	3	43	21	19	10	48	24	28	13	63.3	31	64.8	32	13	7
50	321	cohesionless	50	24	2	0	52	25	23	12	58	28	33	16	72.9	36	75.4	38	17	9
55	238	cohesionless	62	31	2	0	64	32	29	15	72	36	42	20	85.8	42	90.8	45	22	11
60	311	cohesionless	76	38	2	0	78	39	35	18	88	44	51	25	100.1	50	108.0	54	27	14
65	306	cohesionless	94	46	4	2	98	49	44	22	110	55	64	31	121.1	60	130.8	65	33	17
70	301	cohesionless	115	57	4	2	119	59	54	27	134	67	77	38	145.7	72	155.4	78	40	20
75	296	cohesionless	138	69	4	2	142	71	64	32	160	80	93	46	172.4	86	182.1	91	48	24
80	291	cohesionless	161	80	1	0	163	81	73	37	183	91	106	52	194.4	97	205.6	103	56	28
85	286	cohesionless	187	93	10	4	197	98	89	45	222	110	128	64	227.1	113	243.3	122	66	33
90	281	cohesionless	222	110	10	4	232	115	104	52	260	130	151	75	259.1	129	281.7	141	78	39
95	276	cohesionless	259	129	10	4	268	134	121	61	302	150	174	87	293.2	146	322.6	161	91	46
100	271	cohesionless	289	144	1	0	290	145	131	66	327	163	189	94	313.3	156	347.0	174	101	51

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

End Bent 2

County: Calloway
Location: KY 121 Over Blood River
Item #: 1-10100

Date: 9/19/2023
Pile Size: HP 12X 53 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **371.5 ft**
Finished Grade Elevation: **378.4 ft**
Original Groundline Elevation: **378.1 ft**

									Static Analysis Method				Dynamic Testing Method						Uplift	
							R_n		ϕR_n for design:		Field Verification Values:		ϕR_n for design:		Field Verification Values				ϕR_n for design:	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing		Total Nominal Geotechnical Axial Resistance **		Total Factored Geotechnical Axial Resistance (Static Analysis Method)		FHWA Modified Gates Formula Calculated Resistance		Total Factored Geotechnical Axial Resistance Dynamic Testing Method		(EOD) End of Driving Nominal Resistance		(BOR) Beginning of Restrike Nominal Resistance		Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	371	cohesive	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
25	346	cohesionless	18	9	4	2	23	11	10	5	25	12	15	7	35.4	17	51.6	26	6	3
30	341	cohesionless	32	15	4	2	36	18	16	8	41	20	23	11	49.0	24	65.1	33	11	6
35	336	cohesionless	47	23	4	1	51	25	23	12	57	28	33	16	63.5	31	79.7	40	16	8
40	331	cohesionless	65	32	8	3	73	36	33	17	82	41	47	23	85.8	42	102.0	51	23	12
45	326	cohesionless	87	43	8	3	95	47	43	22	107	53	62	30	107.8	53	124.0	62	30	15
50	321	cohesionless	109	54	2	0	110	55	50	25	124	62	72	35	122.1	61	139.5	70	38	19
55	238	cohesionless	128	64	2	0	130	65	59	30	146	73	85	42	138.5	69	159.2	80	45	23
60	311	cohesionless	150	74	2	0	152	75	68	34	171	85	99	49	156.4	78	180.7	90	52	26
65	306	cohesionless	175	87	4	2	179	89	81	41	202	100	116	58	181.6	90	208.2	104	61	31
70	301	cohesionless	205	102	4	2	209	104	94	47	235	117	136	67	211.3	105	237.9	119	72	36
75	296	cohesionless	236	118	4	2	241	120	108	54	271	135	156	78	243.1	121	269.7	135	83	42
80	291	cohesionless	267	133	1	0	269	134	121	61	303	151	175	87	269.5	134	297.9	149	94	47
85	286	cohesionless	302	150	10	4	311	155	140	70	350	175	202	101	306.3	153	340.4	170	106	53
90	281	cohesionless	346	173	10	4	356	177	160	80	400	200	231	115	343.3	171	384.8	192	121	61
95	276	cohesionless	393	196	10	4	403	201	181	91	453	226	262	130	382.3	191	431.6	216	138	69
100	271	cohesive	429	214	1	0	430	215	151	76	377	188	280	139	405.3	202	459.5	230	107	54

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

End Bent 1

County: Calloway
Location: KY 121 Over Blood River
Item #: 1-10100

Date: 9/19/2023
Pile Size: HP 14 X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **371.5** ft
Finished Grade Elevation: **378.4** ft
Original Groundline Elevation: **378.1** ft

								Static Analysis Method				Dynamic Testing Method						Uplift
							R_n	ϕR_n for design:		Field Verification Values:		ϕR_n for design:		Field Verification Values				ϕR_n for design:
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing		Total Nominal Geotechnical Axial Resistance **	Total Factored Geotechnical Axial Resistance (Static Analysis Method)		FHWA Modified Gates Formula Calculated Resistance		Total Factored Geotechnical Axial Resistance Dynamic Testing Method		(EOD) End of Driving Nominal Resistance		(BOR) Beginning of Restrike Nominal Resistance		Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	371	cohesive	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0.6	0	0	0
25	346	cohesive	20	10	1	0	21	10	7	4	19	9	14	6	34.4	17	65.4	33	5	3
30	341	cohesionless	41	20	13	6	55	27	25	13	62	30	36	17	66.9	33	98.9	49	15	8
35	336	cohesionless	68	34	13	6	82	40	37	19	92	45	53	26	93.8	46	125.8	63	24	12
40	331	cohesionless	96	47	5	2	101	50	45	23	113	56	65	32	112.9	56	144.9	72	34	17
45	326	cohesionless	123	61	5	2	128	63	57	29	143	71	83	41	139.7	69	171.7	86	43	22
50	321	cohesionless	152	76	5	2	157	78	71	36	177	88	102	51	169.2	84	201.2	101	53	27
55	238	cohesionless	186	92	8	3	194	96	87	44	218	109	126	63	201.2	100	238.1	119	65	33
60	311	cohesionless	225	112	8	3	233	116	105	53	262	130	151	75	227.2	113	277.1	139	79	40
65	306	cohesionless	267	133	8	3	275	137	124	62	309	154	179	89	255.2	127	319.2	160	93	47
70	301	cohesionless	313	156	9	4	322	160	145	73	362	180	209	104	289.9	144	365.9	183	109	55
75	296	cohesionless	362	181	9	4	371	185	167	84	418	208	241	120	331.3	165	415.5	208	127	64
80	291	cohesionless	422	211	27	13	450	224	202	101	506	253	292	146	404.7	202	494.2	247	148	74
85	286	cohesionless	496	248	23	11	520	259	234	117	585	292	338	168	464.7	232	563.9	282	174	87
90	281	cohesionless	571	285	23	11	595	297	268	134	669	334	387	193	514.8	257	639.0	320	200	100
95	276	cohesionless	651	325	23	11	674	336	303	152	758	379	438	219	567.6	283	718.2	359	228	114
100	271	cohesionless	734	366	23	11	757	378	341	171	852	425	492	246	623.1	311	801.4	401	257	129

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

Intermediate Bents 1 - 4

County: Calloway
Location: KY 121 Over Blood River
Item #: 1-10100

Date: 9/19/2023
Pile Size: HP 14 X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **371.5** ft
Finished Grade Elevation: **378.4** ft
Original Groundline Elevation: **362.0** ft

Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing		R_n Total Nominal Geotechnical Axial Resistance **		**Static Analysis Method** ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		**Static Analysis Method** Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		**Dynamic Testing Method** ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		**Dynamic Testing Method** Field Verification Values (EOD) End of Driving Nominal Resistance		**Dynamic Testing Method** Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		**Uplift** ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	371	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
25	346	cohesionless	5	2	3	1	8	3	3	2	9	4	5	2	16.5	8	18.6	9	2	1
30	341	cohesive	12	6	4	1	16	8	6	3	14	7	11	5	30.1	15	32.2	16	3	2
35	336	cohesionless	22	11	5	2	27	13	12	6	31	15	18	8	45.0	22	47.1	24	8	4
40	331	cohesionless	36	17	9	4	45	22	20	10	50	25	29	14	69.4	34	71.5	36	13	7
45	326	cohesionless	54	27	11	5	65	32	29	15	73	36	42	21	95.1	47	97.2	49	19	10
50	321	cohesionless	73	36	3	1	76	38	34	17	86	42	50	24	107.9	53	111.3	56	26	13
55	238	cohesionless	91	45	3	1	94	47	43	22	106	53	61	30	126.4	63	133.6	67	32	16
60	311	cohesionless	112	55	3	1	115	57	52	26	129	64	75	37	147.1	73	158.4	79	39	20
65	306	cohesionless	137	68	7	3	144	72	65	33	162	81	94	46	178.3	89	192.2	96	48	24
70	301	cohesionless	168	84	7	3	176	87	79	40	197	98	114	57	214.5	107	228.4	114	59	30
75	296	cohesionless	202	101	7	3	210	104	94	47	236	117	136	68	253.7	126	267.7	134	71	36
80	291	cohesionless	236	118	2	1	239	119	107	54	269	134	155	77	285.2	142	301.4	151	83	42
85	286	cohesionless	275	137	16	8	291	145	131	66	327	163	189	94	335.0	167	358.3	179	96	48
90	281	cohesionless	326	162	16	8	342	171	154	77	385	192	223	111	382.9	191	415.8	208	114	57
95	276	cohesionless	381	190	16	8	397	198	179	90	447	223	258	129	433.8	216	477.0	238	133	67
100	271	cohesionless	425	212	2	0	427	213	192	96	480	239	277	138	460.1	230	509.6	255	149	75

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

End Bent 2

County: Calloway
Location: KY 121 Over Blood River
Item #: 1-10100

Date: 9/19/2023
Pile Size: HP 14X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **371.5** ft
Finished Grade Elevation: **378.4** ft
Original Groundline Elevation: **378.1** ft

								Static Analysis Method				Dynamic Testing Method						Uplift	
							R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing															
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	371	cohesive	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
25	346	cohesionless	26	13	7	3	33	16	15	8	38	18	22	10	48.9	24	69.1	35	9	5
30	341	cohesionless	46	23	7	3	53	26	24	12	60	30	35	17	68.9	34	89.1	45	16	8
35	336	cohesionless	69	34	6	2	75	37	34	17	84	42	49	24	90.1	45	110.3	55	24	12
40	331	cohesionless	95	47	13	6	109	54	49	25	122	61	71	35	124.0	61	144.2	72	33	17
45	326	cohesionless	128	63	13	6	141	70	64	32	159	79	92	45	156.6	78	176.9	88	45	23
50	321	cohesionless	160	79	3	1	163	81	73	37	183	91	106	52	176.5	88	198.5	99	56	28
55	238	cohesionless	188	94	3	1	191	95	86	43	215	107	124	62	200.2	100	227.0	113	66	33
60	311	cohesionless	219	109	3	1	222	111	100	50	250	125	145	72	226.0	113	257.9	129	77	39
65	306	cohesionless	256	127	7	3	263	131	118	59	296	147	171	85	263.3	131	298.6	149	89	45
70	301	cohesionless	299	149	7	3	307	153	138	69	345	172	199	99	307.1	153	342.3	171	105	53
75	296	cohesionless	346	173	7	3	353	176	159	80	398	198	230	114	353.9	176	389.1	195	121	61
80	291	cohesionless	392	195	2	1	394	197	177	89	443	221	256	128	391.8	195	429.6	215	137	69
85	286	cohesionless	442	220	16	8	458	229	206	103	515	257	298	148	447.5	223	493.7	247	155	78
90	281	cohesionless	508	254	16	8	525	262	236	118	590	295	341	170	502.9	251	560.1	280	178	89
95	276	cohesionless	578	289	16	8	595	297	268	134	669	334	386	193	561.3	280	630.2	315	202	101
100	271	cohesive	631	315	2	0	632	316	221	111	553	276	411	205	591.7	295	668.0	334	158	79

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

COORDINATE DATA SUBMISSION FORM
KYTC DIVISION OF STRUCTURAL DESIGN - GEOTECHNICAL BRANCH

County Calloway Date 9/20/2023

Road Number KY 121

Survey Crew / Consultant BFW

Contact Person Chris Farmer

Item # 01-10100

Mars#

Project #

Notes:

(circle one)
Elevation Datum **NAVD88** **Assumed**

HOLE NUMBER	LATITUDE (Decimal Degrees)	LONGITUDE (Decimal Degrees)	HOLE NUMBER	STATION	OFFSET	ELEVATION (FT)
5 - SPAN BRIDGE - KY 121 OVER BLOOD RIVER						
1001	36.5485256°N	88.1646948°W	1001	106+93.71	7.58' RT	378.14
1002	36.5485306°N	88.1636631°W	1002	103+90.95	7.15' LT	378.28

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
500 SOUTH 17TH STREET | PADUCAH, KY 42003

MEMORANDUM

TO: Michael Carpenter, P.E.
Director
Division of Structural Design / Geotechnical Branch
Kentucky Transportation Cabinet
1236 Wilkinson Boulevard
Frankfort, Kentucky 40601

FROM: Christopher N. Farmer, P.E. (Consultant)
Principal Geotechnical Engineer
Bacon Farmer Workman Engineering & Testing, Inc. (BFW)
500 South 17th Street
Paducah, Kentucky 42001

DATE: February 7, 2023

SUBJECT: **Hickman County**
D1 053B00002N
Item No. 1-10144
US 51
Bridge Over Brush Creek
Geotechnical Engineering Structure Foundation Report

1.0 Location and Description

The project is located on US 51 over Brush Creek, approximately 3.5 miles north of Clinton, Hickman County, Kentucky. The bridge is being replaced as part of the KYTC Bridge Program Project Delivery. The proposed bridge is a single-span structure constructed using PPC Spread Box Beams with a length of 75'-3 ¾" (out to out), a bridge width of 34'-6½" on a 25˚ skew right. The bridge will be supported by piles with two integral end bents.

2.0 Site Geologic Conditions

The bridge is located within the Clinton, KY Geologic and Topographic Quadrangle (GQ #1030). Geologic mapping of the bridge location shows the geologic strata composed of water deposited alluvium which consists of silts, gravels, sands, and minor clays. The Natural Resources Conservation Service (NRCS) Soil map classifies the surface soils at the bridge location as Convent-Adler Silt Loams.

3.0 Field Investigation

Subsurface drilling was conducted by Bacon Farmer Workman Engineering & Testing, Inc. (BFW) from December 3rd and 19th, 2022. Two borings, B-1001 (Station 50+13.86, 25.08 RT) and B-1002 (Station 49+48.42, 22.58 LT) were advanced near each proposed Integral End Bents. The borings were advanced to depths of 81.5 feet (Elevation 252.72) and 91.5 feet (Elevation 243.02)

for B-1001 and B-1002, respectively. Soil samples were collected during the drilling activities and were delivered to and analyzed by BFW's in-house soil laboratory.

4.0 Laboratory Testing

Alluvial soils were encountered during drilling activities and consisted of layered and intermixed inorganic low plasticity clays, silts, silt with sand, sandy silts, poorly to well graded sands with gravels, poorly to well graded sands, silty sands, and silty sands with gravel. Soil samples were collected during drilling activities and were taken to BFW's inhouse laboratory for classification.

Based on laboratory results, soils were classified as CL, ML, SM, SW-SM, SW, SP, and SP-SM using the Unified Soil Classification System and A-1-b, A-2-4, A-3, and A-4 using the AASHTO Classification Method.

5.0 Subsurface Conditions

Soil samples collected at each location were similar between the two borings. Below surface organics, silty to lean clay were encountered at the surface. Below the clays, intermixed silts, silts with sand and sandy silts were encountered to depths of approximately 30 feet. The soil consistencies ranged from loose to firm. Below the upper silts and sandy silts, the soils transitioned to sands and sands with gravel and some silts. The sands ranged from poorly to well graded and ranged in consistency from firm to dense. The sands and sands with gravel and silts extended to boring termination depths of between 81.5 to 91.5 feet below ground surface.

Groundwater levels ranged from approximately 15 to 20 feet Elev. 319 – 314 at 2 days after drilling.

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

6.1 Embankments and Settlement – Since little to no fill will be placed for the bridge replacement, slope stability and settlement are not of geotechnical concern. Embankment slopes are to be constructed at slopes the same as currently in existence or 2H:1V, whichever is flatter. If a slope steeper than 2H:1V is required, please contact BFW for further assistance and recommendations.

6.2 Integral End Bents 1 and 2 – The use of HP 12x53 or 14x89 are recommended as friction piles at the Integral End Bent locations. According to the **KYTC Bridge Program Project Delivery Manual** the use of H-piles is preferred over pipe piles. LRFD Factored Pile Capacities are shown on the pile capacity tables included in the attachments to this report. Capacities may be linearly interpolated between the five-foot intervals presented in the tables. If base of pile cap varies from the elevation used for the capacity tables base of pile cap by more than 5 feet, contact BFW Engineering for re-evaluation of the capacities. **H-piles used as friction piles should not include pile points as this will result in loss of side friction as the piles are being driven**.

Piles should be installed with a center-to-center spacing of three (3) times the pile diameter or greater in order to optimize group resistance and minimize installation problems. If spacing less than three diameters are needed, please contact BFW Engineering for capacity reduction factors.

Please note that the Total Factored Geotechnical Axial Resistance from the charts may not exceed the Maximum Nominal Geotechnical Axial Capacity of the pile. We recommend using a

resistance factor (Φ_c) of 0.6 to determine the Maximum Nominal Geotechnical Axial Capacity of the pile, which results in a maximum of 465 and 783 kips for HP 12x53 piles and 14x89 piles, respectively.

6.3 **Scour** – BFW conducted grain size analysis on samples collected during drilling activities. Grain size information was provided to WSP so that scour depths could be evaluated. The results of the scour analysis is presented in Table 1 below.

Local abutment scour is to be resisted by appropriate slope protection. According to KYTC Drainage Manual - DR 804-11, abutment scour can be mitigated by the use of countermeasures (Cyclopean Stone Rip Rap) for slope protection. Deep foundation designs should be checked with no lateral support in the worst-case contraction scour conditions.

Table 1

Scour Analysis Summary			
Substructure	**Total (ft)**	**Local (ft)**	**Contraction (ft)**
Pile Bent 1	26.74	14.57	12.17
Pile Bent 2	26.74	14.57	12.17

To design for the above contraction scour estimates, the piles can either be designed to withstand the potential unsupported length, the pile cap can be set down to that depth to avoid any unsupported length, or a combination of these measures can be employed. The pile capacity tables provided at the end of this report have already considered the effects of scour on the pile bearing capacities.

6.4 **Slope Protection** – Slope protection will be required at the bridge end bents meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridge Construction, current edition. Place a Class 1, Geotextile Fabric, in accordance with Sections 214 & 843 of the Standard Specification for Road and Bridge Construction, current edition, between the embankment and the slope protections.

6.5 **Wave Equation Analysis -** Drivability analyses were performed for the piles at this locations assuming 12x53 and 14x89, 50-ksi steel H-piles. These analyses indicated that a sufficient range of single acting diesel hammers are available to install the piles to the required depth without excessive blow counts or overstressing the piles. Drivability studies were performed assuming continuous driving. If interruptions in driving individual piles should occur, difficulties in continuing the installation process will likely occur due to pile “set-up” characteristics.

6.6 **Verification of Piles Capacities** – Based on the **KYTC Bridge Program Project Delivery Manual** the construction control of friction piles will use the FHWA Modified Gates Formula. Therefore, it is recommended that field verification of pile capacity should be performed using the FHWA Modified Gates Formula instead of the formulas provided in the Standard Specifications. The field verification values for End of Driving (EOD) using the Modified Gates

Formula are provided under the Static Analysis Method columns of the LRFD Pile Capacity Tables for friction piles located in the attachments to this report.

6.7 **Minimum Pile Lengths** – It is recommended that the structural designer include minimum required pile lengths or tip elevations required to satisfy pile lateral stability on the project plans. It is also recommended that factored uplift design loads, if applicable, be included in the pile record table. Since final pile lengths or tip elevations will be adjusted in the field based on field verification of axial capacity, this information will be used during construction to help ensure that adequate pile embedment and capacities are obtained, and pile lengths are not based on compressive axial capacity alone.

7.0 Plan Notes

The following notes should be included at the appropriate locations in the plans.

7.1 HAMMER CRITERIA: Single acting diesel hammers with rated energies between 33 kip-ft to 48 kips-ft is recommended for HP 12 x 53 piles and a rated energy between 56 kip-ft to 73 kips-ft is recommended for HP 14x89 piles to adequately drive the piles at End Bents without encountering excessive blow counts or overstressing the piles. The use of hammers other than single acting diesel may require different rated energies. The Contractor shall submit the proposed pile driving system to the Department for approval prior to the installation of the first pile. Approval of the pile driving system by the Engineer will be subject to satisfactory field performance of the pile driving procedures.

7.2 Embankments at the bridge end bent locations shall be constructed in accordance with Special Provision 69 Embankment at Bridge End Bent Structures.

7.3 Slope protection will be required at the bridge meeting the requirements of Sections 703 & 805 of the Standard Specifications for Road and Bridges Construction, current edition. Place Geotextile Fabric, in accordance with Section 843 of the Standard Specifications for Road and Bridge Construction, current edition, between the embankment and the slope protection.

7.4 Cofferdams and/or dewatering methods may be required to facilitate foundation construction.

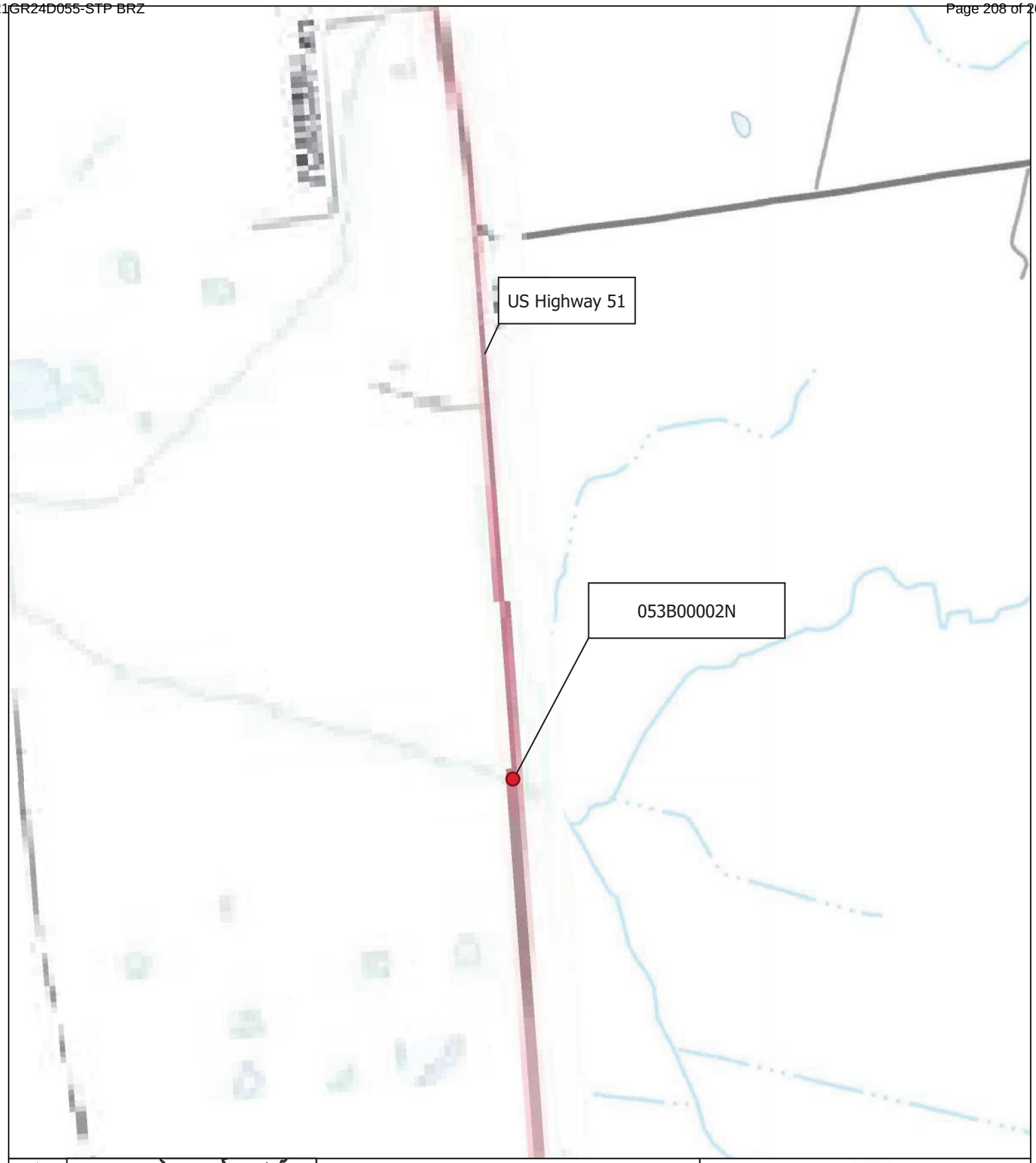
7.5 Temporary shoring or sheeting may be required to facilitate construction.

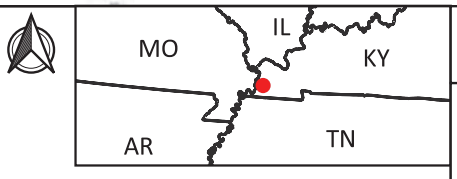
7.6 Field verification of pile capacity shall be performed using the FHWA Modified Gates Formula instead of the formulas provided in the Standard Specifications for Road and Bridge Construction.

Should there be any questions, please contact BFW at (270) 443-1995 for further recommendations.

Attachments:

- **Project Location Map**
- **Boring Locations / Subsurface Data Sheet**
- **Pile Capacity Tables**
- **Coordinate Data Sheet**





0 800 1,600 ft

1 inch : 833 feet

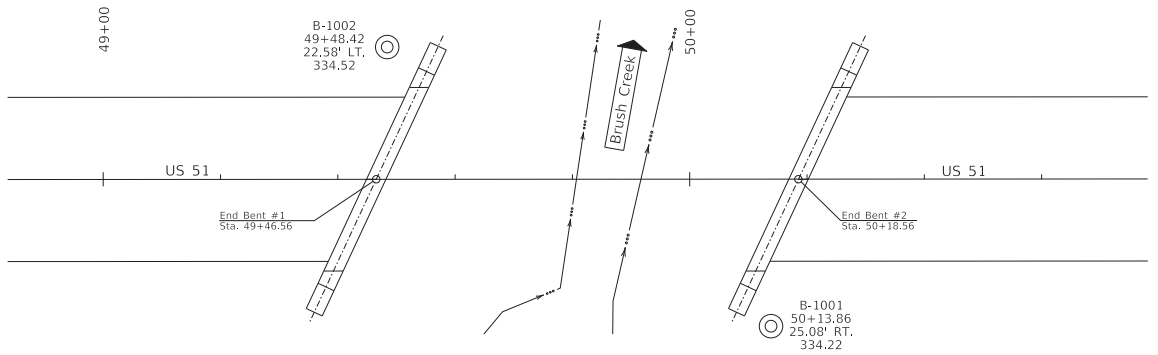
US - 51 Over Brush Creek

36.7260132, -89.0000222
Hickman County, KY

Project Number:	Drafted/Checked:	Date:
22349 - 10144	HK/CF	2023-01-17

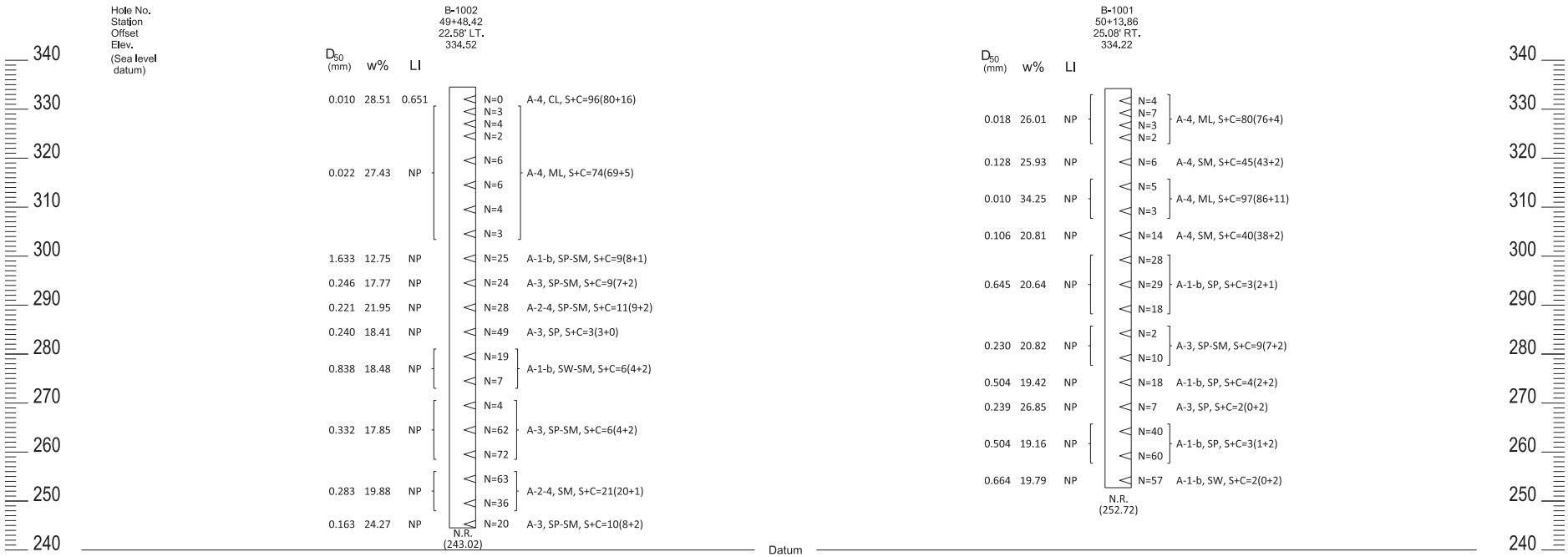
BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
500 SOUTH 17TH STREET
PADUCAH, KY 42003

SUBSURFACE DATA



END BENT ONE
APPROXIMATE ROADWAY GRADE ELEV. = 335.94

END BENT TWO
APPROXIMATE ROADWAY GRADE ELEV. = 335.93



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SUBSURFACE DATA FOR US 51 OVER BRUSH CREEK

HORIZONTAL SCALE
SCALE: N.T.S.

ITEM NO. 1-10144
COUNTY OF HICKMAN
SHEET NO. S3

OpenRoads Designer v10.16.2.267
USER: bvollmer
FILE NAME: C:\BMS\WSP-US-PW-02\D0561443\003_053B00002N_SUBSURFACE_DATA.DGN

LRFD Pile Capacities (For Friction Piles)

Integral End Bent 1

County: Hickman
Location: US - 51 Over Brush Creek
Item #: 1-10144

Date: 1/16/2023
Pile Size: HP 12X 53 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **329.1 ft**
Finished Grade Elevation: **335.9 ft**
Original Groundline Elevation: **334.5 ft**

								Static Analysis Method				Dynamic Testing Method						Uplift	
							R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing															
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	329	cohesive	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
20	309	cohesionless	11	5	1	0	13	6	6	3	14	7	8	4	12.0	5	15.0	8	4	2
25	304	cohesionless	18	8	1	0	19	9	8	4	21	10	12	6	17.0	8	21.2	11	6	3
30	299	cohesionless	25	12	1	0	27	13	12	6	30	14	17	8	23.5	11	28.9	14	9	5
35	294	cohesionless	36	17	2	1	38	18	17	9	43	21	25	12	34.0	17	40.3	20	12	6
40	289	cohesionless	50	25	2	1	52	26	24	12	59	29	34	16	48.4	24	54.6	27	18	9
45	284	cohesionless	66	32	2	1	68	33	31	16	76	38	44	22	64.1	32	70.4	35	23	12
50	238	cohesionless	83	41	2	1	85	42	38	19	95	47	55	27	80.9	40	87.1	44	29	15
55	274	cohesionless	101	50	2	1	103	51	47	24	116	58	67	33	99.4	49	105.7	53	35	18
60	269	cohesionless	120	60	1	0	122	60	55	28	137	68	79	39	117.8	58	124.1	62	42	21
65	264	cohesionless	139	69	1	0	141	70	63	32	158	79	91	45	136.8	68	143.1	72	49	25
70	259	cohesionless	164	82	8	3	172	85	77	39	193	96	112	55	165.9	82	174.3	87	57	29
75	254	cohesionless	197	98	8	3	205	102	92	46	231	115	133	66	193.6	96	207.5	104	69	35
80	249	cohesionless	233	116	8	3	241	120	108	54	271	135	156	78	223.1	111	242.9	121	81	41
85	244	cohesionless	270	135	8	3	278	139	125	63	313	156	181	90	257.2	128	280.8	140	95	48
90	239	cohesionless	311	155	8	3	319	159	143	72	358	179	207	103	297.4	148	320.9	160	109	55

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn => \Sigma\eta_i\gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

Integral End Bent 2

County: Hickman
Location: US - 51 Over Brush Creek
Item #: 1-10144

Date: 1/16/2023
Pile Size: HP 12X 53 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **329.1 ft**
Finished Grade Elevation: **335.9 ft**
Original Groundline Elevation: **334.2 ft**

								Static Analysis Method				Dynamic Testing Method						Uplift	
							R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing															
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	329	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
20	309	cohesionless	10	5	1	0	11	5	5	3	13	6	7	3	9.9	4	11.6	6	4	2
25	304	cohesionless	16	8	1	0	18	8	8	4	20	9	12	5	15.1	7	17.9	9	6	3
30	299	cohesionless	24	12	1	0	26	12	12	6	29	14	17	8	21.8	10	25.9	13	8	4
35	294	cohesionless	35	17	2	1	37	18	17	9	42	20	24	12	32.3	16	37.3	19	12	6
40	289	cohesionless	49	24	2	1	51	25	23	12	57	28	33	16	46.1	23	51.1	26	17	9
45	284	cohesionless	64	31	1	0	65	32	29	15	73	36	42	21	60.3	30	65.3	33	22	11
50	238	cohesionless	78	38	1	0	79	39	36	18	89	44	51	25	74.4	37	79.4	40	27	14
55	274	cohesionless	92	46	1	0	94	46	42	21	106	52	61	30	89.1	44	94.1	47	32	16
60	269	cohesionless	111	55	1	0	112	56	50	25	126	63	73	36	107.2	53	112.3	56	39	20
65	264	cohesionless	130	65	1	0	132	65	59	30	148	74	86	42	127.0	63	132.1	66	46	23
70	259	cohesionless	155	77	8	3	163	81	74	37	184	91	106	53	158.5	79	163.6	82	54	27
75	254	cohesionless	188	93	8	3	196	97	88	44	220	110	127	63	191.1	95	196.1	98	66	33
80	249	cohesionless	223	111	8	3	231	115	104	52	260	129	150	74	225.9	112	230.9	115	78	39

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn => \Sigma n_i Y_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

Integral End Bent 1

County: Hickman
Location: US - 51 Over Brush Creek
Item #: 1-10144

Date: 1/16/2023
Pile Size: HP 14X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **329.1** ft
Finished Grade Elevation: **335.9** ft
Original Groundline Elevation: **334.5** ft

								Static Analysis Method				Dynamic Testing Method						Uplift	
							R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Nominal Side Resistance		Nominal End Bearing															
			Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	329	cohesive	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
20	309	cohesionless	16	7	2	1	18	9	8	4	21	10	12	5	17.1	8	21.2	11	6	3
25	304	cohesionless	25	12	2	1	27	13	12	6	31	15	18	8	24.4	12	30.0	15	9	5
30	299	cohesionless	36	17	2	1	38	19	17	9	43	21	25	12	33.7	16	41.1	21	13	7
35	294	cohesionless	51	25	4	1	55	27	25	13	62	30	36	17	48.9	24	57.5	29	18	9
40	289	cohesionless	72	35	4	1	76	37	34	17	85	42	49	24	69.8	34	78.5	39	25	13
45	284	cohesionless	95	47	4	1	99	49	44	22	111	55	64	32	92.8	46	101.5	51	33	17
50	238	cohesionless	119	59	4	1	123	61	55	28	138	69	80	39	117.1	58	125.8	63	42	21
55	274	cohesionless	146	73	4	1	150	74	67	34	169	84	97	48	144.1	72	152.8	76	51	26
60	269	cohesionless	174	86	2	1	176	88	79	40	198	99	115	57	170.4	85	179.1	90	61	31
65	264	cohesionless	201	100	2	1	203	101	91	46	229	114	132	66	197.5	98	206.2	103	70	35
70	259	cohesionless	237	118	13	6	250	125	113	57	282	140	163	81	241.4	120	253.2	127	83	42
75	254	cohesionless	286	143	13	6	300	149	135	68	337	168	195	97	282.6	141	302.6	151	100	50
80	249	cohesionless	339	169	13	6	353	176	159	80	397	198	229	114	326.6	163	355.4	178	119	60
85	244	cohesionless	396	197	13	6	409	204	184	92	460	230	266	132	377.4	188	411.8	206	138	69
90	239	cohesionless	455	227	13	6	469	234	211	106	527	263	305	152	437.2	218	471.6	236	159	80

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

LRFD Pile Capacities (For Friction Piles)

Integral End Bent 2

County: Hickman
Location: US - 51 Over Brush Creek
Item #: 1-10144

Date: 1/16/2023
Pile Size: HP 14X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **329.1** ft
Finished Grade Elevation: **335.9** ft
Original Groundline Elevation: **334.2** ft

								Static Analysis Method				Dynamic Testing Method						Uplift	
			Nominal Side Resistance		Nominal End Bearing		R_n Total Nominal Geotechnical Axial Resistance **		ϕR_n for design: Total Factored Geotechnical Axial Resistance (Static Analysis Method)		Field Verification Values: FHWA Modified Gates Formula Calculated Resistance		ϕR_n for design: Total Factored Geotechnical Axial Resistance Dynamic Testing Method		Field Verification Values (EOD) End of Driving Nominal Resistance		Field Verification Values (BOR) Beginning of Restrike Nominal Resistance		ϕR_n for design: Total Factored Geotechnical Uplift Resistance (Static Analysis Method)	
Depth Below Pile Cap (ft)	Approximate Elevation (ft)	Soil Type	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons	Kips	Tons
0	329	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
20	309	cohesionless	15	7	2	0	16	8	7	4	19	9	11	5	14.3	7	16.8	8	5	3
25	304	cohesionless	23	11	2	1	26	12	12	6	29	14	17	8	22.0	10	25.9	13	8	4
30	299	cohesionless	34	17	2	1	37	18	17	9	42	20	24	11	31.4	15	37.2	19	12	6
35	294	cohesionless	50	24	4	1	54	26	24	12	60	30	35	17	46.9	23	54.0	27	17	9
40	289	cohesionless	70	35	4	1	74	36	33	17	83	41	48	24	67.0	33	74.2	37	25	13
45	284	cohesionless	92	45	2	1	94	47	42	21	106	53	61	30	87.5	43	94.7	47	32	16
50	238	cohesionless	112	56	2	1	115	57	52	26	129	64	74	37	107.7	53	114.9	57	39	20
55	274	cohesionless	133	66	2	1	135	67	61	31	152	76	88	44	128.6	64	135.8	68	47	24
60	269	cohesionless	159	79	2	1	161	80	73	37	182	90	105	52	154.6	77	161.8	81	56	28
65	264	cohesionless	188	93	2	1	190	94	85	43	214	106	123	61	183.1	91	190.2	95	66	33
70	259	cohesionless	224	112	13	6	237	118	107	54	267	133	154	77	230.6	115	237.8	119	78	39
75	254	cohesionless	273	136	13	6	286	142	129	65	322	160	186	92	279.0	139	286.2	143	95	48
80	249	cohesionless	325	162	13	6	338	168	152	76	380	190	220	109	331.0	165	338.1	169	114	57
85	244	cohesionless	380	189	13	6	393	196	177	89	442	221	256	127	386.4	193	393.6	197	133	67
90	239	cohesionless	439	219	13	6	452	226	203	102	509	254	294	146	445.3	222	452.4	226	154	77

Factors:

All Capacities are for a Single Pile

Axial Capacity	Static Analysis Method	Gates Analysis Method	Dynamic Analysis Method
Skin Friction and End Bearing in Clays, a-Method (Tomlinson/Skempton)	0.35	0.40	0.65
Skin Friction and End Bearing in Sands, Nordlund/Thurman Method	0.45	0.40	0.65

Uplift Resistance

Clays, a-Method (Tomlinson/Skempton)	0.25
Sands, Nordlund Method	0.35

Driving Resistance Reductions

Cohesive Soils	0.5
Cohesionless Soils	0.25

How to use this table:

Choose the total factored geotechnical axial resistance that equals or exceeds the total factored loads at the strength limit state ($\phi Rn \Rightarrow \Sigma \eta_i \gamma_i Q_i$) and use the corresponding depth below pile cap plus the required pile embedment into pile cap to estimate pile tip elevations and the lengths of pile required. The geotechnical report may recommend highest allowable pile tip elevations. Deeper pile tip elevations may be needed to address scour, lateral loads, seismic, and other loading conditions, If the total factored geotechnical axial resistance is chosen from the Static Analysis Method column, then field verification shall be conducted using the FHWA Modified Gates Formula. If the total factored geotecnical axial resistance is chosen from the Dynamic Testing Method column, then field verification by dynamic testing methods is required.

Side Friction Through Embankment Layers (kips): 0

Note: Reported nominal capacities have been adjusted. They are reducted to account or the effects of scour and side friction accumulated through embankment layers has been neglected

*If base of pile cap varies from plan elevation by more than five feet contact the geotechnical engineer for re-evaluation of capacities

** Value calculated using static method

COORDINATE DATA SUBMISSION FORM
KYTC DIVISION OF STRUCTURAL DESIGN - GEOTECHNICAL BRANCH

County Hickman Date 1/19/2023

Road Number US 51

Survey Crew / Consultant BFW

Contact Person Chris Farmer

Item # 01-10144

Mars#

Project #

Notes:

(circle one)
Elevation Datum **NAVD88** **Assumed**

HOLE NUMBER	LATITUDE (Decimal Degrees)	LONGITUDE (Decimal Degrees)	HOLE NUMBER	STATION	OFFSET	ELEVATION (FT)
SINGLE SPAN BRIDGE - US 51 OVER BRUSH CREEK						
1001	36.7261330°N	88.9999214°W	1001	50+13.86	25.08' RT	334.22
1002	36.7259540°N	89.0000860°W	1002	49+48.42	22.58' LT	334.52

MATERIAL SUMMARY

CONTRACT ID: 245353 **STP BRZ 9030 (469)** **BR05108122400**

KY 812 ADDRESS DEFICIENCIES OF KY 812 OVER NORTH FORK CANOE CREEK (051B00128N) BRIDGE REPLACEMENT, A DISTANCE OF .09 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0005	00001	DGA BASE	415.00	TON
0010	00020	TRAFFIC BOUND BASE	72.00	TON
0015	00100	ASPHALT SEAL AGGREGATE	6.00	TON
0020	00103	ASPHALT SEAL COAT	1.00	TON
0025	00212	CL2 ASPH BASE 1.00D PG64-22	987.00	TON
0030	00301	CL2 ASPH SURF 0.38D PG64-22	91.00	TON
0035	00445	ENTRANCE PIPE-30 IN	30.00	LF
0040	01791	ADJUST MANHOLE FRAME TO GRADE	1.00	EACH
0045	01810	STANDARD CURB AND GUTTER	60.00	LF
0050	02200	ROADWAY EXCAVATION	431.00	CUYD
0055	02231	STRUCTURE GRANULAR BACKFILL	61.00	CUYD
0060	02351	GUARDRAIL-STEEL W BEAM-S FACE	287.50	LF
0065	02360	GUARDRAIL TERMINAL SECTION NO 1	3.00	EACH
0070	02367	GUARDRAIL END TREATMENT TYPE 1	1.00	EACH
0075	02381	REMOVE GUARDRAIL	194.00	LF
0080	02429	RIGHT-OF-WAY MONUMENT TYPE 1	2.00	EACH
0085	02432	WITNESS POST	2.00	EACH
0090	02483	CHANNEL LINING CLASS II	13.00	TON
0095	02545	CLEARING AND GRUBBING - APPROX LESS THAN 1 ACRE	1.00	LS
0100	02565	OBJECT MARKER TYPE 2	4.00	EACH
0105	02585	EDGE KEY	40.00	LF
0110	02602	FABRIC-GEOTEXTILE CLASS 1	382.00	SQYD
0115	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS
0120	02676	MOBILIZATION FOR MILL & TEXT	1.00	LS
0125	02677	ASPHALT PAVE MILLING & TEXTURING	65.00	TON
0130	02720	SIDEWALK-4 IN CONCRETE	42.20	SQYD
0135	02726	STAKING	1.00	LS
0140	02731	REMOVE STRUCTURE	1.00	LS
0145	03299	ARMORED EDGE FOR CONCRETE	55.40	LF
0150	06514	PAVE STRIPING-PERM PAINT-4 IN	1,088.00	LF
0155	08003	FOUNDATION PREPARATION	1.00	LS
0160	08019	CYCLOPEAN STONE RIP RAP	396.00	TON
0165	08033	TEST PILES	210.00	LF
0170	08039	PRE-DRILLING FOR PILES	770.00	LF
0175	08046	PILES-STEEL HP12X53	1,140.00	LF
0180	08094	PILE POINTS-12 IN	28.00	EACH
0185	08100	CONCRETE-CLASS A	159.90	CUYD
0190	08104	CONCRETE-CLASS AA	40.10	CUYD
0195	08150	STEEL REINFORCEMENT	15,454.00	LB
0200	08151	STEEL REINFORCEMENT-EPOXY COATED	7,386.00	LB
0205	08661	PRECAST PC BOX BEAM CB12-48	368.50	LF
0210	08662	PRECAST PC BOX BEAM CB17-48	239.50	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0215	14003	W CAP EXISTING MAIN	2.00	EACH
0220	14019	W FIRE HYDRANT ASSEMBLY	1.00	EACH
0225	14062	W PIPE PVC 12 INCH	339.00	LF
0230	14097	W TIE-IN 12 INCH	2.00	EACH
0235	14108	W VALVE 12 INCH	1.00	EACH
0240	14120	W VALVE CUT-IN 12 INCH	1.00	EACH
0245	14152	W SERV COPPER SHORT SIDE 3/4 IN	1.00	EACH
0250	14636	W SPECIAL ITEM INST	2.00	EACH
0255	17046	EC POLE REMOVE	1.00	EACH
0260	20191ED	OBJECT MARKER TY 3	1.00	EACH
0265	21415ND	EROSION CONTROL	1.00	LS
0270	22883EN	CONCRETE WEDGE CURB	141.00	LF
0275	23158ES505	DETECTABLE WARNINGS	10.00	SQFT
0280	23378EC	CONCRETE SEALING	2,808.00	SQFT
0285	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	.50	TON
0290	25017ED	RAIL SYSTEM SIDE MOUNTED MGS	203.00	LF
0295	26233EC	MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS
0300	02569	DEMOBILIZATION	1.00	LS

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

STANDARD SPECIFICATIONS

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2019* and *Standard Drawings, Edition of 2020.*

SUPPLEMENTAL SPECIFICATIONS

The contractor shall use the Supplemental Specifications that are effective at the time of letting. The Supplemental Specifications can be found at the following link:
http://transportation.ky.gov/Construction/Pages/Kentucky-Standard-Specifications.aspx

1I

SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

1.0 DESCRIPTION. Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
3) Provide a controller consisting of:
   a) Keyboard or keypad.
   b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
   c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
   d) Logic circuitry to control the sequence of messages and flash rate.
4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates.
5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.
9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
11) Provide a photocell control to provide automatic dimming.

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12) Allow an on-off flashing sequence at an adjustable rate.
13) Provide a sight to aim the message.
14) Provide a LED display color of approximately 590 nm amber.
15) Provide a controller that is password protected.
16) Provide a security device that prevents unauthorized individuals from accessing the controller.
17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

/KEEP/RIGHT/⇒⇒⇒/
/KEEP/LEFT/⇐⇐⇐/
/LOOSE/GRAVEL/AHEAD/
/RD WORK/NEXT/**MILES/
/TWO WAY/TRAFFIC/AHEAD/
/PAINT/CREW/AHEAD/
/REDUCE/SPEED/**MPH/
/BRIDGE/WORK/***0 FT/
/MAX/SPEED/**MPH/
/SURVEY/PARTY/AHEAD/
/MIN/SPEED/**MPH/
/ICY/BRIDGE/AHEAD/ /ONE LANE/BRIDGE/AHEAD/
/ROUGH/ROAD/AHEAD/
/MERGING/TRAFFIC/AHEAD/
/NEXT/***/MILES/
/HEAVY/TRAFFIC/AHEAD/
/SPEED/LIMIT/**MPH/
/BUMP/AHEAD/
/TWO/WAY/TRAFFIC/

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

2.3 Power.

1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

3.0 CONSTRUCTION. Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be

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the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

5.0 PAYMENT. The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

SPECIAL PROVISION FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES

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

1.0 DESCRIPTION. Construct a soil, granular, or rock embankment with soil, granular or cohesive pile core and place structure granular backfill, as the Plans require. Construct the embankment according to the requirements of this Special Provision, the Plans, Standard Drawing RGX 100 and 105, and the Standard Specifications, Current Edition.

2.0 MATERIALS.

2.1 Granular Embankment. Conform to Subsection 805.10. When Granular Embankment materials are erodible or unstable according to Subsection 805.03.04, use the Special Construction Methods found in 3.2 of the Special Provision.

2.2 Rock Embankment. Provide durable rock from roadway excavation that consists principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.

2.3 Pile Core. Provide a pile core in the area of the embankments where deep foundations are to be installed unless otherwise specified. The Pile Core is the zone indicated on Standard Drawings RGX 100 and 105 designated as Pile Core. Material control of the pile core area during embankment construction is always required. Proper Pile Core construction is required for installation of foundation elements such as drilled or driven piles or drilled shafts. The type of material used to construct the pile core is as directed in the plans or below. Typically, the pile core area will be constructed from the same material used to construct the surrounding embankment. Pile Core can be classified as one of three types:

A) Pile Core - Conform to Section 206 of the Standard Specifications. Provide pile core material consisting of the same material as the adjacent embankment except the material in the pile core area shall be free of boulders or particle sizes larger than 4 inches in any dimension or any other obstructions that may hinder pile driving operations. If the pile core material hinders pile driving operations, take the appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

B) Granular Pile Core. Granular pile core is required only when specified in the plans. Select a gradation of durable rock to facilitate pile driving that conforms to Subsection 805.11. If granular pile core material hinders pile driving operations, take appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

C) Cohesive Pile Core. Cohesive Pile Core is required only when specified in the plans. Conform to Section 206 of the Standard Specifications and use soil with at least 50 percent passing a No. 4 sieve having a minimum Plasticity Index (PI) of 10. In addition, keep the cohesive pile core free of boulders, larger than 4 inches in any dimension, or any other obstructions, which would interfere with drilling operations. If cohesive pile core material interferes with drilling operations, take appropriate means necessary to maintain

excavation stability, at no expense to the Department.

2.4 Structure Granular Backfill. Conform to Subsection 805.11

2.5 Geotextile Fabric. Conform to Type I or Type IV in Section 214 and 843.

3.0 CONSTRUCTION.

3.1 General. Construct roadway embankments at end bents according to Section 206 and in accordance with the Special Provision, the Plans, and Standard Drawings for the full embankment section. In some instances, granular or rock embankment will be required for embankment construction for stability purposes, but this special provision does not prevent the use of soil when appropriate. Refer to the plans for specific details regarding material requirements for embankment construction.

Place and compact the pile core and structure granular backfill according to the applicable density requirements for the project. If the embankment and pile core are dissimilar materials (i.e., a granular pile core is used with a soil embankment or a cohesive pile core is used with a granular embankment), a Geotextile Fabric, Type IV, will be required between the pile core and embankment in accordance with Sections 214 and 843 of the Standard Specifications.

When granular or rock embankment is required for embankment construction, conform to the general requirements of Subsection 206.03.02 B. In addition, place the material in no greater than 2-foot loose lifts and compact with a vibrating smooth wheel roller capable of producing a minimum centrifugal force of 15 tons. Apply these requirements to the full width of the embankment for a distance of half the embankment height or 50 feet, whichever is greater, as shown on Standard Drawing RGX-105.

When using granular pile core, install 8-inch perforated underdrain pipe at or near the elevation of the original ground in the approximate locations depicted on the standard drawing, and as the Engineer directs, to ensure positive drainage of the embankment. Wrap the perforated pipe with a fabric of a type recommended by the pipe manufacturer.

After constructing the embankment, excavate for the end bent cap, drive piling, install shafts or other foundation elements, place the mortar bed, construct the end bent, and complete the embankment to finish grade according to the construction sequence shown on the Plans or Standard Drawings and as specified hereinafter.

Certain projects may require widening of existing embankments and the removal of substructures. Construct embankment according to the plans. Substructure removal shall be completed according to the plans and Section 203. Excavation may be required at the existing embankment in order to place the structure granular backfill as shown in the Standard Drawings.

After piles are driven or shafts installed (see design drawings), slope the bottom of the excavation towards the ends of the trench as noted on the plans for drainage. Using a separate pour, place concrete mortar, or any class concrete, to provide a base for forming and placing the cap. Place side forms for the end bent after the mortar has set sufficiently to support workmen and forms without being disturbed.

Install 4-inch perforated pipe in accordance with the plans and Standard Drawings. In the event slope protection extends above the elevation of the perforated pipe, extend the pipe through the slope protection.

After placing the end bent cap and achieving required concrete cylinder strengths, remove adjacent forms and fill the excavation with compacted structure granular backfill material (maximum 1’ loose lifts) to the level of the berm prior to placing beams for the bridge. Place Type IV geotextile fabric between embankment material and structure granular backfill. After completing the end bent backwall, or after completing the span end

wall, place the compacted structure granular backfill (maximum 1' loose lifts) to subgrade elevation. If the original excavation is enlarged, fill the entire volume with compacted structure granular backfill (maximum 1' loose lifts) at no expense to the Department. Do not place backfill before removing adjacent form work. Place structure granular backfill material in trench ditches at the ends of the excavation. Place Geotextile Fabric, Type IV over the surface of the compacted structure granular backfill prior to placing aggregate base course.

Tamp the backfill with hand tampers, pneumatic tampers, or other means approved by the Engineer. Thoroughly compact the backfill under the overhanging portions of the structure to ensure that the backfill is in intimate contact with the sides of the structure.

Do not apply seeding, sodding, or other vegetation to the exposed granular embankment.

3.2 Special Construction Methods. Erodible or unstable materials may erode even when protected by riprap or channel lining; use the special construction method described below when using these materials.

Use fine aggregates or friable sandstone granular embankment at "dry land" structures only. Do not use them at stream crossings or locations subject to flood waters.

For erodible or unstable materials having 50 percent or more passing the No. 4 sieve, protect with geotextile fabric. Extend the fabric from the original ground to the top of slope over the entire area of the embankment slopes on each side of, and in front of, the end bent. Cover the fabric with at least 12 inches of non-erodible material.

For erodible or unstable materials having less than 50 percent passing a No. 4 sieve, cover with at least 12 inches of non-erodible material.

Where erodible or unstable granular embankment will be protected by riprap or channel lining, place Type IV geotextile fabric between the embankment and the specified slope protection.

4.0 MEASUREMENT.

4.1 Granular Embankment. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment any Granular Embankment that is not called for in the plans.

The Department will not measure for payment any special construction caused by using erodible or unstable materials and will consider it incidental to the Granular Embankment regardless of whether the erodible or unstable material was specified or permitted.

4.2 Rock Embankment. The Department will not measure for payment any rock embankment and will consider it incidental to roadway excavation or embankment in place, as applicable. Rock embankments will be constructed using granular embankment on projects where there is no available rock present within the excavation limits of the project.

4.3 Pile Core. Pile core will be measured and paid under roadway excavation or embankment in place, as applicable. The Department will not measure the pile core for separate payment. The Department will not measure for payment the 8-inch perforated underdrain pipe and will consider it incidental to the Pile Core.

4.4 Structure Granular Backfill. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure any additional material required for backfill outside the limits shown on the Plans and Standard Drawings for payment and will

consider it incidental to the work.

The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Structure Granular Backfill.

4.5 Geotextile Fabric. The Department will not measure the quantity of fabric used for separating dissimilar materials when constructing the embankment and pile core and will consider it incidental to embankment construction.

The Department will not measure for payment the Geotextile Fabric used to separate the Structure Granular Backfill from the embankment and aggregate base course and will consider it incidental to Structure Granular Backfill.

The Department will not measure for payment the Geotextile Fabric required for construction with erodible or unstable materials and will consider it incidental to embankment construction.

4.6 End Bent. The Department will measure the quantities according to the Contract. The Department will not measure furnishing and placing the 2-inch mortar or concrete bed for payment and will consider it incidental to the end bent construction.

4.7 Structure Excavation. The Department will not measure structure excavation on new embankments for payment and will consider it incidental to the Structure Granular Backfill or Concrete as applicable.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
02223	Granular Embankment	Cubic Yards
02231	Structure Granular Backfill	Cubic Yards

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

September 16, 2016

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 – Revised October 23, 2023

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the “Statement of Compliance” required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

EMPLOYMENT REQUIREMENTS
RELATING TO
NONDISCRIMINATION OF EMPLOYEES
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)

AN ACT OF THE KENTUCKY GENERAL ASSEMBLY TO PREVENT DISCRIMINATION IN EMPLOYMENT

KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (forty and above); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age forty (40) and over. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, except that such a notice or advertisement may indicate a preference, limitation, or specification based on religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, when religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age forty (40) and over, in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

Revised: January 25, 2017

Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq*.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

No present or former public servant shall, within six (6) months following termination of his office or employment, accept employment, compensation, or other economic benefit from any person or business that contracts or does business with, or is regulated by, the state in matters in which he was directly involved during the last thirty-six (36) months of his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, or for which he received, prior to his state employment, a professional degree or license, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his tenure in state government. This subsection shall not prohibit the performance of ministerial functions, including but not limited to filing tax returns, filing applications for permits or licenses, or filing incorporation papers, nor shall it prohibit the former officer or public servant from receiving public funds disbursed through entitlement programs.

KRS 11A.040 (9) states:

A former public servant shall not represent a person or business before a state agency in a matter in which the former public servant was directly involved during the last thirty-six (36) months of his tenure, for a period of one (1) year after the latter of:

a) The date of leaving office or termination of employment; or
b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, 1025 Capital Center Drive, Suite 104, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: May 23, 2022

"General Decision Number: KY20240040 03/15/2024

Superseded General Decision Number: KY20230040

State: Kentucky

Construction Type: Highway

Counties: Allen, Ballard, Butler, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Edmonson, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Logan, Lyon, Marshall, McCracken, McLean, Muhlenberg, Ohio, Simpson, Todd, Trigg, Union, Warren and Webster Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2024
1	02/09/2024
2	03/15/2024

BRIN0004-002 06/01/2023

BALLARD, BUTLER, CALDWELL, CARLISLE, CRITTENDEN, DAVIESS, EDMONSON, FULTON, GRAVES, HANCOCK, HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN, MCLEAN, MUHLENBERG, OHIO, UNION, and WEBSTER COUNTIES

	Rates	Fringes
BRICKLAYER		
Ballard, Caldwell, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, Marshall, and McCracken Counties	$ 34.17	19.60
Butler, Edmonson, Hopkins, Muhlenberg, and Ohio Counties	$ 32.28	15.95
Daviess, Hancock, Henderson, McLean, Union, and Webster Counties	$ 34.17	19.60

BRTN0004-005 06/01/2023

ALLEN, CALLOWAY, CHRISTIAN, LOGAN, SIMPSON, TODD, TRIGG, and WARREN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.28	15.95

CARP0357-002 04/01/2023

	Rates	Fringes
CARPENTER	$ 31.81	22.86
DIVER	$ 48.09	22.86
PILEDRIVERMAN	$ 32.06	22.86

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* ELEC0369-006 05/28/2023

BUTLER, EDMONSON, LOGAN, TODD & WARREN COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 35.39	20.45

ELEC0429-001 06/01/2022

ALLEN & SIMPSON COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 31.55	14.08

ELEC0816-002 07/01/2023

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON (Except a 5 mile radius of City Hall in Fulton), GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 34.94	28%+8.35

Cable spicers receive $.25 per hour additional.

ELEC1701-003 07/01/2023

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO, UNION & WEBSTER COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 35.60	8.35+30.8%

Cable spicers receive $.25 per hour additional.

ELEC1925-002 01/01/2024

FULTON COUNTY (Up to a 5 mile radius of City Hall in Fulton):

	Rates	Fringes
CABLE SPLICER	$ 28.20	15.27
ELECTRICIAN	$ 27.95	15.26

ENGI0181-017 07/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 38.55	18.60
GROUP 2	$ 35.69	18.60
GROUP 3	$ 36.14	18.60
GROUP 4	$ 35.37	18.60

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Cherry Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loaders; Grade-All; Gurries; Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel

Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Conrete Pump; Skid Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points;& Whirley Oiler

GROUP 3 -All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling equals or exceeds 150 ft. - $1.00 above Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10% ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

IRON0070-005 06/01/2023

BUTLER COUNTY (Eastern eighth, including the Townships of Decker, Lee & Tilford);
EDMONSON COUNTY (Northern three-fourths, including the Townships of Asphalt, Bee Spring, Brownsville, Grassland, Huff, Kyrock, Lindseyville, Mammoth Cave, Ollie, Prosperity, Rhoda, Sunfish & Sweden)

	Rates	Fringes
IRONWORKER		
Structural; Ornamental; Reinforcing; Precast Concrete Erectors	$ 32.59	24.50

IRON0103-004 04/01/2023

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, OHIO, UNION &

WEBSTER COUNTIES
BUTLER COUNTY (Townships of Aberdeen, Bancock, Casey, Dexterville, Dunbar, Elfie, Gilstrap, Huntsville, Logansport, Monford, Morgantown, Provo, Rochester, South Hill & Welchs Creek);
CALDWELL COUNTY (Northeastern third, including the Township of Creswell);
CHRISTIAN COUNTY (Northern third, including the Townships of Apex, Crofton, Kelly, Mannington & Wynns);
CRITTENDEN COUNTY (Northeastern half, including the Townships of Grove, Mattoon, Repton, Shady Grove & Tribune);
MUHLENBERG COUNTY (Townships of Bavier, Beech Creek Junction, Benton, Brennen, Browder, Central City, Cleaton, Depoy, Drakesboro, Eunis, Graham, Hillside, Luzerne, Lynn City, Martwick, McNary, Millport, Moorman, Nelson, Paradise, Powderly, South Carrollton, Tarina & Weir)

	Rates	Fringes
Ironworkers:	$ 31.99	26.20

IRON0492-003 05/01/2023

ALLEN, LOGAN, SIMPSON, TODD & WARREN COUNTIES
BUTLER COUNTY (Southern third, including the Townships of Boston, Berrys Lick, Dimple, Jetson, Quality, Sharer, Sugar Grove & Woodbury);
CHRISTIAN COUNTY (Eastern two-thirds, including the Townships of Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
EDMONSON COUNTY (Southern fourth, including the Townships of Chalybeate & Rocky Hill);
MUHLENBERG COUNTY (Southern eighth, including the Townships of Dunnior, Penrod & Rosewood)

	Rates	Fringes
Ironworkers:	$ 32.53	17.23

IRON0782-006 08/01/2023

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES
CALDWELL COUNTY (Southwestern two-thirds, including the Townships of Cedar Bluff, Cider, Claxton, Cobb, Crowtown, Dulaney, Farmersville, Fredonia, McGowan, Otter Pond & Princeton);
CHRISTIAN COUNTY (Western third, Excluding the Townships of Apex, Crofton, Kelly, Mannington, Wynns, Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
CRITTENDEN COUNTY (Southwestern half, including the Townships of Crayne, Dycusburg, Frances, Marion, Mexico, Midway, Sheridan & Told)

	Rates	Fringes
Ironworkers:		
Projects with a total contract cost of $20,000,000.00 or above.....	$ 34.75	25.52
All Other Work.....	$ 33.01	25.52

LABO0189-005 07/01/2023

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN,
LIVINGSTON, LYON, MARSHALL & MCCRACKEN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.96	17.57
GROUP 2	$ 24.21	17.57
GROUP 3	$ 24.26	17.57
GROUP 4	$ 24.86	17.57

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0189-006 07/01/2023

ALLEN, BUTLER, CALDWELL, CHRISTIAN, DAVIESS, EDMONSON, HANCOCK,
HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, SIMPSON, TODD, TRIGG
& WARREN COUNTIES

	Rates	Fringes

Laborers:

GROUP 1	$ 23.96	17.57
GROUP 2	$ 24.26	17.57
GROUP 3	$ 24.21	17.57
GROUP 4	$ 24.86	17.57

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0561-001 07/01/2023

CRITTENDEN, HENDERSON, UNION & WEBSTER COUNTIES

Laborers:

	Rates	Fringes
GROUP 1	$ 24.81	17.60
GROUP 2	$ 25.06	17.60
GROUP 3	$ 25.11	17.60
GROUP 4	$ 25.71	17.60

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear,

Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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PAIN0032-002 09/01/2023

BALLARD COUNTY

	Rates	Fringes
Painters:		
Bridges	$ 36.12	20.97
All Other Work	$ 33.82	20.97

Spray, Blast, Steam, High & Hazardous (Including Lead Abatement) and All Epoxy - $1.00 Premium

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PAIN0118-003 06/01/2014

EDMONSON COUNTY:

	Rates	Fringes
Painters:		
Brush & Roller	$ 18.50	11.97
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning	$ 19.50	11.97

PAIN0156-006 04/01/2023

DAVIESS, HANCOCK, HENDERSON, MCLEAN, OHIO, UNION & WEBSTER COUNTIES

	Rates	Fringes
Painters:		
BRIDGES		
GROUP 1	$ 28.45	20.08
GROUP 3	$ 29.45	20.08
GROUP 4	$ 30.70	20.08
ALL OTHER WORK:		
GROUP 1	$ 27.30	20.08
GROUP 2	$ 27.55	20.08
GROUP 3	$ 28.30	20.08
GROUP 4	$ 29.55	20.08

PAINTER CLASSIFICATIONS

GROUP 1 - Brush & Roller

GROUP 2 - Plasterers

GROUP 3 - Spray; Sandblast; Power Tools; Waterblast; Steamcleaning; Brush & Roller of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

GROUP 4 - Spray of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

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PAIN0500-002 06/01/2023

CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
Painters:		
Bridges	$ 30.00	15.40
All Other Work	$ 23.75	15.40

Waterblasting units with 3500 PSI and above - $.50 premium
Spraypainting and all abrasive blasting - $1.00 premium
Work 40 ft. and above ground level - $1.00 premium

PLUM0184-002 07/01/2023

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN and TRIGG COUNTIES

	Rates	Fringes
Plumber; Steamfitter	$ 39.86	18.98

PLUM0502-004 08/01/2021

ALLEN, BUTLER, EDMONSON, SIMPSON & WARREN

	Rates	Fringes
Plumber; Steamfitter	$ 38.07	20.78

PLUM0633-002 07/01/2022

DAVIESS, HANCOCK, HENDERSON, HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, TODD, UNION & WEBSTER COUNTIES:

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 33.97	19.30

TEAM0089-003 03/31/2023

ALLEN, BUTLER, EDMONSON, LOGAN, SIMPSON & WARREN COUNTIES

	Rates	Fringes
Truck drivers:		
Zone 1:		
Group 1	$ 23.22	25.56
Group 2	$ 23.40	25.56
Group 3	$ 23.48	25.56
Group 4	$ 23.50	25.56

GROUP 1 - Greaser; Tire Changer

GROUP 2 - Truck Mechanic; Single Axle Dump; Flat Bed; All Terrain Vehicles when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors

GROUP 3 - Mixer All Types

GROUP 4 - Winch and A-Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker; Euclid and Other Heavy Earth Moving Equipment; Low Boy; Articulator Cat; Five Axle Vehicle

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TEAM0215-003 03/31/2023

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO & WEBSTER COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 24.85	25.56
Group 2	$ 25.54	20.95
Group 3	$ 25.15	25.56
Group 4	$ 25.16	25.56

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors; Mixer All Types

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; 5 Axle Vehicle; Winch and A- Frame

when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker

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TEAM0236-001 03/31/2023

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN,TODD & TRIGG COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 23.22	25.56
Group 2	$ 23.40	25.56
Group 3	$ 23.48	25.56
Group 4	$ 23.50	25.56
Group 5	$ 23.50	25.56

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Drivers of Distributors

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; Five Axle Vehicle; Winch and A-Frame when used in transporting materials; Ross Carrier

GROUP 5: Mixer All Types

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

(29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date

for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION"

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

Overtime is to be paid to an employee at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek. Wage violations or questions should be directed to the designated Engineer or the undersigned.

Director
Division of Construction Procurement
Frankfort, Kentucky 40622
502-564-3500

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
5.2%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4, 3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Notification of Construction Contract Award Portal (NCAP) is OFCCP's preferred method for receiving construction contract award notifications. The NCAP can be found on OFCCP's website at https://www.dol.gov/agencies/ofccp/ncap. Users who prefer not to use the portal maintain the option to send their notifications via mail, email and facsimile to the OFCCP Regional office in which the work will be performed. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification must include: Prime Contract Number (issued by the federal agency or applicant); Name of Awarding Federal Agency, Applicant or Contractor; Contracting Officer, Applicant Representative or Contractor Representative Submitting Notification with name, phone number, email address; Contractor Awarded Contract or Subcontract with name, address, phone number, email address, EIN, dollar amount of the contract, estimated start date of the contract, estimated completion date of the contract, geographical area in which the contract is to be performed (state, county's city (if applicable)).
The notification shall be mailed to:

Regional Director
Office of Federal Contract Compliance Programs
61 Forsyth Street, SW, Suite 7B75
Atlanta, Georgia 30303-8931
Main Number: 404-893-4545 Fax: 404-893-4546
Regional Director Contact: OFCCP-SE@dol.gov
Construction Award Email: OFCCP-SE-ConstructionAward@dol.gov

4. As used in this Notice, and in the contract resulting from this solicitation, the **"covered area"** is Calloway County.

(Revised: 1/1/2023)

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
5.2%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4, 3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Notification of Construction Contract Award Portal (NCAP) is OFCCP's preferred method for receiving construction contract award notifications. The NCAP can be found on OFCCP's website at https://www.dol.gov/agencies/ofccp/ncap. Users who prefer not to use the portal maintain the option to send their notifications via mail, email and facsimile to the OFCCP Regional office in which the work will be performed. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification must include: Prime Contract Number (issued by the federal agency or applicant); Name of Awarding Federal Agency, Applicant or Contractor; Contracting Officer, Applicant Representative or Contractor Representative Submitting Notification with name, phone number, email address; Contractor Awarded Contract or Subcontract with name, address, phone number, email address, EIN, dollar amount of the contract, estimated start date of the contract, estimated completion date of the contract, geographical area in which the contract is to be performed (state, county's city (if applicable)).
The notification shall be mailed to:

Regional Director
Office of Federal Contract Compliance Programs
61 Forsyth Street, SW, Suite 7B75
Atlanta, Georgia 30303-8931
Main Number: 404-893-4545 Fax: 404-893-4546
Regional Director Contact: OFCCP-SE@dol.gov
Construction Award Email: OFCCP-SE-ConstructionAward@dol.gov

4. As used in this Notice, and in the contract resulting from this solicitation, the **"covered area"** is Hickman County.

(Revised: 1/1/2023)

PART IV

INSURANCE

Refer to
Kentucky Standard Specifications for Road and Bridge Construction,
current edition

PART V

BID ITEMS

PROPOSAL BID ITEMS

245355

Report Date 5/22/24

Section: 0001 - BRIDGE - 018B00018N

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	1,322.00	TON		$	
0020	00100		ASPHALT SEAL AGGREGATE	17.00	TON		$	
0030	00103		ASPHALT SEAL COAT	2.00	TON		$	
0040	00212		CL2 ASPH BASE 1.00D PG64-22	1,730.00	TON		$	
0050	00301		CL2 ASPH SURF 0.38D PG64-22	287.00	TON		$	
0060	00356		ASPHALT MATERIAL FOR TACK	6.00	TON		$	
0070	00440		ENTRANCE PIPE-15 IN	51.00	LF		$	
0080	00443		ENTRANCE PIPE-24 IN	32.00	LF		$	
0090	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	4.00	EACH		$	
0100	01990		DELINEATOR FOR BARRIER WALL-B/W	2.00	EACH		$	
0110	02101		CEM CONC ENT PAVEMENT-8 IN	20.00	SQYD		$	
0120	02200		ROADWAY EXCAVATION	1,615.00	CUYD		$	
0130	02231		STRUCTURE GRANULAR BACKFILL	65.00	CUYD		$	
0140	02351		GUARDRAIL-STEEL W BEAM-S FACE	100.00	LF		$	
0150	02367		GUARDRAIL END TREATMENT TYPE 1	4.00	EACH		$	
0160	02381		REMOVE GUARDRAIL	1,007.00	LF		$	
0170	02396		REMOVE GUARDRAIL END TREATMENT	4.00	EACH		$	
0180	02545		CLEARING AND GRUBBING APPROX LESS THAN 1 ACRE	1.00	LS		$	
0190	02585		EDGE KEY	44.00	LF		$	
0200	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0210	02651		DIVERSIONS (BY-PASS DETOURS)	1.00	LS		$	
0220	02726		STAKING	1.00	LS		$	
0230	02731		REMOVE STRUCTURE	1.00	LS		$	
0240	03299		ARMORED EDGE FOR CONCRETE	48.00	LF		$	
0250	08003		FOUNDATION PREPARATION	1.00	LS		$	
0260	08019		CYCLOPEAN STONE RIP RAP	459.00	TON		$	
0270	08033		TEST PILES	300.00	LF		$	
0280	08051		PILES-STEEL HP14X89	1,467.00	LF		$	
0290	08100		CONCRETE-CLASS A	150.60	CUYD		$	
0300	08104		CONCRETE-CLASS AA	115.10	CUYD		$	
0310	08150		STEEL REINFORCEMENT	14,855.00	LB		$	
0320	08151		STEEL REINFORCEMENT-EPOXY COATED	34,993.00	LB		$	
0330	08668		PRECAST PC BOX BEAM SB17	505.40	LF		$	
0340	20191ED		OBJECT MARKER TY 3	4.00	EACH		$	
0350	20550ND		SAWCUT PAVEMENT	101.00	LF		$	
0360	21415ND		EROSION CONTROL	1.00	LS		$	
0370	23378EC		CONCRETE SEALING	8,541.00	SQFT		$	
0380	23813EC		DECK DRAIN	6.00	EACH		$	
0390	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	259.00	LF		$	
0400	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	4.00	EACH		$	

Section: 0002 - BRIDGE - 018B00023N

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT

PROPOSAL BID ITEMS

245355

Report Date 5/22/24

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	00003		CRUSHED STONE BASE	800.72	TON		$	
0420	00100		ASPHALT SEAL AGGREGATE	7.00	TON		$	
0430	00103		ASPHALT SEAL COAT	1.00	TON		$	
0440	00212		CL2 ASPH BASE 1.00D PG64-22	790.29	TON		$	
0450	00301		CL2 ASPH SURF 0.38D PG64-22	145.15	TON		$	
0460	00356		ASPHALT MATERIAL FOR TACK	2.00	TON		$	
0470	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	20.00	EACH		$	
0480	02200		ROADWAY EXCAVATION	765.03	CUYD		$	
0490	02231		STRUCTURE GRANULAR BACKFILL	170.00	CUYD		$	
0500	02351		GUARDRAIL-STEEL W BEAM-S FACE	768.00	LF		$	
0510	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	2.00	EACH		$	
0520	02381		REMOVE GUARDRAIL	868.00	LF		$	
0530	02545		CLEARING AND GRUBBING APPROX LESS THAN 1 ACRE	1.00	LS		$	
0540	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0550	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0560	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		$	
0570	02677		ASPHALT PAVE MILLING & TEXTURING	24.88	TON		$	
0580	02726		STAKING	1.00	LS		$	
0590	02731		REMOVE STRUCTURE	1.00	LS		$	
0600	03171		CONCRETE BARRIER WALL TYPE 9T	992.00	LF		$	
0610	03299		ARMORED EDGE FOR CONCRETE	192.00	LF		$	
0620	04820		TRENCHING AND BACKFILLING	260.00	LF		$	
0630	06515		PAVE STRIPING-PERM PAINT-6 IN	3,260.00	LF		$	
0640	08003		FOUNDATION PREPARATION	1.00	LS		$	
0650	08019		CYCLOPEAN STONE RIP RAP	610.00	TON		$	
0660	08033		TEST PILES	550.00	LF		$	
0670	08051		PILES-STEEL HP14X89	7,610.00	LF		$	
0680	08100		CONCRETE-CLASS A	474.00	CUYD		$	
0690	08104		CONCRETE-CLASS AA	353.00	CUYD		$	
0700	08130		MECHANICAL REINF COUPLER #5	268.00	EACH		$	
0710	08131		MECHANICAL REINF COUPLER #6	40.00	EACH		$	
0720	08133		MECHANICAL REINF COUPLER #8	140.00	EACH		$	
0730	08140		MECHANICAL REINF COUPLER #5 EPOXY COATED	675.00	EACH		$	
0740	08141		MECHANICAL REINF COUPLER #6 EPOXY COATED	655.00	EACH		$	
0750	08150		STEEL REINFORCEMENT	124,582.00	LB		$	
0760	08151		STEEL REINFORCEMENT-EPOXY COATED	120,786.00	LB		$	
0770	08500		APPROACH SLAB	178.00	SQYD		$	
0780	08671		PRECAST PC BOX BEAM SB33	1,616.00	LF		$	
0790	08901		CRASH CUSHION TY VI CLASS BT TL2	2.00	EACH		$	
0800	20550ND		SAWCUT PAVEMENT	50.50	LF		$	
0810	21077ED		FIBER OPTIC CABLE INSTALL FIBER OPTIC CABLE	1,810.00	LF		$	
0820	21415ND		EROSION CONTROL	1.00	LS		$	
0830	22668EN		DIRECTIONAL BORE HORIZONTAL DIRECTIONAL DRILL INSTALL ONLY	1,450.00	LF		$	
0840	23378EC		CONCRETE SEALING	25,269.00	SQFT		$	

245355

PROPOSAL BID ITEMS

Report Date 5/22/24

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0850	24405EC		MECHANICAL REINF COUPLER-#8 EPOXY COATED	18.00	EACH		$	
0860	24601EC		INSTALL INSTALL FIBER OPTIC MARKERS	4.00	EACH		$	
0870	24601EC		INSTALL INSTALL FIBER OPTIC SPLICE	2.00	EACH		$	
0880	24601EC		INSTALL INSTALL FIBER OPTIC VAULT	2.00	EACH		$	
0890	24617EC		INSTALL INSTALL DETECTABLE WARNING TAPE	260.00	LF		$	
0900	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	656.00	LF		$	
0910	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	4.00	EACH		$	
0920	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS		$	

Section: 0003 - BRIDGE - 053B00002N

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0930	00001		DGA BASE	659.00	TON		$	
0940	00020		TRAFFIC BOUND BASE	139.00	TON		$	
0950	00100		ASPHALT SEAL AGGREGATE	3.10	TON		$	
0960	00103		ASPHALT SEAL COAT	.50	TON		$	
0970	00212		CL2 ASPH BASE 1.00D PG64-22	262.00	TON		$	
0980	00301		CL2 ASPH SURF 0.38D PG64-22	178.00	TON		$	
0990	00474		CULVERT PIPE-72 IN	70.00	LF		$	
1000	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	8.00	EACH		$	
1010	02200		ROADWAY EXCAVATION	2,220.00	CUYD		$	
1020	02231		STRUCTURE GRANULAR BACKFILL	145.00	CUYD		$	
1030	02351		GUARDRAIL-STEEL W BEAM-S FACE	562.50	LF		$	
1040	02360		GUARDRAIL TERMINAL SECTION NO 1	2.00	EACH		$	
1050	02367		GUARDRAIL END TREATMENT TYPE 1	4.00	EACH		$	
1060	02381		REMOVE GUARDRAIL	339.00	LF		$	
1070	02397		TEMP GUARDRAIL	600.00	LF		$	
1080	02429		RIGHT-OF-WAY MONUMENT TYPE 1	13.00	EACH		$	
1090	02432		WITNESS POST	13.00	EACH		$	
1100	02484		CHANNEL LINING CLASS III	28.00	TON		$	
1110	02545		CLEARING AND GRUBBING APPROX LESS THAN 1 ACRE	1.00	LS		$	
1120	02585		EDGE KEY	44.00	LF		$	
1130	02602		FABRIC-GEOTEXTILE CLASS 1	382.00	SQYD		$	
1140	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
1150	02651		DIVERSIONS (BY-PASS DETOURS)	1.00	LS		$	
1160	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
1170	02726		STAKING	1.00	LS		$	
1180	02731		REMOVE STRUCTURE	1.00	LS		$	
1190	03299		ARMORED EDGE FOR CONCRETE	70.60	LF		$	
1200	06514		PAVE STRIPING-PERM PAINT-4 IN	4,880.00	LF		$	
1210	08003		FOUNDATION PREPARATION	1.00	LS		$	
1220	08019		CYCLOPEAN STONE RIP RAP	446.00	TON		$	

PROPOSAL BID ITEMS

245355

Report Date 5/22/24

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1230	08033		TEST PILES	164.00	LF		$	
1240	08051		PILES-STEEL HP14X89	1,078.00	LF		$	
1250	08100		CONCRETE-CLASS A	34.00	CUYD		$	
1260	08104		CONCRETE-CLASS AA	80.00	CUYD		$	
1270	08151		STEEL REINFORCEMENT-EPOXY COATED	23,446.00	LB		$	
1280	08671		PRECAST PC BOX BEAM SB33	294.00	LF		$	
1290	20191ED		OBJECT MARKER TY 3	4.00	EACH		$	
1300	21415ND		EROSION CONTROL	1.00	LS		$	
1310	22883EN		CONCRETE WEDGE CURB	674.00	LF		$	
1320	23378EC		CONCRETE SEALING	4,864.00	SQFT		$	
1330	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	1.00	TON		$	
1340	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	150.60	LF		$	
1350	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	4.00	EACH		$	
1360	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS		$	

Section: 0004 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1370	02568		MOBILIZATION	1.00	LS		$	
1380	02569		DEMOBILIZATION	1.00	LS		$	