CALL NO. 202

CONTRACT ID. 235320

HENDERSON - CALDWELL - MCLEAN COUNTIES

FED/STATE PROJECT NUMBER 121GR23D020-STP BRZ

DESCRIPTION VARIOUS ROUTES IN DISTRICT 2

WORK TYPE BRIDGE REPLACEMENT

PRIMARY COMPLETION DATE 5/31/2025

LETTING DATE: October 26,2023

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME October 26,2023. 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 - 02

CONTRACT ID - 235320

121GR23D020-STP BRZ

COUNTY - CALDWELL

PCN - BR01715922300
STP BRZ 9030 (426)

KY 1592 (MP 4.19) ADDRESS DEFICIENCIES OF KY 1592 OVER TOWERY BRANCH (017B00076N) (MP 4.27), A DISTANCE OF 0.08 MILES.BRIDGE REPLACEMENT SYP NO. 02-10065.00.

GEOGRAPHIC COORDINATES LATITUDE 37:18:44.00 LONGITUDE 87:50:37.00

ADT

COUNTY - HENDERSON

PCN - BR05101452300
STP BRZ 9030 (427)

KY 145 (MP 5.49) ADDRESS DEFICIENCIES OF KY 145 OVER BEAVER DAM CREEK (051B00119N) (MP 5.65), A DISTANCE OF 0.16 MILES.BRIDGE WITH GRADE, DRAIN & SURFACE SYP NO. 02-10091.00.

GEOGRAPHIC COORDINATES LATITUDE 37:42:25.00 LONGITUDE 87:41:46.00

ADT 561

COUNTY - MCLEAN

PCN - BR07500812300
STP BRZ 9030 (428)

KY 81 (MP 6.83) ADDRES DEFICIENCIES OF KY 81 OF SLOUGH (075B00025N) (MP 6.93), A DISTANCE OF 0.10 MILES.BRIDGE REPLACEMENT SYP NO. 02-10110.00.

GEOGRAPHIC COORDINATES LATITUDE 37:28:20.00 LONGITUDE 87:14:16.00

ADT 2,029

COMPLETION DATE(S):

COMPLETED BY 05/31/2025 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 fax (502) 564-7299 or 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/contract). 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.

SPECIAL NOTE – BUY AMERICA REQUIREMENTS AND BUILD AMERICA, BUY AMERICA (BABA) ACT 10/26/2023

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

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 [MRA(1)]

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. Melvin Bynes. Mr. Bynes' current contact information is email address – melvin.bynes2@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

2-10110 McLean 2-10065 Caldwell 2-10091 Henderson

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. Contrary to standard specifications, no direct payment would be made for the barrier wall and will be considered incidental to "Maintain and Control Traffic".

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

VI. PAVEMENT DROP-OFF

Less than two inches - no protection required. Warning signs should be placed in advance and throughout the drop-off area.
Two to four inches - plastic drums, vertical panels or barricades every 100 feet on tangent sections for speeds of 50 mph or greater. Cones may be used in place of plastic drums, panels, and barricades during daylight hours. For tangent sections with speeds less than 50 mph and curves devices should be placed every 50 feet. Spacing of devices on tapered sections should be in accordance with the manual on uniform traffic control devices, current edition.

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

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

VII. VARIABLE MESSAGE SIGNS AND TEMPORARY TRAFFIC SIGNALS

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

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

VIII. BARRICADES

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

VIII. DETOUR AND ON-SITE DIVERSIONS

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

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

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

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

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

IX. PAYMENT

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

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

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

SPECIAL NOTE FOR CONCRETE SEALING

2-10110 McLean 2-10065 Caldwell 2-10091 Henderson

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

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

This work consists of:

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

II. MATERIALS.

A. Sealer. Use one of the following:

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

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

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

III. CONSTRUCTION.

A. **Perform Concrete Repairs.** Repair concrete surface in accordance with the Special Note for Epoxy Injection Crack Repair and/or the Special Note for Concrete Patching Repair if included in the contract documents.

B. **Curing Compound.** Contrary to Section 609.03.12 of the specifications, curing compound is not to be used on the deck due to potentially causing issues with the concrete sealer. During the deck pour, finishing, and tining operations the Class AA concrete shall be kept continuously moist with the use of a mister until burlap or curing blankets are applied to the surface. At no point should water be pooling or running off the surface or the surface of the concrete be allowed to become dry. After the burlap or curing blankets are installed, cure in accordance with the specifications. Include all costs in the unit price bid for Class AA concrete. Failure to properly cure the concrete in accordance with this note and the specifications may result in weakened or cracked concrete. If the concrete is weakened or cracked due to improper curing, the contractor will be responsible for providing alternates to fix the issues to the Engineer for review and the contractor will be solely responsible for all costs to do so, up to complete replacement. Do not begin any construction on fixing any issues without approval of the Engineer.

C. **Apply Ordinary Surface Finish.** In addition to new concrete, areas receiving epoxy injection, concrete patching, and other surface imperfections, including areas of minor cracking, should receive Ordinary Surface Finish in accordance with Section 601.03.18 of the Standard Specifications. 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. **Cleaning the Concrete Surfaces to be sealed.** Dry clean the concrete to remove all loose debris. Remove all visible hydrocarbons from the surface with detergent approved by the manufacturer of the deck sealant. Pressure wash all surfaces to be sealed at 2000 to 3000 psi. Install pressure gauges at each wand to verify pressure. Use 30° fan tip or as recommended by the manufacturer of the sealant. Hold pressure washing wand a minimum of 45° from the surfaces with a maximum stand-off distance of 12 inches.

F. **Sealing the Concrete.** Allow new concrete to cure a minimum 28 days prior to application of sealer. Monitor weather conditions prior to sealer application. Refer to manufacturer's recommendations for proper ambient conditions. Do not apply sealer if precipitation is anticipated within the time stated by the manufacturer. Allow the concrete to dry 24 hours (after washing or rain event) before sealer application. The bridge deck can be reopened to traffic while drying. Sealer must be applied within 48 hours of washing or the concrete must be rewashed. Divide the concrete into predefined areas of specific square footage to aid in determining usage. Comply with manufacturer's usage recommendation. Using a low-pressure pump, apply sealer and spread evenly with broom or squeegee; do not allow pooling to remain. When each predefined area is complete, measure the amount of sealer used to verify proper usage. After sealing, follow manufacturer's recommended cure time before opening to traffic. On vertical surfaces, apply the sealer in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern.

G. **Inspection:** Monitor all aspects of the project to assure compliance to this specification. Observe and document general conditions during the entirety of the project. Verify that each phase of work has been satisfactorily completed prior to beginning the next phase. Phases are described as follows:

1. Dry cleaning to remove loose debris, verify and document:
   a. All debris has been removed and disposed of properly.
2. Removal of hydrocarbons, verify and document:

a. The manufacturer's recommended detergent is used for removal.
b. Hydrocarbons have been satisfactorily removed.

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

IV. MEASUREMENT

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

V. PAYMENT

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

SPECIAL NOTE FOR FOUNDATION PREPARATION

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

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

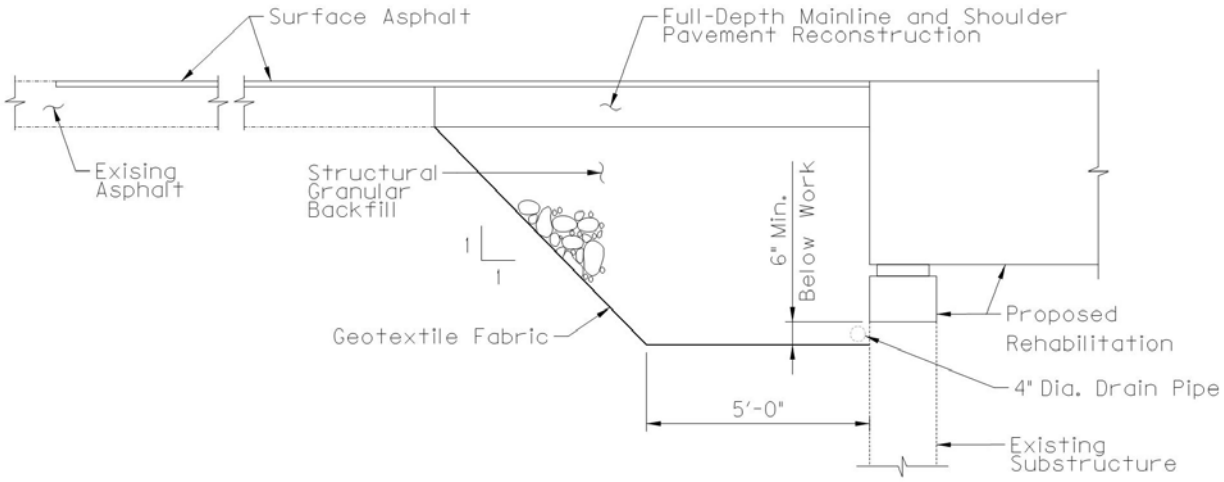


Figure 1: Detail showing proposed work for deck and superstructure replacements

I. MEASUREMENT

A. Foundation Preparation: See Section 603.

II. PAYMENT

A. Foundation Preparation: See Section 603. Payment for Structural Granular Backfill or Type III soil backfill to be incidental to Foundation Preparation.

SPECIAL NOTE FOR STRUCTURES WITH OVER THE SIDE DRAINAGE AND MGS RAILING

2-10110 McLean 2-10065 Caldwell

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

This note applies to structures with over the side drainage.

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

2.0 MATERIALS.

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

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

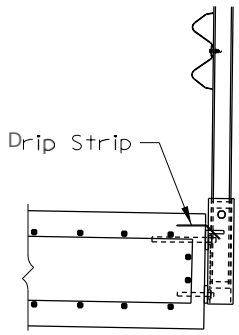
3.1 Installation of Drip Strip. Install drip strip between railing mounting brackets, as detailed, along the full length of each side of the bridge. If splices are required in the lower drip strip, tightly butt the individual pieces together, do not lap.

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

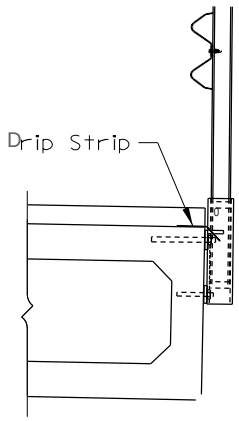
For asphalt overlays: Prior to placing the asphalt overlay, install the bent drip strips along the edge of the prestressed box beam as shown. Fasten the drip strips with (1¼" length, 3/32" shank diameter) button head spikes with deformed shanks or expansion anchors at 1'-6" c/c max. All installation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

4.0 PAYMENT.

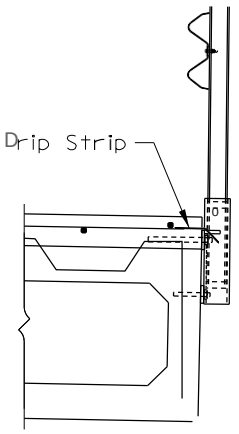
4.1 Drip Strip. Cost of all work, including all materials, labor, equipment, tools, and incidentals necessary to complete the work as specified by this note, shall be considered incidental to the project.



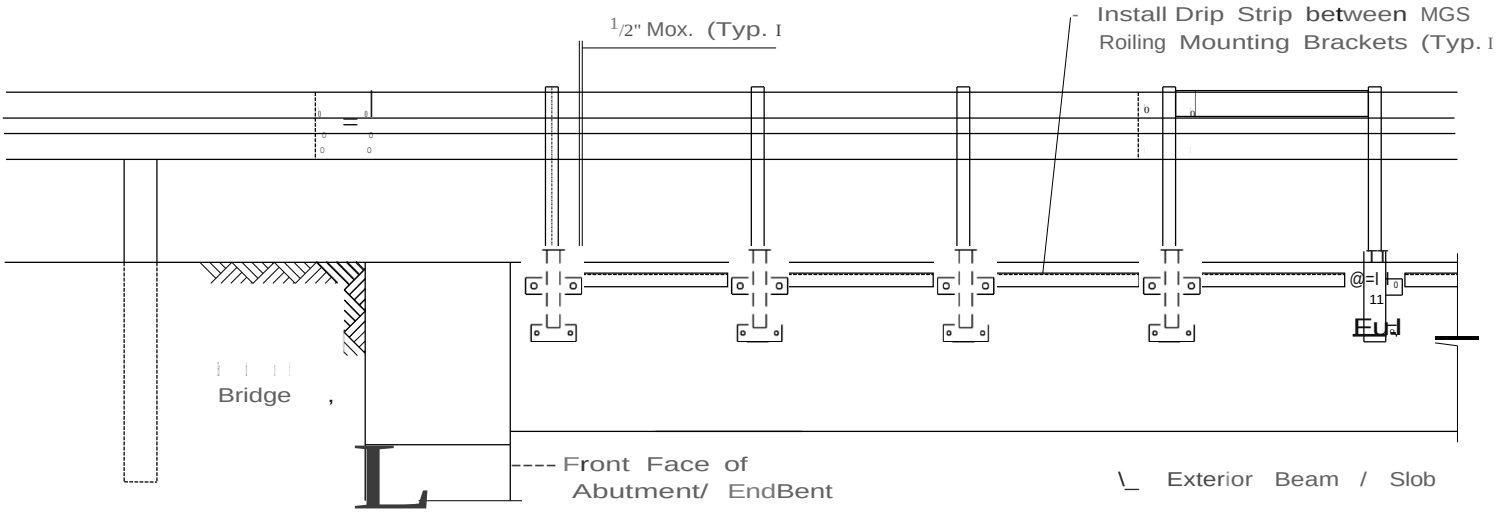
CONCRETE SLAB WITH MGS RAILING



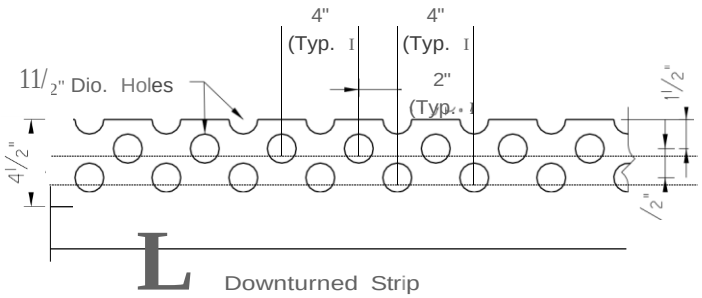
ASPHALT OVERLAY WITH MGS RAILING



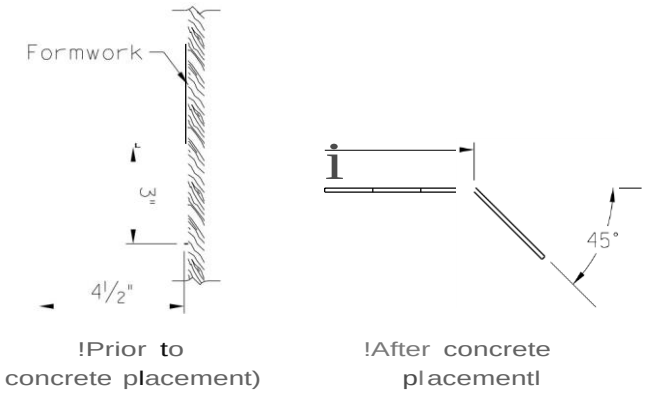
COMPOSITE BOX BEAM WITH MGS RAILING



BRIDGE ELEVATION



DRIP STRIP PLAN



DRIP STRIP ELEVATION

!For Concrete Decks!

SPECIAL NOTE

ADDITIONAL ENVIRONMENTAL COMMITMENTS

2-10110 McLean 2-10065 Caldwell 2-10091 Henderson

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

2-10110 McLean 2-10065 Caldwell 2-10091 Henderson

For all impacts regardless of size of the disturbed area:

Potential impacts to gray bat foraging habitat and habitat for federally listed fish and mussel species will be minimized by implementing erosion prevention and sediment control measures. As required under Section 213 of 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 Special 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, the 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 2
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-81 Bridge Replacement
Bridge ID 075B00025N, Item 2-10110
McLean County, Kentucky

April 2023

Note: ① Design ② Construction ③ Contractor

PROJECT INFORMATION

1. Owner: Kentucky Transportation Cabinet, District 2 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-81 MP 6.83 to MP 6.93 ①
6. Latitude / Longitude (Project Mid-Point): 37.472107, -87.237732 ①
7. County: McLean 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-81 over Slough (075B00025N) from MP 6.83 to MP 6.93, a distance of 0.097 mile. Bridge (Replacement) SYP No. 02-10110.00. 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:** Two soil series (Karnak and Melvin) have been mapped in the project area. The Karnak series consists of very deep, poorly and very poorly drained soils that form from clayey slackwater alluvium. These soils are found on floodplains and terraces. The Karnak series is classified as an Inceptisol, which may have deeply buried/intact archaeological deposits depending on the landform on which these soils formed.

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

9. **Receiving Water:** Slough of Cypress 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 2
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-145 Bridge Replacement
Bridge ID 051B00119N, Item 2-10091
Henderson County, Kentucky

April 2023

Note: ① Design ② Construction ③ Contractor

PROJECT INFORMATION

1. Owner: Kentucky Transportation Cabinet, District 2 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-145 at MP 5.57 ①
6. Latitude / Longitude (Project Mid-Point): 37.707074, -87.696222 ①
7. County: Henderson 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-145 over Beaver Dam Creek (051B00119N) from MP 5.49 to MP 5.65, a distance of 0.16 mile. Bridge (Replacement) SYP No. 02-10091.00. 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:** Two soil series (Belknap and Bonnie) have been mapped for the project area. The Bonnie series consists of very deep, poorly drained and very poorly drained soils that are formed from silty alluvium. These soils are found on floodplains.

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

9. **Receiving Water:** Beaver Dam 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 2
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-1592 Bridge Replacement
Bridge ID 017B00076N, Item 2-10065
Caldwell County, Kentucky

April 2023

Note: ① Design ② Construction ③ Contractor

PROJECT INFORMATION

1. Owner: Kentucky Transportation Cabinet, District 2 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-1592 at MP 4.25 ①
6. Latitude / Longitude (Project Mid-Point): 37.3123, -87.843496 ①
7. County: Caldwell 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-1592 over Towery Branch (017B00076N) from MP 4.19 to MP 4.27, a distance of 0.08 mile. Bridge (Replacement) SYP No. 02-10065.00. 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:** Two soil series (Rosebloom and Waverly) are mapped for the project area. The Rosebloom series consists of deep, poorly drained soils that are formed from silty alluvium. These soils are found on floodplains. The Waverly series consists of very deep, poorly drained soils that are formed from silt alluvium derived from loess. These soils are found on floodplains and alluvial fans.

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

9. **Receiving Water:** Jonathan 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.

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     - An effort will be made to store only enough product required to do the job.
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     - Products will be kept in their original containers with the original manufacturer's label.
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     - Whenever possible, all of the product will be used up before disposing of the container.
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     - The site contractor will inspect daily to ensure proper use and disposal of materials onsite.

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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.

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- 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).

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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.

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

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 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

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 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.

Any approval of cold weather plans or allowance of construction operations to occur outside Section 606 and/or Section 601 does not alleviate the 90 day maximum bridge closure. In the event the closure lasts longer than 90 calendar days as specified, liquidated damages will apply to all excess days regardless of weather limitations.

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

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 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.

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Any approval of cold weather plans or allowance of construction operations to occur outside Section 606 and/or Section 601 does not alleviate the 90 day maximum bridge closure. In the event the closure lasts longer than 90 calendar days as specified, liquidated damages will apply to all excess days regardless of weather limitations.

SPECIAL NOTE

SEASONAL TREE CLEARING RESTRICTION

2-10110 McLean 2-10065 Caldwell 2-10091 Henderson

No clearing of trees five (5) inches or greater dbh (diameter breast height) between June 1 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.

SPECIAL NOTE

BRIDGE DEMOLITION OR RENOVATION AND ASBESTOS

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) 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 included with the bid documents and should be included with the Contractor's notification filed with the KDAQ.

Survey results reveal no regulated asbestos containing material (RACM), 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."
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: 017B00076N, Item 2-10065
KY-1592 over Towery Branch
Caldwell 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 1965.

INSPECTION METHODOLOGY

An inspection was conducted December 12, 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 horizontal and vertical joints of abutments, approximately 70 square feet and 10 square feet of material, respectively

One (1) sample was taken at a representative location from each of the two (2) asbestos-suspect materials and delivered under chain-of-custody (COC) as Samples 2-10065-1 and 2-10065-2, 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 (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 December 15, 2022]. https://www.google.com/earth.

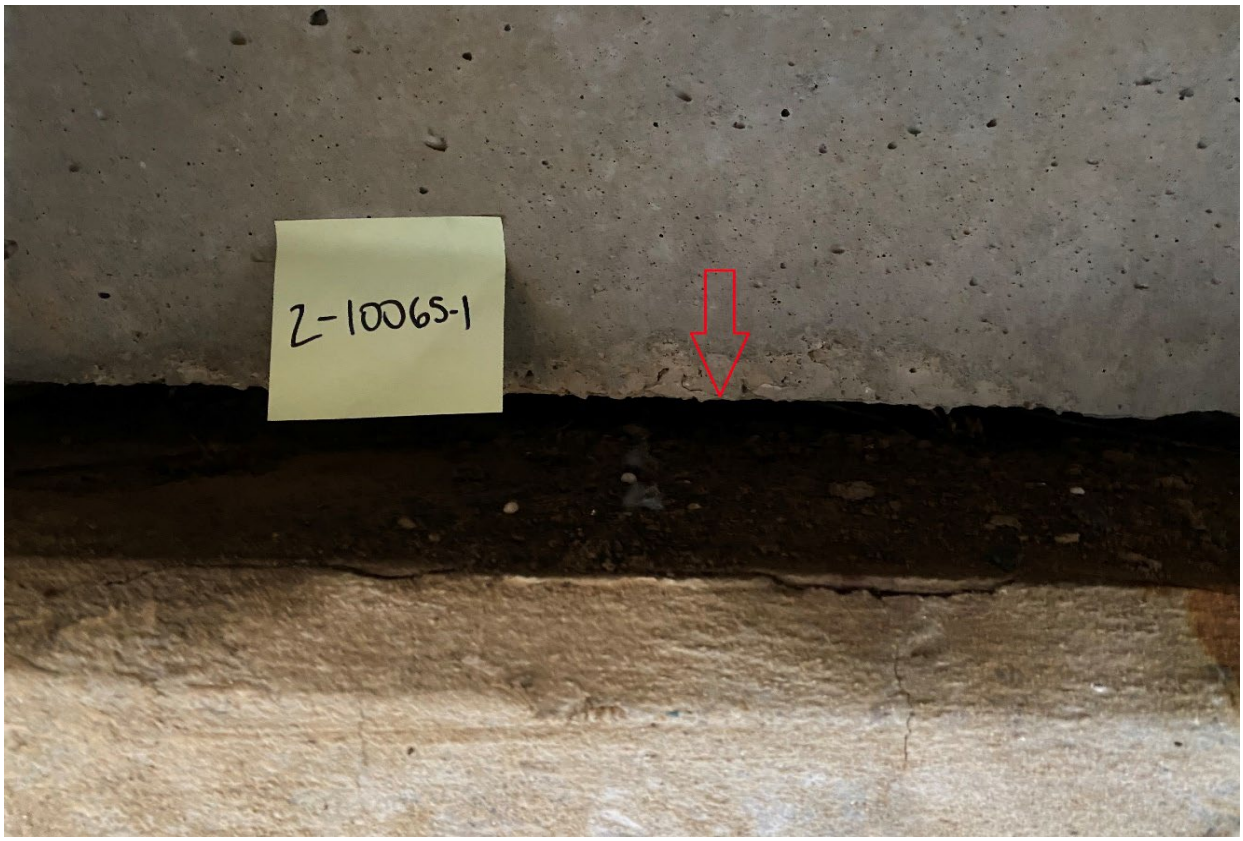
Asbestos Inspection Photo Log
Bridge ID 017B00076N, Item No. 2-10065
KY-1592, Caldwell County, Kentucky

1 - IMG_2700 Bridge Surface - Facing W.JPG

2 - IMG_2704 Bridge Surface - Facing E.JPG

Asbestos Inspection Photo Log
Bridge ID 017B00076N, Item No. 2-10065
KY-1592, Caldwell County, Kentucky

3 - IMG_2703 Bridge Below Deck - Facing S.JPG



4 - IMG_2701 Horizontal Abutment Joint - Facing W - Sample 2-10065-1.JPG

Asbestos Inspection Photo Log
Bridge ID 017B00076N, Item No. 2-10065
KY-1592, Caldwell County, Kentucky

5 - IMG_2702 Vertical Abutment Joint - Facing W - Sample 2-10065-2.JPG

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CHAIN OF CUSTODY RECORD

Number
Instructions on back

TO BE COMPLETED BY MICROBAC
Temperature Upon Receipt (°C) 19.8
Therm ID
Holding Time LL

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

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
	1-10100-1	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

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CHAIN OF CUSTODY RECORD

Number
Instructions on back
TO BE COMPLETED BY MICROBAC 198

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)

Temperature Upon Receipt (°C)
Therm ID
Holding Time 2 H

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

* 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
	2-10130-1	12/12/22	8:30A	1	S	G	—	X		
	2-10130-2	12/12/22	8:30A	1	S	G	—	X		
	2-10130-3	12/12/22	8:30A	1	S	G	—	X		
	2-10081-1	12/12/22	9:30A	1	S	G	—	X		
	2-10081-2	12/12/22	9:30A	1	S	G	—	X		
	2-10081-3	12/12/22	9:30A	1	S	G	—	X		
	2-10092-1	12/12/22	12:00P	1	S	G	—	X		
	2-10092-2	12/12/22	12:00P	1	S	G	—	X		
	2-10092-3	12/12/22	12:00P	1	S	G	—		X	
	1-10112-1	12/12/22	1:00P	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
	12/14/22 902	Crystal Williams	12/14/22 902
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Jared Looney	12/14/22 9:03		
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time

rev. 7/18/18

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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
	1-10108-1	12/12/22	2:00p	1	S	G	-	X		
	1-10108-2	12/12/22	2:00p	1	S	G	-	X		
	1-10109-3	12/12/22	2:00p	1	S	G	-	X		
	1-10109-4	12/12/22	2:00p	1	S	G	-	X		
	2-10065-1	12/12/22	4:00p	1	S	G	-	X		
	2-10065-2	12/12/22	4:00p	1	S	G	-	X		
	1-10106-1	12/12/22	5:00p	1	S	G	-	X		
	1-10106-2	12/12/22	5:00p	1	S	G	-		X	
	1-10180-1	12/13/22	4:00p	1	S	G	-	X		
	1-10180-2	12/13/22	4:00p	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
[signature]			
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 Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

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: 12/14/2022
Reported: 12/23/2022

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
1-10100-1	L2L0722-01	Solid	Grab		12/13/22 13:00	12/14/22 09:02
1-10100-2	L2L0722-02	Solid	Grab		12/13/22 13:00	12/14/22 09:02
1-10100-3	L2L0722-03	Solid	Grab		12/13/22 13:00	12/14/22 09:02
1-10099-1	L2L0722-04	Solid	Grab		12/13/22 14:00	12/14/22 09:02
1-10099-2	L2L0722-05	Solid	Grab		12/13/22 14:00	12/14/22 09:02
1-10099-3	L2L0722-06	Solid	Grab		12/13/22 14:00	12/14/22 09:02
1-10101-1	L2L0722-07	Solid	Grab		12/13/22 15:00	12/14/22 09:02
1-10101-2	L2L0722-08	Solid	Grab		12/13/22 15:00	12/14/22 09:02
1-10101-3	L2L0722-09	Solid	Grab		12/13/22 15:00	12/14/22 09:02
1-10101-4	L2L0722-10	Solid	Grab		12/13/22 15:00	12/14/22 09:02
2-10130-1	L2L0722-11	Solid	Grab		12/12/22 08:30	12/14/22 09:02
2-10130-2	L2L0722-12	Solid	Grab		12/12/22 08:30	12/14/22 09:02
2-10130-3	L2L0722-13	Solid	Grab		12/12/22 08:30	12/14/22 09:02
2-10081-1	L2L0722-14	Solid	Grab		12/12/22 09:30	12/14/22 09:02
2-10081-2	L2L0722-15	Solid	Grab		12/12/22 09:30	12/14/22 09:02
2-10081-3	L2L0722-16	Solid	Grab		12/12/22 09:30	12/14/22 09:02
2-10092-1	L2L0722-17	Solid	Grab		12/12/22 12:00	12/14/22 09:02
2-10092-2	L2L0722-18	Solid	Grab		12/12/22 12:00	12/14/22 09:02
2-10092-3	L2L0722-19	Solid	Grab		12/12/22 12:00	12/14/22 09:02
1-10112-1	L2L0722-20	Solid	Grab		12/12/22 13:00	12/14/22 09:02
1-10108-1	L2L0722-21	Solid	Grab		12/12/22 14:00	12/14/22 09:02
1-10108-2	L2L0722-22	Solid	Grab		12/12/22 14:00	12/14/22 09:02
1-10108-3	L2L0722-23	Solid	Grab		12/12/22 14:00	12/14/22 09:02
1-10108-4	L2L0722-24	Solid	Grab		12/12/22 14:00	12/14/22 09:02
2-10065-1	L2L0722-25	Solid	Grab		12/12/22 16:00	12/14/22 09:02
2-10065-2	L2L0722-26	Solid	Grab		12/12/22 16:00	12/14/22 09:02
1-10106-1	L2L0722-27	Solid	Grab		12/12/22 17:00	12/14/22 09:02
1-10106-2	L2L0722-28	Solid	Grab		12/12/22 17:00	12/14/22 09:02
1-10180-1	L2L0722-29	Solid	Grab		12/13/22 16:00	12/14/22 09:02
1-10180-2	L2L0722-30	Solid	Grab		12/13/22 16:00	12/14/22 09:02

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CERTIFICATE OF ANALYSIS

L2L0722

Analytical Testing Parameters

Client Sample ID:	1-10100-1		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-01	**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	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-02	**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

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	1-10100-3		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-03	**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	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-04	**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

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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

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	1-10101-1		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-07	**Collection Date:**	12/13/2022 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	%		12/13/22 1500		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1500		MCS
Cellulose	15		1	1	%		12/13/22 1500		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1500		MCS
Mineral Wool	<1		1	1	%		12/13/22 1500		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/13/22 1500		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1500		MCS

Client Sample ID:	1-10101-2		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-08	**Collection Date:**	12/13/2022 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	%		12/13/22 1500		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1500		MCS
Cellulose	20		1	1	%		12/13/22 1500		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1500		MCS
Mineral Wool	<1		1	1	%		12/13/22 1500		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/13/22 1500		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1500		MCS

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	1-10101-3		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-09	**Collection Date:**	12/13/2022 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	%		12/13/22 1500		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1500		MCS
Cellulose	20		1	1	%		12/13/22 1500		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1500		MCS
Mineral Wool	<1		1	1	%		12/13/22 1500		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/13/22 1500		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1500		MCS

Client Sample ID:	1-10101-4		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-10	**Collection Date:**	12/13/2022 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	%		12/13/22 1500		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1500		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1500		MCS
Cellulose	15		1	1	%		12/13/22 1500		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1500		MCS
Mineral Wool	<1		1	1	%		12/13/22 1500		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/13/22 1500		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1500		MCS

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID: 2-10130-1
Sample Matrix: Solid
Lab Sample ID: L2L0722-11
Collected By: CUSTOMER
Collection Date: 12/12/2022 8:30

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	%		12/12/22 0830		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 0830		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 0830		MCS
Asbestos, Other	<1		1	1	%		12/12/22 0830		MCS
Cellulose	60		1	1	%		12/12/22 0830		MCS
Fibrous Glass	<1		1	1	%		12/12/22 0830		MCS
Mineral Wool	<1		1	1	%		12/12/22 0830		MCS
Other Non-Asbestos Fibers	40		1	1	%		12/12/22 0830		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 0830		MCS

Client Sample ID: 2-10130-2
Sample Matrix: Solid
Lab Sample ID: L2L0722-12
Collected By: CUSTOMER
Collection Date: 12/12/2022 8:30

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	%		12/12/22 0830		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 0830		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 0830		MCS
Asbestos, Other	<1		1	1	%		12/12/22 0830		MCS
Cellulose	60		1	1	%		12/12/22 0830		MCS
Fibrous Glass	<1		1	1	%		12/12/22 0830		MCS
Mineral Wool	<1		1	1	%		12/12/22 0830		MCS
Other Non-Asbestos Fibers	40		1	1	%		12/12/22 0830		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 0830		MCS

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	2-10130-3		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-13	**Collection Date:**	12/12/2022 8:30

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	%		12/12/22 0830		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 0830		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 0830		MCS
Asbestos, Other	<1		1	1	%		12/12/22 0830		MCS
Cellulose	30		1	1	%		12/12/22 0830		MCS
Fibrous Glass	<1		1	1	%		12/12/22 0830		MCS
Mineral Wool	<1		1	1	%		12/12/22 0830		MCS
Other Non-Asbestos Fibers	70		1	1	%		12/12/22 0830		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 0830		MCS

Client Sample ID:	2-10081-1		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-14	**Collection Date:**	12/12/2022 9:30

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	%		12/12/22 0930		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 0930		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 0930		MCS
Asbestos, Other	<1		1	1	%		12/12/22 0930		MCS
Cellulose	15		1	1	%		12/12/22 0930		MCS
Fibrous Glass	<1		1	1	%		12/12/22 0930		MCS
Mineral Wool	<1		1	1	%		12/12/22 0930		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/12/22 0930		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 0930		MCS

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	2-10081-2		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-15	**Collection Date:**	12/12/2022 9:30

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	%		12/12/22 0930		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 0930		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 0930		MCS
Asbestos, Other	<1		1	1	%		12/12/22 0930		MCS
Cellulose	30		1	1	%		12/12/22 0930		MCS
Fibrous Glass	<1		1	1	%		12/12/22 0930		MCS
Mineral Wool	<1		1	1	%		12/12/22 0930		MCS
Other Non-Asbestos Fibers	70		1	1	%		12/12/22 0930		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 0930		MCS

Client Sample ID:	2-10081-3		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-16	**Collection Date:**	12/12/2022 9:30

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	%		12/12/22 0930		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 0930		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 0930		MCS
Asbestos, Other	<1		1	1	%		12/12/22 0930		MCS
Cellulose	5		1	1	%		12/12/22 0930		MCS
Fibrous Glass	<1		1	1	%		12/12/22 0930		MCS
Mineral Wool	<1		1	1	%		12/12/22 0930		MCS
Other Non-Asbestos Fibers	95		1	1	%		12/12/22 0930		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 0930		MCS

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID: 2-10092-1
Sample Matrix: Solid
Lab Sample ID: L2L0722-17
Collected By: CUSTOMER
Collection Date: 12/12/2022 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	%		12/12/22 1200		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1200		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1200		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1200		MCS
Cellulose	15		1	1	%		12/12/22 1200		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1200		MCS
Mineral Wool	<1		1	1	%		12/12/22 1200		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/12/22 1200		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1200		MCS

Client Sample ID: 2-10092-2
Sample Matrix: Solid
Lab Sample ID: L2L0722-18
Collected By: CUSTOMER
Collection Date: 12/12/2022 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	%		12/12/22 1200		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1200		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1200		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1200		MCS
Cellulose	20		1	1	%		12/12/22 1200		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1200		MCS
Mineral Wool	<1		1	1	%		12/12/22 1200		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/12/22 1200		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1200		MCS

Client Sample ID: 2-10092-3
Sample Matrix: Solid
Lab Sample ID: L2L0722-19
Collected By: CUSTOMER
Collection Date: 12/12/2022 12:00

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	210000		1100	5400	mg/kg		12/19/22 1211	12/20/22 2012	SSL

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	1-10112-1		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-20	**Collection Date:**	12/12/2022 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	%		12/12/22 1300		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1300		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1300		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1300		MCS
Cellulose	15		1	1	%		12/12/22 1300		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1300		MCS
Mineral Wool	<1		1	1	%		12/12/22 1300		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/12/22 1300		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1300		MCS

Client Sample ID:	1-10108-1		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-21	**Collection Date:**	12/12/2022 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	%		12/12/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1400		MCS
Cellulose	20		1	1	%		12/12/22 1400		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1400		MCS
Mineral Wool	<1		1	1	%		12/12/22 1400		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/12/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1400		MCS

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	1-10108-2		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-22	**Collection Date:**	12/12/2022 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	%		12/12/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1400		MCS
Cellulose	10		1	1	%		12/12/22 1400		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1400		MCS
Mineral Wool	<1		1	1	%		12/12/22 1400		MCS
Other Non-Asbestos Fibers	90		1	1	%		12/12/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1400		MCS

Client Sample ID:	1-10108-3		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-23	**Collection Date:**	12/12/2022 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	%		12/12/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1400		MCS
Cellulose	10		1	1	%		12/12/22 1400		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1400		MCS
Mineral Wool	<1		1	1	%		12/12/22 1400		MCS
Other Non-Asbestos Fibers	90		1	1	%		12/12/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1400		MCS

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID:	1-10108-4		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-24	**Collection Date:**	12/12/2022 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	%		12/12/22 1400		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1400		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1400		MCS
Cellulose	15		1	1	%		12/12/22 1400		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1400		MCS
Mineral Wool	<1		1	1	%		12/12/22 1400		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/12/22 1400		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1400		MCS

Client Sample ID:	2-10065-1		
Sample Matrix:	Solid	**Collected By:**	CUSTOMER
Lab Sample ID:	L2L0722-25	**Collection Date:**	12/12/2022 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	%		12/12/22 1600		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1600		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1600		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1600		MCS
Cellulose	10		1	1	%		12/12/22 1600		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1600		MCS
Mineral Wool	<1		1	1	%		12/12/22 1600		MCS
Other Non-Asbestos Fibers	90		1	1	%		12/12/22 1600		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1600		MCS

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CERTIFICATE OF ANALYSIS

L2L0722

Client Sample ID: 2-10065-2
Sample Matrix: Solid
Lab Sample ID: L2L0722-26
Collected By: CUSTOMER
Collection Date: 12/12/2022 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	%		12/12/22 1600		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1600		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1600		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1600		MCS
Cellulose	10		1	1	%		12/12/22 1600		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1600		MCS
Mineral Wool	<1		1	1	%		12/12/22 1600		MCS
Other Non-Asbestos Fibers	90		1	1	%		12/12/22 1600		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1600		MCS

Client Sample ID: 1-10106-1
Sample Matrix: Solid
Lab Sample ID: L2L0722-27
Collected By: CUSTOMER
Collection Date: 12/12/2022 17:00

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	%		12/12/22 1700		MCS
Asbestos, Amosite	<1		1	1	%		12/12/22 1700		MCS
Asbestos, Crocidolite	<1		1	1	%		12/12/22 1700		MCS
Asbestos, Other	<1		1	1	%		12/12/22 1700		MCS
Cellulose	15		1	1	%		12/12/22 1700		MCS
Fibrous Glass	<1		1	1	%		12/12/22 1700		MCS
Mineral Wool	<1		1	1	%		12/12/22 1700		MCS
Other Non-Asbestos Fibers	85		1	1	%		12/12/22 1700		MCS
Other Matrix Materials	<1		1	1	%		12/12/22 1700		MCS

Client Sample ID: 1-10106-2
Sample Matrix: Solid
Lab Sample ID: L2L0722-28
Collected By: CUSTOMER
Collection Date: 12/12/2022 17:00

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	26000		61	310	mg/kg		12/19/22 1211	12/20/22 2017	SSL

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L2L0722

Client Sample ID: 1-10180-1
Sample Matrix: Solid
Lab Sample ID: L2L0722-29
Collected By: CUSTOMER
Collection Date: 12/13/2022 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	%		12/13/22 1600		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1600		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1600		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1600		MCS
Cellulose	40		1	1	%		12/13/22 1600		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1600		MCS
Mineral Wool	<1		1	1	%		12/13/22 1600		MCS
Other Non-Asbestos Fibers	60		1	1	%		12/13/22 1600		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1600		MCS

Client Sample ID: 1-10180-2
Sample Matrix: Solid
Lab Sample ID: L2L0722-30
Collected By: CUSTOMER
Collection Date: 12/13/2022 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	%		12/13/22 1600		MCS
Asbestos, Amosite	<1		1	1	%		12/13/22 1600		MCS
Asbestos, Crocidolite	<1		1	1	%		12/13/22 1600		MCS
Asbestos, Other	<1		1	1	%		12/13/22 1600		MCS
Cellulose	20		1	1	%		12/13/22 1600		MCS
Fibrous Glass	<1		1	1	%		12/13/22 1600		MCS
Mineral Wool	<1		1	1	%		12/13/22 1600		MCS
Other Non-Asbestos Fibers	80		1	1	%		12/13/22 1600		MCS
Other Matrix Materials	<1		1	1	%		12/13/22 1600		MCS

*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: 19.8°C

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CERTIFICATE OF ANALYSIS

L2L0722

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: 12/23/2022 17:07

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

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

Structure ID: 051B00119N, Item 2-10091
KY-145 over Beaver Dam Creek
Henderson County, Kentucky

Prepared: January 9, 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 1978.

INSPECTION METHODOLOGY

An inspection was conducted on December 28, 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, no asbestos-suspect materials were observed as documented in the attached photo log.

FINDINGS

No asbestos-suspect materials were identified.

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.

Asbestos Inspection Photo Log
Bridge ID 051B00119N, Item No. 2-10091
KY-145, Henderson County, Kentucky

1 - IMG_2817 Bridge Surface - Facing S.JPG

2 - IMG_2818 Bridge Below Deck - Facing N.JPG

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

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

Structure ID: 075B00025N, Item 2-10110
KY-81 over Slough
McLean County, Kentucky

Prepared: January 10, 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 1925.

INSPECTION METHODOLOGY

An inspection was conducted on December 28, 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:

- approximately 60 square feet of black expansion joint material in horizontal abutment joints
- approximately 15 square feet of black expansion joint material in vertical abutment joints

One (1) sample was taken at a representative location from each of the two (2) asbestos-suspect materials that were observed and delivered under chain-of-custody (COC) as Samples 2-10110-1 and 2-10110-2, 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 (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.

Asbestos Inspection Photo Log
Bridge ID 075B00025N, Item No. 2-10110
KY-81, McLean County, Kentucky

1 - IMG_2824 Bridge Surface - Facing W.JPG

2 - IMG_2825 Horizontal Abutment Joint - Facing E - Sample 2-10110-1.JPG

Asbestos Inspection Photo Log
Bridge ID 075B00025N, Item No. 2-10110
KY-81, McLean County, Kentucky

3 - IMG_2826 Vertical Abutment Joint - Facing E - Sample 2-10110-2.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 20.1

Temperature Upon Receipt (°C)

Therm ID

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
	2-10079-1	12/28/22	9:00A	1	S	G	—	X		
	2-10079-2	12/28/22	9:00A	1	S	G	—		X	
	2-10079-3	12/28/22	9:00A	1	S	G	—		X	
	2-10099-1	12/28/22	11:00A	1	S	G	—		X	
	2-10099-2	12/28/22	11:00A	1	S	G	—	X		
	2-10110-1	12/28/22	1:00p	1	S	G	—	X		
	2-10110-2	12/28/22	1:00p	1	S	G	—	X		
	2-10118-1	12/28/22	2:00p	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
Jared Looney	12/29/22 1036	Crystal Williams	12/29/22 1036
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

L2L1216

Project Description

SOIL ANALYSIS

For:

Jared Looney

Third Rock Consultants

2526 Regency RD STE 180

Lexington, KY 40503

Customer Relationship Manager

David Lester

Tuesday, January 10, 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 Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1216

Third Rock Consultants

Jared Looney
2526 Regency RD STE 180
Lexington, KY 40503

Project Name: SOIL ANALYSIS

Project / PO Number: N/A
Received: 12/29/2022
Reported: 01/10/2023

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
2-10079-1	L2L1216-01	Solid	Grab		12/28/22 09:00	12/29/22 10:36
2-10079-2	L2L1216-02	Solid	Grab		12/28/22 09:00	12/29/22 10:36
2-10079-3	L2L1216-03	Solid	Grab		12/28/22 09:00	12/29/22 10:36
2-10099-1	L2L1216-04	Solid	Grab		12/28/22 11:00	12/29/22 10:36
2-10099-2	L2L1216-05	Solid	Grab		12/28/22 11:00	12/29/22 10:36
2-10110-1	L2L1216-06	Solid	Grab		12/28/22 13:00	12/29/22 10:36
2-10110-2	L2L1216-07	Solid	Grab		12/28/22 13:00	12/29/22 10:36
2-10118-1	L2L1216-08	Solid	Grab		12/28/22 14:00	12/29/22 10:36

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1216

Analytical Testing Parameters

Client Sample ID: 2-10079-1
Sample Matrix: Solid
Lab Sample ID: L2L1216-01
Collected By: CUSTOMER
Collection Date: 12/28/2022 9:00

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	%		12/28/22 0900	01/06/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/28/22 0900	01/06/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/28/22 0900	01/06/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/28/22 0900	01/06/23 0000	MCS
Cellulose	2		1	1	%		12/28/22 0900	01/06/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/28/22 0900	01/06/23 0000	MCS
Mineral Wool	<1		1	1	%		12/28/22 0900	01/06/23 0000	MCS
Other Non-Asbestos Fibers	98		1	1	%		12/28/22 0900	01/06/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/28/22 0900	01/06/23 0000	MCS

Client Sample ID: 2-10079-2
Sample Matrix: Solid
Lab Sample ID: L2L1216-02
Collected By: CUSTOMER
Collection Date: 12/28/2022 9:00

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	<5.7		1.1	5.7	mg/kg	**R3**	01/04/23 1150	01/05/23 0032	SSL

Client Sample ID: 2-10079-3
Sample Matrix: Solid
Lab Sample ID: L2L1216-03
Collected By: CUSTOMER
Collection Date: 12/28/2022 9:00

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	320		3.0	15	mg/kg		01/04/23 1150	01/05/23 0047	SSL

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1216

Client Sample ID: 2-10099-1
Sample Matrix: Solid
Lab Sample ID: L2L1216-04
Collected By: CUSTOMER
Collection Date: 12/28/2022 11:00

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	100		0.84	4.2	mg/kg		01/04/23 1150	01/05/23 0102	SSL

Client Sample ID: 2-10099-2
Sample Matrix: Solid
Lab Sample ID: L2L1216-05
Collected By: CUSTOMER
Collection Date: 12/28/2022 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	<1		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Cellulose	60		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Mineral Wool	<1		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Other Non-Asbestos Fibers	40		1	1	%		12/28/22 1100	01/06/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/28/22 1100	01/06/23 0000	MCS

Client Sample ID: 2-10110-1
Sample Matrix: Solid
Lab Sample ID: L2L1216-06
Collected By: CUSTOMER
Collection Date: 12/28/2022 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	%		12/28/22 1300	01/06/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Cellulose	7		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Mineral Wool	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Other Non-Asbestos Fibers	93		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1216

Client Sample ID: 2-10110-2
Sample Matrix: Solid
Lab Sample ID: L2L1216-07
Collected By: CUSTOMER
Collection Date: 12/28/2022 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	%		12/28/22 1300	01/06/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Cellulose	7		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Mineral Wool	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Other Non-Asbestos Fibers	93		1	1	%		12/28/22 1300	01/06/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/28/22 1300	01/06/23 0000	MCS

Client Sample ID: 2-10118-1
Sample Matrix: Solid
Lab Sample ID: L2L1216-08
Collected By: CUSTOMER
Collection Date: 12/28/2022 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	%		12/28/22 1400	01/06/23 0000	MCS
Asbestos, Amosite	<1		1	1	%		12/28/22 1400	01/06/23 0000	MCS
Asbestos, Crocidolite	<1		1	1	%		12/28/22 1400	01/06/23 0000	MCS
Asbestos, Other	<1		1	1	%		12/28/22 1400	01/06/23 0000	MCS
Cellulose	10		1	1	%		12/28/22 1400	01/06/23 0000	MCS
Fibrous Glass	<1		1	1	%		12/28/22 1400	01/06/23 0000	MCS
Mineral Wool	<1		1	1	%		12/28/22 1400	01/06/23 0000	MCS
Other Non-Asbestos Fibers	90		1	1	%		12/28/22 1400	01/06/23 0000	MCS
Other Matrix Materials	<1		1	1	%		12/28/22 1400	01/06/23 0000	MCS

*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
R3: Relative Percent Difference (RPD) of Sample Duplicates outside of Control Limit.
RL: Reporting Limit

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 20.1°C

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2L1216

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: 01/10/2023 12:18

TEAM KENTUCKY TRANSPORTATION CABINET

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

TC 62-226
Rev. 01/2016
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RIGHT OF WAY CERTIFICATION

☒ Original	☐ Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
02-10065	Caldwell	1100 FD55 121 9414002R	
PROJECT DESCRIPTION			

Kentucky Bridge Program - 017B00076N - KY-1592 OVER TOWERY BRANCH

☒ 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	
Date		Date	05/09/2023
Right of Way Director		**FHWA**	
Printed Name	Dean M. Loy	Printed Name	
Signature		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)
02-10091	Henderson	1100 FD55 121 9414002R	
PROJECT DESCRIPTION			

Kentucky Bridge Program - 051B00119N - KY 145 at Beaver Dam 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	2	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed	2		
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	
Date		Date	08/21/2023
Right of Way Director		**FHWA**	
Printed Name	Dean M. Loy	Printed Name	
Signature		Signature	
Date		Date	

TEAM KENTUCKY TRANSPORTATION CABINET

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

TC 62-226
Rev. 01/2016
Page 1 of 1

RIGHT OF WAY CERTIFICATION

☒ Original	☐ Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
2-10110.00	McLean	1100 FD55 121 9414002R	
PROJECT DESCRIPTION			
Kentucky Bridge Program - KY 81 Bridge Replacement at Slough			

☐ 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	3	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed	3		
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	
Date		Date	09/05/2023
Right of Way Director		**FHWA**	
Printed Name	Dean M. Loy	Printed Name	
Signature		Signature	
Date		Date	

UTILITIES AND RAIL CERTIFICATION NOTE

McLean County
FD55 121 94140 02U
Mile point: 6.876 TO 6.882
BRIDGE PROJECT IN MCCLEAN COUNTY ON (075B00025N) KY-81 AT SLOUGH
ITEM NUMBER: 02-10110.00

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

McLean County
FD55 121 94140 02U
Mile point: 6.876 TO 6.882
BRIDGE PROJECT IN MCCLEAN COUNTY ON (075B00025N) KY-81 AT SLOUGH
ITEM NUMBER: 02-10110.00

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

AT&T KY - Communication

Kenergy Corporation - Electric

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

Not Applicable

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

UTILITIES AND RAIL CERTIFICATION NOTE

McLean County
FD55 121 94140 02U
Mile point: 6.876 TO 6.882
BRIDGE PROJECT IN MCCLEAN COUNTY ON (075B00025N) KY-81 AT SLOUGH
ITEM NUMBER: 02-10110.00

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

McLean County
FD55 121 94140 02U
Mile point: 6.876 TO 6.882
BRIDGE PROJECT IN MCCLEAN COUNTY ON (075B00025N) KY-81 AT SLOUGH
ITEM NUMBER: 02-10110.00

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T KY - Communication	120 Clark Street Henderson, KY 42420	Glenn Shane	270-831-3025	gs5572@att.com
Kenergy Corporation - Electric	6402 Old Corydon Rd. Henderson, KY 42420	Kyle Hart	270-724-9907	khart@kenergycorp.com

UTILITIES AND RAIL CERTIFICATION NOTE

Henderson County
FD55 121 94140 02U
Mile point: 5.564 TO 5.574
BRIDGE PROJECT IN HENDERSON COUNTY ON (051B00119N) KY-145 AT BEAVER DAM CREEK
ITEM NUMBER: 02-10091.00

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 facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities

UTILITIES AND RAIL CERTIFICATION NOTE

Henderson County
FD55 121 94140 02U
Mile point: 5.564 TO 5.574
BRIDGE PROJECT IN HENDERSON COUNTY ON (051B00119N) KY-145 AT BEAVER DAM CREEK
ITEM NUMBER: 02-10091.00

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.

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

AT&T KY – Communication

- Two (2) each AT&T poles will be replaced and relocated. One (1) pole being a 30-5 that will be upsized to a 35-5 to attain better clearance over the ditch and bridge. The other pole being a 35-5 that will be relocated and replaced as the same size as existing. Along with the poles, two (2) each down guys and an anchor are being replaced to match the new pole locations.

UTILITIES AND RAIL CERTIFICATION NOTE

Henderson County
FD55 121 94140 02U
Mile point: 5.564 TO 5.574
BRIDGE PROJECT IN HENDERSON COUNTY ON (051B00119N) KY-145 AT BEAVER DAM CREEK
ITEM NUMBER: 02-10091.00

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

Henderson County Water District – Water

- Approximately 650 feet of 8” SDR-17 PVC force main will be relocated to the east of the proposed bridge on KY 145, ten (10) feet inside of the proposed Right-of-Way with all fittings, accessories, and necessary appurtenances. The existing forced main will be cut and capped, abandoned in place, and capped on each end. This work will be included in the roadway contract. Henderson County Water District does not have a list of preferred subcontractors. It will be the decision of the roadway contractor to either self-perform or subcontract this relocation work.

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

Henderson County
FD55 121 94140 02U
Mile point: 5.564 TO 5.574
BRIDGE PROJECT IN HENDERSON COUNTY ON (051B00119N) KY-145 AT BEAVER DAM CREEK
ITEM NUMBER: 02-10091.00

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T KY - Communication	120 Clark Street Henderson, KY 42420	Glenn Shane	270-831-3025	gs5572@att.com
Henderson County Water District - Water	655 South Main Street Henderson, KY 42419	Pete Conrad	270-826-2824	pconrad@hendersoncounty.ky.gov

UTILITIES AND RAIL CERTIFICATION NOTE

Caldwell County
FD55 121 94140 02U
Mile point: 2.636 TO 2.642
BRIDGE PROJECT IN CALDWELL COUNTY ON (017B00076N) KY-1592 AT TOWERY BRANCH
ITEM NUMBER: 02-10065.00

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.

Utility coordination efforts determined that no significant utility relocation work is required to complete the project. Any work pertaining to these utility facilities is defined in the bid package and is to be carried out as instructed by the Kentucky Transportation Cabinet. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.

UTILITIES AND RAIL CERTIFICATION NOTE

Caldwell County
FD55 121 94140 02U
Mile point: 2.636 TO 2.642
BRIDGE PROJECT IN CALDWELL COUNTY ON (017B00076N) KY-1592 AT TOWERY BRANCH
ITEM NUMBER: 02-10065.00

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

Caldwell County Water District - Water

AT&T KY - Communication

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

Not Applicable

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

UTILITIES AND RAIL CERTIFICATION NOTE

Caldwell County
FD55 121 94140 02U
Mile point: 2.636 TO 2.642
BRIDGE PROJECT IN CALDWELL COUNTY ON (017B00076N) KY-1592 AT TOWERY BRANCH
ITEM NUMBER: 02-10065.00

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

Caldwell County
FD55 121 94140 02U
Mile point: 2.636 TO 2.642
BRIDGE PROJECT IN CALDWELL COUNTY ON (017B00076N) KY-1592 AT TOWERY BRANCH
ITEM NUMBER: 02-10065.00

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T KY - Communication	810 Kentucky Ave. Paducah KY 42003	Amanda Bentley	270-210-4783	as0063@att.com
Caldwell County Water District - Water	118 West Market Street Princeton KY 42445	Jimmy Littlefield	270-365-9381	jimmy.littlefield@att.net

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:

Henderson County Water – No prequalification requirement.

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.

When the list of approved subcontractors for the utility work is not provided in these general notes, the utility work can be completed by the prime contractor. If the prime contractor chooses to subcontract the

work, 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:

Henderson County Water – No materials provided.

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.

Henderson County Water District

KY145 Waterline Relocation

Construction Documents
Project Manual

Final

June 2023

HDR Project No. 10373101

TABLE OF CONTENTS

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Installation of approximately 800 lf of new 8" watermain and related appurtenances along KY 145 across Beaverdam Creek
2. Tie-in to existing watermain upstream and downstream of the relocation limits
3. Installation of two (2) 8" gate valves
4. Cut in of one (1) 8" gate valve along existing watermain
5. Installation of one (1) leak detection assembly
6. Installation of one (1) hydrant assembly
7. Abandon existing watermain in place

1.2 LOCATION AND DESCRIPTION OF WORK

A. The Work is located in Henderson County Water District, and extends from KY 145 at approximately milemarker 5.5, north of the intersection with Sulphur Springs Road to to just north of the Beaverdam Creek crossing along KY 145 in Cordyn, KY..

B. Work to be performed under this Contract includes, but is not limited to the installation of new 8" PVC potable watermain. Included, but not limited to, are piping installed by open-cut methods, and all other Work required in accordance with the Contract Documents.

C. Contracting Method: The Project will be constructed under an existing KYTC contract.

D. Hazardous Environmental Conditions:
1. To the best of Owner's knowledge, information, and belief, the prior use of the Site included a state highway. Existing buildings at the Site were constructed in.
2. A Hazardous Environmental Condition, described in reports referenced in the Supplementary Conditions, will (or has reasonable potential to) affect the Work.

1.3 OTHERS RETAINED BY OWNER FOR THE PROJECT

A. Engineer:
1. Engineer is identified in the Agreement.
2. Engineer's responsibilities for the Project, relative to Contractor, are indicated throughout the Contract Documents.
3. The Engineer will provide periodic site visits during the relocation work.

1.4 WORK BY OTHERS NOT UNDER OWNER'S CONTROL

A. Work by Utility Owners and Transportation Facility Owners:
1. Owner is aware of the work indicated below, to be performed at or adjacent to the Site, by utility owners (not under Owner's control) or owners of transportation facilities (not under Owner's control).
2. Other utility relocations in the scope of the KYTC roadway improvement project on KY 145.

1.5 WORK BY OWNER

A. Owner will perform the following in connection with the Work:
1. Operate all existing valves, flow-control gates, pumps, equipment, and appurtenances that will affect Owner's operations or facility processes, unless otherwise specified or indicated.

1.6 SEQUENCE AND PROGRESS OF WORK

A. Requirements for sequencing and coordinating with Owner's operations, including maintenance of facility operations during construction, and requirements for tie-ins and shutdowns, indicated on the drawings where necessary.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Definition of various types of Submittals.
2. Coordination requirements for Submittals.
3. General provisions concerning Submittals.
4. Schedule of Submittals.
5. Contractor's preparation of Submittals, including:
   a. Numbering.
   b. Marking.
   c. Organization and content.
   d. Proposed "or-equals", substitutes, and deviations from Contract requirements.
   e. Electronic Documents Submittals.
   f. Contractor's review and approval of each Submittal.
   g. Resubmittals.
6. Contractor's transmittal of Submittals, including transmittal letters, transmittal and delivery method, and delivery of Samples, Closeout Submittals, and Maintenance Materials Submittals.
7. Engineer's review, including:
   a. Timing.
   b. Meaning of Engineer's Submittal action code(disposition) assigned.
   c. Delivery of Engineer's responses on Submittals.

B. Scope:
1. Contractor shall provide all labor, materials, equipment, tools, services, incidentals, and other effort necessary to furnish Shop Drawings, product data Submittals, Samples, and other Submittals in accordance with the Contract Documents.
2. This Section's Article, "General Provisions Concerning Submittals" includes a summary of the Contract Documents' locations of Submittals requirements.
3. Shop Drawings, product data Submittals, Samples, and other Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Engineer's approval or acceptance, as applicable, of a Submittal does not alter or modify the Contract Documents.
4. Engineer and Owner have the right to rely on Contractor's representations and certifications made regarding each Submittal.

1.2 REFERENCES

A. References – Introduction:
1. This Article presents definitions and terminology used in this Section and throughout the Contract Documents.
2. Applicability of the Term "Submittals": Where reference is made to Shop Drawings, product data Submittals, Samples, or other Submittals in this Section and elsewhere in the Contract Documents, the term "Submittals", as defined in the Contract Documents, is intended. The foregoing applies regardless of whether such term is indicated with an initial capital letter, unless context of the subject provision clearly indicates otherwise.
3. Types of Submittals:
   a. Submittal types are classified as follows: (1) Action Submittals, (2) Informational Submittals, (3) Closeout Submittals, and (4) Maintenance Materials Submittals.
   b. Type of each required Submittal is indicated in the associated Specifications section. When Submittal type is not clearly indicated in the associated Specifications section,

Submittal will be classified as indicated in this Article. Submit request for interpretation when Contractor is uncertain of required Submittal type.

B. Action Submittals:
   1. Action Submittals require an explicit, written approval or other appropriate action by Engineer (or other entity to whom the Submittal is required to be furnished, in accordance with the Contract Documents) before Contractor may release the associated item(s) for raw materials procurement, fabrication, production, and shipping.
   2. Unless otherwise indicated in the Contract Documents, Action Submittals include the following:
      a. Shop Drawings.
      b. Product data.
      c. Samples.
      d. Testing plans for quality control activities required by the Contract Documents.
      e. Delegated Designs: Delegated design professional's "instruments of service" Submittals required by the Contract Documents [, as further described in Section 01 35 73 – Delegated Design Procedures.]
   3. General Conditions' requirements for Shop Drawings and Samples hereby apply to all Action Submittals.

C. Informational Submittals:
   1. Informational Submittals are so indicated in the Contract Documents. Unless otherwise indicated, Informational Submittals include certifications, evaluation reports, results of source quality control activities, results of field quality control activities, Supplier instructions, reports of Suppliers' visits to the Site, sustainable design Submittals (that are not Closeout Submittals), delegated design Submittals that are not "instruments of service" Submittals, qualifications statements, and others.
   2. Informational Submittals, when submitted in accordance with the Contract and indicating full compliance with the Contract Documents, do not require explicit response from Engineer (or other entity to whom the Submittal is to be delivered); Engineer's (or other entity's) acceptance thereof will be indicated in the Engineer's Submittals log. Copy of Engineer's Submittals log is available to Contractor upon Contractor's written request.
   3. When Informational Submittal does not indicate full compliance with the Contract Documents, Engineer (or other entity to which Submittal is to be delivered) will indicate the non-compliance in a written response to Contractor.

D. Closeout Submittals:
   1. Closeout Submittals are so indicated in the Contract Documents and are, in general, required before the associated Work is completed, unless earlier submittal is required by the Contract Documents.
   2. Unless indicated otherwise in the Contract Documents, Closeout Submittals include maintenance contracts, operation and maintenance data, warranties, bonds (other than performance and payment bonds required prior to the start of construction), record documents, sustainable design closeout Submittals, software, keys, and others.
   3. Closeout Submittals are processed in the same manner as described above for Informational Submittals.

E. Maintenance Materials Submittals:
   1. Maintenance materials include spare parts, extra materials, tools, and similar items required to be furnished in accordance with the Contract Documents.
   2. Furnish required physical maintenance materials, delivered to Owner or facility manager (if other than Owner), as applicable, at the location(s) indicated in the Contract Documents, for the corresponding required Maintenance Materials Submittals.
   3. Maintenance Materials Submittals are documentation of delivery to Owner's or facility manager, and their acceptance of, required physical maintenance materials.
   4. Maintenance Materials Submittals are processed in the same manner as described above for Informational Submittals.

F. Additional Terms:
1. The following terms have the meanings indicated below, regardless of whether such terms are indicated using initial capital letters, and apply to singular and plural of each:
a. "Product data" means illustrations, standard schedules, performance charts, Supplier's published instructions, brochures, diagrams, and other information furnished by Contractor to illustrate or describe materials or equipment for some portion of the Work. In general, product data are manufacturers' pre-published information on the items proposed to be incorporated into the Work. Product data includes manufacturer's catalog pages and similar documents with contractor-made markings and indications of proposed products and proposed options.
b. The term "Shop Drawings", defined in the General Conditions, is supplemented by the following: Shop Drawings include: (1) fabrication and assembly drawings, usually having a title block, or (2) schedules, prepared specifically for the Project. Here, "schedules" means a Project-specific summary of systems and components, such as a schedule of HVAC equipment, schedules of doors and door hardware, or windows, or a schedule of paint systems by room and surface, or other, similar Project information in a tabular format. In contrast, construction Progress Schedules, Schedules of Submittals, and Schedules of Values are not Shop Drawings.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Furnish Submittals well in advance of need for the associated material or equipment, or procedure (as applicable), in the Work and with ample time necessary for delivery of materials and equipment and to implement procedures following Engineer's approval or acceptance of the associated Submittal.
2. Work covered by a Submittal will not be included in payments by Owner until approval or acceptance (as applicable) of related Submittals has been obtained in accordance with the Contract Documents.

1.4 GENERAL PROVISIONS CONCERNING SUBMITTALS

A. Locations of Requirements:
1. Requirements concerning Submittals are generally located as follows:
a. General Conditions, as may be modified by the Supplementary Conditions, applicable to the Project.
b. This Section, which presents general requirements for Submittals applicable to the Project.
c. Other Division 01 Specifications that include general requirements for certain types of Submittals, such as Section 01 31 26 - Electronic Communications Protocols, [Section 01 78 23 - Operation and Maintenance Data,] [Section 01 35 73 - Delegated Design Procedures (when the Contract includes delegation of professional design services)], and others.
d. The "Submittals" Article of the various Specifications sections, which indicates the required Submittals for the associated Work. Furnish all Submittals required by the Contract Documents regardless of whether explicitly indicated in the associated Specifications' "Submittals" Article.

B. This Section augments and supplements the requirements of the General Conditions, as may be modified by the Supplementary Conditions, relative to Submittals.

1.5 SCHEDULE OF SUBMITTALS

A. Informational Submittals: Submit the following:
1. Schedule of Submittals:
a. Timing:
1) Furnish Schedule of Submittals within time frames indicated in the General Conditions, as may be modified by the Supplementary Conditions.

2) Submit updated Schedule of Submittals with each submittal of the updated Progress Schedule.

b. Content: In accordance with the General Conditions, as may be modified by the Supplementary Conditions, and this Section. Requirements for content of preliminary Schedule of Submittals and subsequent Submittals of the Schedule of Submittals are identical. Identify on Schedule of Submittals all Submittals required in the Contract Documents. Updates of Schedule of Submittals shall show scheduled dates and actual dates for completed tasks. Clearly indicate Submittals that are on the Project's critical path. Indicate the following for each Submittal:
   1) Date by which Submittal will be received by Engineer.
   2) Whether Submittal will be for a substitution or "or-equal".
   3) Date by which Engineer's response is required. Allow not less than 14 days for Engineer's review, starting on Engineer's actual receipt of each Submittal. Allow increased time for large or complex Submittals.
   4) For Submittals for materials or equipment, date by which material or equipment must be at the Site to avoid delaying the Work and to avoid delaying the work of others (if any).

c. Prepare Schedule of Submittals using same software, and in same format, specified for Progress Schedules in Section 01 32 16 - Construction Progress Schedule.

d. Coordinate Schedule of Submittals with the Progress Schedule.

e. Schedule of Submittals that is not compatible with the Progress Schedule, or that does not indicate Submittals on the Project's critical path, or that places extraordinary demands on Engineer for time and resources, is unacceptable. Do not include Submittals not required by the Contract Documents.

f. In preparing Schedule of Submittals:
   1) Considering the nature and complexity of each Submittal, allow sufficient time for reviews and revisions.
   2) Allow reasonable time for: Engineer's review and processing of Submittals, for Submittals to be revised and resubmitted, and for returning Submittals to Contractor.
   3) Identify and accordingly schedule Submittals that are expected to have long anticipated review times.

1.6 PREPARATION OF SUBMITTALS

A. Prior to Submittal Preparation:
   1. The General Conditions, as may be modified by the Supplementary Conditions, address Contractor's responsibility for submitting for Owner's acceptance identification of Subcontractors and Suppliers. Obtain Owner's acceptance before entering into subcontracts and purchase orders for the Work.
   2. Comply with the Contract Documents relative to terms and conditions of subcontracts and purchase orders for the Work.
   3. Contractor's responsibilities for the following are set forth in the General Conditions, as may be modified by the Supplementary Conditions, and as may be augmented elsewhere in the Contract Documents:
      a. Obtaining field measurements and dimensions.
      b. Determining and verifying required quantities.
      c. Verifying compatibility of materials.
      d. Apportioning the Work among Subcontractors, Suppliers, and Contractor.
      e. Reconciling required materials, equipment, and other Contract requirements with Contractor's means, methods, techniques, sequences, and procedures of construction and with Contractor's safety and protection programs and precautions incident thereto.
      f. Reviewing applicable provisions of the Contract Documents and obtaining from Engineer necessary interpretations or clarifications.

B. Submittal Identification:

1. Submittal Number: Shall be a unique number assigned to each individual Submittal. Assign Submittal numbers as follows:
   a. First part of Submittal number shall be the applicable Specifications section number, followed by a hyphen.
   b. Second part of Submittal number shall be a three-digit number (sequentially numbered from 001 through 999) assigned to each separate Submittal furnished under the associated Specifications section.
   c. Example: Submittal number for the third Submittal furnished for Section 10 14 00 - Signage, would be "10 14 00-003".
2. Review Cycle Number: Each resubmittal of a given Submittal shall be indicated with a lower-case letter designation:
   a. No letter designation for initial (first) submittal of the Submittal number.
   b. "a" shall indicate first resubmittal of the Submittal number.
   c. "b" shall indicate second resubmittal of the Submittal number.
3. Examples:

Example Description	Submittal Identification	
	Submittal No.	Review Cycle
Initial (first) review cycle of the third Submittal furnished under Section 10 14 00 – Signage	10 14 00-003-	
Second review cycle (first resubmittal) of third Submittal furnished under Section 10 14 00 - Signage	10 14 00-003-	a

C. Marking of Submittals:
   1. Mark on each page of each Submittal and each individual component submitted with Submittal number and applicable Specifications paragraph.
   2. Mark each page of each Submittal with the Submittal page number.
   3. Each Shop Drawing sheet shall have title block with complete identifying information satisfactory to Engineer.
   4. For product data Submittals, operation and maintenance data Submittals, and other Submittals:
      a. Mark options to be furnished using broad, dark arrows or "clouds" clearly drawn around the relevant text or diagrams. Do not use highlighter for indicating options and features.
      b. Indicate options and features not furnished using clear strikeouts through the text or diagrams.

D. Submittal Organization and Content – General:
   1. Page or Sheet Size; Furnish Submittals with one or more of the following page or sheet sizes: (a) 8.5 inches by 11 inches; (b) 11 inches by 17 inches; (c) 22 inches by 34 inches; unless another sheet size is acceptable to Engineer.
   2. Language: All parts of each Submittal shall be in the English language.
   3. Units of Measurement: Clearly indicate units of measurement on Shop Drawings, product data Submittals, record documentation, and operation and maintenance data Submittals.
   4. Organize each Submittal logically to facilitate ease of understanding and review.
   5. To the extent practicable, arrange Submittal information in same order as requirements are written in the associated Specifications section.
   6. Each Submittal shall cover Work under only one Specifications section.
   7. To the extent practicable, package together Submittals for the same Specifications section. Do not furnish required information piecemeal.
   8. For large or complex Submittals, include a title page and table of contents.
   9. Include appropriately labeled fly sheets to separate distinct parts of each Submittal.
   10. Ensure legibility of all pages in each Submittal.

11. Minimize extraneous and unnecessary information in Submittals for materials and equipment. Do not submit information not relevant to the Submittal and associated requirements of the Contract Documents.
12. Contractor's, Subcontractor's, and Supplier's written comments on Shop Drawings and product data diagrams shall be colored green
13. Do not submit under Specifications sections with title that include "Basic Requirements", unless the subject material or equipment is specified, in total, in a Specifications section with the words, "Basic Requirements" in its title.

E. Electronic Documents Submittals:
1. Format: Electronic Documents Submittals shall be "portable document format" (.PDF) files unless expressly required otherwise by applicable provisions of the Contract Documents.
2. Electronic Documents Submittals must be electronically searchable when delivered to Engineer and other recipients.
3. Organization and Content:
   a. Each Electronic Documents Submittal shall be one file; do not divide individual Submittals into multiple Electronic Documents files each unless file size will exceed [20] MB.
   b. When Submittal is large or contains multiple parts, furnish PDF file with suitably titled electronic bookmark for each section of the Submittal.
   c. Content shall be identical to paper or other original Submittal. First page of each Electronic Documents Submittal shall be transmittal letter required in this's Paragraph 1.7.A.
4. Quality and Legibility: Electronic Documents Submittal files shall be made from the original and shall be clear and legible. Markings applied by Contractor, Subcontractor, or Supplier shall be clear, distinct, and readily apparent. Electronic Documents file shall be full size of original documents. Properly orient all pages for convenient reading on a computer display; do not furnish pages sideways or upside-down..
5. Provide sufficient internet service, software, and systems for Contractor with capability appropriate for transmitting the necessary files and receiving responses from Engineer or other entities.
6. Check not less than once per day for distribution of Electronic Documents Submittals responses and related Electronic Documents correspondence.

F. Proposed "Or-Equals", Substitutes, and Deviations from Contract Requirements:
1. "Or-Equals":
   a. The meaning of "or-equal" is addressed in Section 01 25 00 - Substitution Procedures.
   b. Contractor's request for approval of "or-equals" is to be presented via the associated Action Submittal(s) and shall include the information required in provisions governing "or-equals" in Section 01 62 00 - Product Options.
   c. Expressly and prominently indicate, "Proposed Or-Equal" on the associated Action Submittals when Submittal is for an "or-equal".
   d. Submittals requesting approval of an "or-equal" but not accompanied by the required, supplemental information will be deemed incomplete by Engineer and returned to Contractor without approval.
2. Substitutes:
   a. The meaning of "substitute" is indicated in Section 01 25 00 - Substitution Procedures.
   b. Requests for approval of substitutes shall comply with Section 01 25 00 - Substitution procedures, and other relevant provisions of the Contract Documents.
   c. Contractor's request for approval of substitute is separate from the associated Action Submittal(s). Action Submittals that request approval of a substitute when a separate, formal substitution request (furnished in accordance with the Contract Documents) was not previously furnished to Engineer, followed by formal approval in via an appropriate contract modification (typically either a Field Order or Change Order), will be deemed by Engineer as non-compliant with the Contract Documents and will be returned to Contractor without approval.

d. Contractor is solely responsible for delays incurred due to substitutes proposed via Submittals that have not been previously duly approved via an appropriate Contract modification.
e. Action Submittals for items or procedures approved via an appropriate Contract modification shall include a copy of the Contract modification in which the substitute was approved.

3. Submittals with Proposed Deviations from Contract Requirements:
   a. When Submittal proposes deviations from requirements of the Contract Documents, the Submittal shall clearly and expressly indicate each proposed deviation.
   b. Also comply with this Section's provision, in the Article below, on Contractor's transmittal letter expressly alerting Engineer to the proposed deviations.
   c. Comply with requirements of the Contract regarding substitutes and "or-equals".
   d. When deviation is proposed, also appropriately revise text of Contractor's approval, from that required below in this Article.
   e. When Submittal includes deviations from Contract requirements and either the Submittal itself, Contractor's transmittal letter, or both, do not comply fully with Contract requirements for indicating deviations in Submittals and giving separate written notice thereof, Engineer's approval of such deviations will be deemed null and void unless Engineer's written response to the Submittal has expressly acknowledged such deviation and indicated Engineer's approval thereof.
   f. Contractor is solely responsible for delays and costs incurred due to any and all Submittals with deviations from Contract requirements that were not properly, expressly indicated and approved in accordance with the Contract Documents. Deviations not duly approved in accordance with the Contract Documents may be deemed defective Work. Contractor is solely responsible for remedying defective Work and all associated cost and time impacts.

G. Contractor's Approval of Submittals:
1. Contractor's Review: Before transmitting Submittals to Engineer, review each Submittal to:
   a. Ensure proper coordination of the Work.
   b. Determine that each Submittal is in accordance with Contractor's desires.
   c. Verify that Submittal contains sufficient information for Engineer to determine compliance with the Contract Documents.
2. Incomplete or inadequate Submittals will be returned without detailed review by Engineer.
3. Contractor's Approval Stamp and Signature:
   a. Each Submittal furnished shall bear Contractor's approval stamp (or facsimile thereof) and signature, as evidence that the Submittal has been reviewed and approved by Contractor and verified as complete and in accordance with the Contract Documents.
   b. Submittals without Contractor's approval and signature (as required by the contract Documents) will be returned to Contractor without further review by Engineer and deemed incomplete.
   c. Engineer reserves the right to reject as incomplete Submittals where Contractor's approval signature appears computer-generated or reproduced without the active involvement or review of Contractor's signatory.
   d. Contractor's approval shall contain the following text:

      Project Name: _____
      Contractor's Name: _____
      Contract Designation: _____
      Date: _____

      ---------- *Reference* ----------

      Submittal Title: _____
      Specifications:
      Section: _____

Page No.: _____
Paragraph No.: _____
Drawing No.: [_____] of _____
Location of Work: _____

Submittal No. and Review Cycle: _____
Coordinated by Contractor with Submittal Nos.: _____
_____

I hereby certify that Contractor has satisfied Contractor's obligations under the Contract Documents relative to Contractor's review and approval of this Submittal, including: (1) reviewed and coordinated the Submittal with other Submittals and with the requirements of the Work and the Contract Documents; (2) determined and verified all: field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal, (b) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work, and (c) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; (3) confirmed the Submittal is complete with respect to all related data included in the Submittal; and (4) clearly and expressly indicated all proposed deviations (if any) from the requirements of the Contract Documents both in the Submittal itself and in the Submittal's transmittal letter. Accordingly, this Submittal is hereby approved for Contractor by:

Approved for Contractor by: _____

H. Resubmittals:
   1. Refer to the General Conditions, as may be modified by the Supplementary Conditions, for requirements regarding resubmitting required Submittals.
   2. In addition to limits on the quantity of resubmittals, as indicated in the General Conditions, Contractor shall furnish Submittals with such completeness, accuracy, and compliance with the Contract Documents to obtain Engineer's approval or acceptance, as applicable, without the total quantity of Submittals furnished, including all initial Submittals and all resubmittals, exceeding [125] [150]% of the number of Submittals indicated on the Schedule of Submittals initially accepted by Engineer, plus a corresponding percentage of the quantity of Submittals required by Change Orders, Work Change Directives, and Field Orders.
   3. Do not increase the scope of prior review cycle of the same Submittal.
   4. Indicate on Contractor's transmittal letter how Submittal was revised from previous review cycle of the Submittal and where the revisions or corrections are located within the resubmittal.
   5. Expressly address and provide response for all components previously transmitted by Engineer on prior review cycles of the subject Submittal. Where resubmittal lacks complete response to Engineer's prior comments, Engineer may deem such resubmittal as incomplete and return it to Contractor without further review.
   6. Where part of the Submittal's prior review cycle was expressly approved or accepted, as applicable, by Engineer, do not include such items in subsequent resubmittals.
   7. Indicate, "Not Yet Resolved—To Be Resubmitted at a Later Date" for any items not approved in prior review cycle of the Submittal for items not included in the subject resubmittal. Engineer reserves the right to deem incomplete Submittals "Not Approved" or "Revise and Resubmit". Furnishing incomplete or partial resubmittals is discouraged.
   8. Resubmittal of Previously Approved or Accepted Items:
      a. Do not resubmit on a given item previously approved or accepted, as applicable, by Engineer, without Engineer's advance consent. Consent will be given for bona-fide unavailability of a previously approved or accepted item where Contractor has acted in good faith in a timely manner with due diligence to comply with the Contract Times.

b. Destroy or conspicuously mark “SUPERSEDED” on all documents having previously received Engineer’s approval or acceptance, as applicable, that are superseded by a resubmittal.

1.7 TRANSMITTAL OF SUBMITTALS BY CONTRACTOR

A. Contractor’s Transmittal Letters for Submittals:
1. Furnish separate transmittal letter with each Submittal. Use transmittal form attached to this Section (as Exhibit 01 33 00-A) unless other transmittal form is acceptable to Engineer at the start of the Project’s construction.
2. When transmittal form other than this Section’s Exhibit 01 33 00-A is acceptable to Engineer, at beginning of each transmittal, include a reference heading indicating: Contractor’s name, Owner’s name, Project designation, Contract designation, transmittal number, and Submittal number (with review cycle).
3. “Or-Equals”: When the Submittal is proposing an “or-equal”, expressly so indicate on transmittal form submitted by Contrator.
4. Proposed Deviations from Contract Requirements: When the Submittal proposes deviations from requirements of the Contract Documents, transmittal letter shall specifically describe each proposed deviation:

B. Submittal Delivery Method:
1. This provision presents general requirements for delivery or all Submittals unless otherwise required elsewhere in the Contract Documents.
2. Furnish Submittals as Electronic Documents delivered in accordance with Section 01 31 26 – Electronic Communication Protocols.
3. Furnish Submittals to Engineer and each other entity indicated in the Contract Documents as receiving a Submittal directly from Contractor.
4. Address Submittals to Engineer as follows: HDR, [indicate complete physical address of Engineer’s project office suitable for delivery of packages], to attention of [Engineer’s contact person], [contact person’s e-mail address].
5. Preliminary Copy for [Engineer’s] Field Office: Simultaneously with delivering Electronic Documents Submittal to Engineer, also deliver:
a. Electronic Documents Submittal to [Resident Project Representative].
b. [One] paper copy of complete Submittal delivered to [Engineer’s] field office at the Site.

C. Samples - Transmittal and Delivery:
1. Labeling and Tagging Samples:
a. Securely label or tag each Sample with Submittal identification number.
b. Label or tag shall include clear space at least 4 inches by 4 inches in size for affixing Engineer’s review stamp indicating disposition assigned by Engineer.
c. Label or tag shall not cover, conceal, or alter Sample’s appearance or features.
d. Label or tag shall not be separated from the Sample.
2. Timing: Deliver required Samples concurrently with other Action Submittals required for the same element of the Work, unless other delivery time frame is indicated in the Schedule of Submittals accepted by Engineer.
3. Quantity Required:
a. Where the Contract Documents require a Sample as a field mock-up, provide Sample at the Site or in the Work at location acceptable to Engineer. Provide the quantity of field mock-ups required by the contract Documents; if not otherwise shown or specified, provide one of each required field mock-up. .
b. For reasonably portable Samples, deliver the quantity of Samples required in the associated Specifications. If quantity of Samples is not indicated in the associated Specifications section, deliver to Engineer not less than [three] identical Samples of each item for which Sample is required.
c. Samples will not be returned to Contractor. If Contractor requires Sample(s) for Contractor’s use, so advise Engineer in writing and furnish additional copies of the

Sample. Contractor is responsible for furnishing, shipping, and transporting additional Samples.

4. Locations for Delivery of Reasonably Portable Samples for Review:
   a. Deliver [one] physical Sample to [Engineer's] [Owner's Site Representative's] field office at the Site.
   b. Deliver balance of required physical Samples to Engineer at address indicated in this Article for receipt of Submittals, unless otherwise directed by Engineer.

D. Closeout Submittals –Transmittal and Delivery:
   1. Furnish the following Closeout Submittals in accordance with general requirements for transmitting and delivering Submittals, indicated above in this Article: maintenance contracts; warranty bonds (when required) and other bonds required for specific materials, equipment, or systems; warranty documentation; and sustainable design closeout documentation (when required). On documents such as maintenance contracts and bonds, include on each document furnished original ("wet") signature of entity issuing said document. When original "wet" signatures are required, furnish such Submittals to Engineer both on original paper and as Electronic Documents, and to other entities furnish as indicated above in this Article for general requirements for Submittals.
   2. Operations and Maintenance Manuals: Submit in accordance with Section 01 78 23 - Operation and Maintenance Data.
   3. Record Documents: Submit in accordance with Section 01 78 39 - Project Record Documents.
   4. Software: In addition to software installed on Owner's computer system, furnish number of copies of software required in the Specifications section where the software is specified. Preferred means of transmittal is via secure file transfer directly to Owner (or facility manager, if other than Owner) via secure file transfer method mutually acceptable to software developer and the receiving entity. When secure file transfer is used, submit to Engineer documentation signed or electronically acknowledged by Owner that the files were received. Where such software is available only on the software developer's portable media, furnish such software on software developer's original, portable media, sealed in software developer's original, unopened, clearly labeled packaging.

E. Maintenance Materials Submittals – Delivery:
   1. Deliver physical maintenance materials required by the Contract Documents in accordance with applicable provisions of the Contract, including Section 01 78 43 - Spare Parts and Extra Materials.
   2. Submit documentation of delivery of (Maintenance Materials Submittals) in accordance with general requirements for Submittals as indicated in this Section.

1.8 ENGINEER'S REVIEW OF SUBMITTALS

A. This Article applies to review of all Submittals by Engineer or other entity to whom the Contract Documents require such Submittal be furnished.

B. Timing:
   1. Timing of Engineer's review will be in accordance with the Schedule of Submittals accepted by Engineer.
   2. When Submittal is delivered to Engineer on a date other than that indicated in the Schedule of Submittals accepted by Engineer, duration of Engineer's review may differ from that indicated in the Schedule of Submittals, based on Engineer's availability and resources. Engineer will make good-faith effort to furnish responses to Submittals in a timely manner.
   3. Contractor is responsible for communicating to Engineer when a Submittal is on the Project's critical path.

C. Engineer's Review:
   1. Markings:
      a. Comments or responses marked directly on Submittal by Engineer (or other entity reviewing Submittal) will be colored red.

b. Engineer may also present narrative comments on a comment sheet inserted by Engineer into the Submittal or included on Engineer's transmittal letter for the Submittal. Such comments will be in black text. When a separate comment sheet is included by Engineer, such sheet will be clearly identified as Engineer's comments.

2. Engineer's review and disposition assigned to Submittal are subject to the following:
   a. Submittal disposition is subject to: Engineer's comments on the Submittal; disclaimer language on Engineer's Submittal transmittal letter; Engineer's Submittal review stamp (when used) or equivalent (when used); and this provision.
   b. Engineer's review is only for general compatibility with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, and for general compliance with the information given in the Contract Documents.
   c. Contractor shall be solely responsible for complying with the Contract Documents, as well as with Supplier instructions consistent with the Contract Documents, Owner's directions, and Laws and Regulations. Contractor is solely responsible for obtaining, correlating, confirming, and correcting dimensions at the Site; quantities; information and choices pertaining to fabrication processes; means, methods, sequences, procedures, and techniques of construction; safety precautions and programs incident thereto; and for coordinating the work of all trades.
   d. Engineer is not responsible for resubmittals not yet furnished by Contractor or tracking Contractor's progress on resubmittals.
3. Documents not required by the Contract Documents but nonetheless furnished by Contractor as submittals will not be reviewed by Engineer.

D. Meaning of Submittal disposition Assigned by Engineer:
1. Action Submittals:
   a. "Approved" (Action Code A): Upon return of Submittal marked "Approved", order, ship, or fabricate materials and equipment included in the Submittal (pending Engineer's approval or acceptance, as applicable, of production-related qualifications statements and certifications, and required source quality control Submittals) or otherwise proceed with the Work in accordance with the Submittal and the Contract Documents.
   b. "Approved as Noted" (Action Code B): Upon return of Submittal marked "Approved as Noted", order, ship, or fabricate materials and equipment included in the Submittal (pending Engineer's approval or acceptance, as applicable, of production-related qualifications statements and certifications, and required source quality control Submittals) or otherwise proceed with the Work in accordance with the Submittal and the Contract Documents, and in accordance with Engineer's comments and notes indicated in Engineer's Submittal response
   c. "Revise and Resubmit" (Action Code C): Upon return of Submittal marked "Revise and Resubmit", make the revisions necessary and indicated and resubmit to Engineer for approval.
   d. "Not Approved" (Action Code D): This disposition indicates material or equipment that cannot be approved. "Not Approved" disposition may also be applied to Submittals that are incomplete. Upon return of Submittal marked "Not Approved", repeat initial submittal procedure utilizing approvable material or equipment, with a complete Submittal clearly indicating all information required.
2. Informational, Closeout, and Maintenance Materials Submittals:
   a. "Accepted" (Action Code F): Information included in Submittal complies with the applicable requirements of the Contract Documents and is acceptable. No further action by Contractor is required relative to such Submittal, and the Work covered by the Submittal may proceed. Materials and equipment with Submittals with this disposition may be shipped or operated, as applicable. Submittals assigned "Accepted" by Engineer (or other reviewing entity) does not indicate Engineer's acceptance of the associated Work, which is indicated only as set forth in the General Conditions and Section 01 77 19 – Closeout Requirements.

b. "Not Acceptable" (Action Code G): Submittal, or part thereof, does not indicate full compliance with applicable requirements of the Contract Documents and is not acceptable. Provide labor, materials, equipment, services, and incidentals necessary to properly and accurately revise Submittal and resubmit to indicate acceptability and compliance with the Contract Documents

3. Other:
   a. "Submittal Not Reviewed" (Action Code E): Documents so marked by Engineer are not required by the Contract Documents. Submittals may also be marked with this disposition when information in the document was previously reviewed and approved or accepted by Engineer, as applicable.

E. Distribution of Engineer's Responses:
   1. Unless otherwise indicated in the Contract Documents, Engineer will distribute written responses (as Electronic Documents) to Submittals to the following:
      a. Contractor.
      b. Owner.
      c. Engineer's file.
   2. Engineer's acceptance of Informational Submittals, Closeout Submittals, and Maintenance Materials Submittals will be recorded in Engineer's Submittal log. Copy of Engineer's Submittals log is available from Engineer upon written request of Owner or Contractor. If no such request is received by Engineer, Engineer will distribute copy of Engineer's Submittals log once per month (when Submittals have been received or acted on by Engineer). Engineer may distribute copy of Engineer's Submittals log as an Electronic Document or as handout at construction progress meetings.
   3. Paper copies of Engineer's Submittal responses will not be distributed unless otherwise required by the Contract Documents or otherwise agreed to by Engineer.
   4. Contractor is responsible for forwarding Engineer's Submittals responses to Subcontractors and Suppliers as appropriate, and for coordinating the Work of all trades.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 ATTACHMENTS

A. The documents listed below, following this Section's "End of Section" designation, are part of this Specifications Section:
   1. "Exhibit 01 33 00-A – Transmittal for Submittal No. [_____]" (one page).

END OF SECTION

Exhibit 01 33 00-A

Transmittal for Submittal No. [_____]-[_____]

Project Name:		Date Received:	
Project Owner:		Checked By:	
Contractor:	HDR Engineering, Inc.	Log Page:	
Address:	Address:	HDR No.:	
		Spec Section:	
		Drawing/Detail No.:	
Attn (Contractor):	Attn (HDR):	Review Cycle	
Date Transmitted by Contractor:	Date of Engineer's Response Transmittal:		

Item No.	Submittal No.	Description (indicate number of copies where paper copies of physical Samples are returned)	Manufacturer	Supplier Dwg or Data No.	Engineer's Disposition (Action Code) *
1					
2					
3					
4					

Contractor's Remarks *(insert text)*:

Engineer's Remarks *(insert text)*: :

* **Legend for Action Code** indicated above, assigned by Engineer:

Action Submittal:
- A – Approved
- B – Approved as Noted
- C – Revise and Resubmit
- D – Not Approved
- E – Submittal Not Reviewed

Informational, Closeout, or Maintenance Materials Submittal:
- F – Accepted (this code normally recorded in Engineer's Submittals log).
- G – Not Acceptable

Engineer's Disclaimer (for Submittals that do not involve delegated design):

a. Submittal action code is subject to: Engineer's comments on the Submittal, comment sheets (if any), and this transmittal letter; disclaimer language on Engineer's Submittal review stamp or equivalent; and Specifications Section 01 33 00 – Submittal Procedures.

b. Engineer's review is only for general compatibility with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, and for general compliance with the information given in the Contract Documents.

c. Contractor shall be solely responsible for complying with the Contract Documents, as well as with Supplier instructions consistent with the Contract Documents, Owner's directions, and Laws and Regulations. Contractor is solely responsible for obtaining, correlating, confirming, and correcting dimensions at the Site; quantities; information and choices pertaining to fabrication processes; means, methods, sequences, procedures, and techniques of construction; safety precautions and programs incident thereto; and for coordinating the work of all trades.

Reviewed for HDR by:	**Date of Engineer's Review:**

Distribution: Contractor | File | Field | Owner | Other

SECTION 01 51 05
TEMPORARY UTILITIES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall maintain strict supervision of use of temporary utility services:
   1. Enforce compliance with applicable standards.
   2. Enforce safety practices.
   3. Prevent abuse of services.

1.2 REQUIREMENTS OF REGULATORY AGENCIES

A. Obtain and pay for all permits as required by governing authorities.

B. Obtain and pay for temporary easements required across property other than that of Owner.

C. Comply with applicable codes.

1.3 REMOVAL

A. Completely remove temporary materials, equipment, and miscellaneous items upon completion of construction and approval of the Engineer.

B. Repair damage caused by installation and restore to specified or original condition.

1.4 TEMPORARY ELECTRICITY

A. Electrical services for construction needs and for lighting and heating the work area will be provided by the Contractor.

1.5 TEMPORARY WATER

A. Water necessary for construction, testing and disinfection will be provided by the owner for passing tests. Water for repeated fall tests shall be provided at the contractor’s expense.

END OF SECTION

SECTION 01 73 29
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Provide cutting and patching work to properly complete the work of the project, complying with requirements for connection to existing lines and structures.

B. Do not cut and patch in a manner that would result in a failure of the work to perform as intended, decreased energy efficiency, increased maintenance, reduced operational life, or decreased safety.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Match existing materials with new materials conforming to project requirements when performing cutting and patching work.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Inspect conditions prior to work to identify scope and type of work required. Protect adjacent work. Notify Owner of work requiring interruption to building services or Owner's operations.

B. Perform work with workmen skilled in the trades involved. Prepare sample area of each type of work for approval.

C. Cutting: Use cutting tools, not chopping tools. Make neat holes. Minimize damage to adjacent work. Check for concealed utilities and structure before cutting.

D. Patching: Make patches, seams, and joints durable and inconspicuous. Comply with tolerances for new work.

E. Clean work area and areas affected by cutting and patching operations.

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

A. Section 01300 - Submittals.

1.2 MAINTENANCE OF DOCUMENTS

A. Maintain at job site, one copy of:
   1. Contract Drawings.
   2. Specifications.
   3. Addenda.
   4. Reviewed Shop Drawings.
   5. Change Orders.
   6. Other Modifications to Contract.

B. Store documents in approved location, apart from documents used for construction.

C. Provide files and racks for storage of documents.

D. Maintain documents in clean, dry legible condition.

E. Do not use record documents for construction purposes.

F. Make documents available at all times for inspection by Engineer and Owner.

1.3 MARKING DEVICES

A. Provide colored pencil or felt-tip marking pen for all marking.

1.4 RECORDING

A. Label each document "RECORD DRAWING" in 2-inch high printed letters.

B. Keep record documents current.

C. Do not permanently conceal any work until required information has been recorded.

D. Contract Drawings: Legibly mark to record actual construction:
   1. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
   2. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
   3. Field changes of dimension and detail.
   4. Changes made by Change Order or Field Order.
   5. Details not on original Contract Drawings.

E. Specifications and Addenda: Legibly mark up each Section to record:
   1. Manufacturer, trade name, catalog number, and Supplier of each product and item of equipment actually installed.
   2. Changes made by Change Order or Field Order.
   3. Other matters not originally specified.

F. Shop Drawings: Maintain as record documents; legibly annotate Shop Drawings to record changes made after review.

1.5 SUBMITTAL

A. At completion of project, deliver record documents to Engineer.

B. Accompany submittal with transmittal letter, in duplicate, containing:
   1. Date.
   2. Project title and number.
   3. Contractor's name and address.
   4. Title and number of each record document.
   5. Certification that each document as submitted is complete and accurate.
   6. Signature of Contractor or his authorized representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 10 14 00
IDENTIFICATION DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Tag, tape and stenciling systems for equipment, piping, valves, pumps, ductwork and similar items.
   2. Hazard and safety signs.

B. Related Specification Sections include but are not necessarily limited to:

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Society of Mechanical Engineers (ASME):
      a. A13.1, Scheme for the Identification of Piping Systems.
   2. The International Society of Automation (ISA).
   3. National Electrical Manufacturers Association/American National Standards Institute (NEMA/ANSI):
      a. Z535.1, Safety Color Code.
      b. Z535.2, Environmental and Facility Safety Signs.
      c. Z535.3, Criteria for Safety Symbols.
      d. Z535.4, Product Safety Signs and Labels.
   4. National Fire Protection Association (NFPA):
      a. 70, National Electrical Code (NEC).
      b. 704, Standard System for the Identification of Hazards of Materials for Emergency Response.
   5. Occupational Safety and Health Administration (OSHA):
      a. 29 CFR 1910.145, Specification for Accident Prevention Signs and Tags.

1.3 SUBMITTALS

A. Shop Drawings:
   1. Product technical data including:
      a. Catalog information for all identification systems.
      b. Acknowledgement that products submitted meet requirements of standards referenced.
   2. Identification register, listing all items in PART 3 of this Specification Section to be identified, type of identification system to be used, lettering, location and color.
   3. Schedule of Hazard and Safety Signage indicating text and graphics.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
   1. W.H. Brady Co.
   2. Panduit.
   3. Seton.
   4. National Band and Tag Co.
   5. Carlton Industries, Inc.

2.2 MANUFACTURED UNITS

A. Type F - Underground Warning Tape:

1. Materials: Polyethylene.
2. Size:
   a. 6 inches wide (minimum).
   b. Thickness: 3.5 mils.
3. Fabrication:
   a. Legend: Preprinted and permanently imbedded.
   b. Message continuous printed.
   c. Tensile strength: 1750 psi.
4. Color: As specified.

B. Underground Tracer Wire:
1. Materials:
   a. Wire:
      1) 12 GA AWG.
      2) Solid.
   b. Wire nuts: Waterproof type.
   c. Split bolts: Brass.

2.3 ACCESSORIES

A. Fasteners:
1. Bead chain: #6 brass, aluminum or stainless steel.
2. Plastic strap: Nylon, urethane or polypropylene.
3. Screws: Self-tapping, stainless steel.
4. Adhesive, solvent activated.

2.4 MAINTENANCE MATERIALS

A. Where stenciled markers are provided, clean and retain stencils after completion and include in extra stock, along with required stock of paints and applicators.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION

A. Install identification devices at specified locations.

B. All identification devices to be printed by mechanical process, hand printing is not acceptable.

C. Attach tags to equipment with sufficient surface or body area with solvent activated adhesive applied to back of each tag.

D. Attach tags with 1/8 inches round or flat head screws to equipment without sufficient surface or body area, or porous surfaces.
1. Where attachment with screws should not or cannot penetrate substrate, attach with plastic strap.

E. Tracer Wire:
1. Attach to pipe at a maximum of 10 feet intervals with tape or tie-wraps.
2. Continuous pass from each valve box and above grade at each structure.
3. Coil enough wire at each valve box to extend wire a foot above the ground surface.
4. 1,000 feet maximum spacing between valve boxes.
5. If split bolts are used for splicing, wrap with electrical tape.
6. If wire nuts are used for splicing, knot wire at each splice point leaving 6 inches of wire for splicing.
7. Use continuous strand of wire between valve box where possible.
   a. Continuous length shall be no shorter than 100 feet.

3.2 SCHEDULES

1. General:

a. Provide arrows and markers on piping.
   1) At 20 feet maximum centers along continuous lines.
   2) At changes in direction (route) or obstructions.
   3) At valves, risers, "T" joints, machinery or equipment.
   4) Where pipes pass through floors, walls, ceilings, cladding assemblies and like obstructions provide markers on both sides.
b. Position markers on both sides of pipe with arrow markers pointing in flow direction.
   1) If flow is in both directions use double headed arrow markers.
c. Apply tapes and stenciling in uniform manner parallel to piping.

2. Trenches with piping:
   a. Tag type: Type F - Underground Warning Tape
   b. Location: Halfway between top of piping and finished grade.
   c. Letter height: 1-1/4 inches minimum.
   d. Natural gas or digester gas:
      1) Color: Yellow with black letters.
      2) Legend:
         a) First line: “CAUTION CAUTION CAUTION”
         b) Second line: “BURIED GAS LINE BELOW”
   e. Potable water:
      1) Color: Blue with black letters.
      2) Legend:
         a) First line: “CAUTION CAUTION CAUTION”
         b) Second line: “BURIED WATER LINE BELOW”
   f. Storm and sanitary sewer lines:
      1) Color: Green with black letters.
      2) Legend:
         a) First line: “CAUTION CAUTION CAUTION”
         b) Second line: “BURIED SEWER LINE BELOW”
   g. (Nonpotable) water piping, except 3 inches and smaller irrigation pipe:
      1) Color: Green with black letters.
      2) Legend:
         a) First line: “CAUTION CAUTION CAUTION”
         b) Second line: “BURIED NONPOTABLE WATER LINE BELOW”
   h. Chemical feed piping (e.g., chlorine solution, polymer solution, caustic solution, etc.):
      1) Color: Yellow with black letters.
      2) Legend:
         a) First line: “CAUTION CAUTION CAUTION”
         b) Second line: “BURIED CHEMICAL LINE BELOW”
   i. Other piping (e.g., compressed air, irrigation, refrigerant, heating water, etc.):
      1) Color: Yellow with black letters.
      2) Legend:
         a) First line: “CAUTION CAUTION CAUTION”
         b) Second line: “BURIED PIPE LINE BELOW”

END OF SECTION

SECTION 31 10 00
SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Site clearing Work, including:
a. General provisions for site clearing Work.
b. Preparation for site clearing Work.
c. Clearing and grubbing.
d. Tree protection, selective removals, and selective trimming.
e. Disposal and cleaning.
f. Stripping and stockpiling of topsoil.

B. Related Requirements: Include but are not necessarily limited to:

1.2 REFERENCES

A. Terminology:
1. Terms indicated below are not defined terms indicated with initial capital letters but, when used in this Section, have the meanings indicated below:
a. “Arborist” means Subcontractor retained to perform Work requiring a specialist in trees, shrubs, brush, other vegetation of the types existing at the Site, and possessing not less than the required qualifications indicated in this Section.
b. “Clearing and grubbing” means removing and disposing of all: (1) trees, brush, and other vegetation, logs, and similar items (“clearing”); and (2) stumps, roots, logs, rubbish, and debris on or in the soil (“grubbing”) after Clearing. Clearing and grubbing includes grinding and removing of stumps. When clearing and grubbing, topsoil stripping and stockpiling, [and required demolition Work] is complete, the Site will be ready for grading and other new construction.
c. “Demolition” means removal, whether in whole or in part, of existing human-made construction, such as removal of buildings, structures, and building systems; site work (such as pavement, curbs, sidewalks, gutters) and the like; Underground Facilities; and other existing construction.
d. “Selective removal” means removal of specific trees, shrubs, brush, and other vegetation, whether as shown or indicated in the Contract Documents or as directed at the Site by Engineer.
e. “Selective trimming” means removal of selected parts of trees, shrubs, brush, and other vegetation, performed by arborist, for the purpose of either: (1) allowing installation of new construction adjacent to or through the tree, shrub, brush, or vegetation, or)2) removing damaged or unhealthy growth, to allow balance of the subject tree, shrub, brush, or vegetation to continue normal, healthy growth.
f. “Site clearing” means all the Work required by this Section and related Drawings.
g. “Topsoil” means existing material at the Site, visible after clearing and grubbing, to be stripped, when such material is friable, clay loam, surface soil present in depth of not less than four inches. Topsoil shall be free of subsoil, clay lumps, stones, and other objects over two-inch diameter and other objectionable material. Topsoil required for planting and landscaping Work in the Specifications of Division 32 may differ from the meaning indicated in this Section.

B. Reference Standards:
1. ASTM International (ASTM):
a. C700, Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated.

b. D448, Standard Classification for Sizes of Aggregate for Road and Bridge Construction.

2. American National Standards Institute (ANSI):.
   a. A300, Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices.
3. International Society of Arboriculture (ISA):
   a. Container Rootball Shaving.
   b. Crown Correction.
   c. Balled and Burlapped Root Correction.
   d. Container Root Correction.
   e. High Branched Crown Observation.
   f. Low Branched Crown Observation.
   g. Multiple Low Branches Crown Observation.
   h. Balled and Burlapped Root Observation.
   i. Container Root Observation - Tree.
   j. Protection Maintenance.

1.3 QUALITY ASSURANCE

A. Qualifications:
   1. Arborist:
      a. Where selective removal, selective trimming, or both are required or necessary, retain the services of, and employ in the Work, accredited arborist, possessing qualifications acceptable to Engineer.
      b. Arborist shall be skilled, trained, and possess documented experience in successfully protecting, trimming, and restorative care of trees and shrubs of the types necessary for the Work.
      c. Certification: Arborist shall be certified by either International Society of Arboriculture (ISA) or American Society of Consulting Arborists (ASCA).
      d. Arborist shall use in selective removal and selective trimming Work only workers with specific skill and successful experience in this type of Work required. Such workers shall work under the direct, personal supervision of arborist.
      e. Submit to Engineer names, employer(s), certifications, other relevant qualifications and record of relevant experience, as indicated below, for not less than [three] successful projects involving same species of trees, shrubs, and vegetation as involved in the site clearing Work:
         1) Names and telephone numbers of site owners, architects or engineers responsible for projects.
         2) Approximate contract price of the selective removal and selective trimming of trees, shrubs, and vegetation.
         3) Approximate time of year work was performed on each referenced project.
         4) Approximate quantity and types of selective removal and selective trimming of performed.
         5) General indication of species of trees, shrubs, and vegetation involved.

1.4 SUBMITTALS

A. Action Submittals: Submit the following:
   1. Shop Drawings:
      a. Limits of Site Clearing Work: When limits of site clearing Work are not expressly shown on the Drawings, or where Contractor proposes alternative limits of site clearing Work, submit drawings, developed from the Drawings, clearly indicating proposed limits of site clearing Work, with dimensions indicated where appropriate.
      b. Where proposed limits of clearing and grubbing, selective removals, and topsoil stripping are not identical with each other, clearly and expressly indicate limits of each on the Shop Drawings. .

B. Informational Submittals: Submit the following:

1. Permits and Approvals:
   a. Submit copy of each permit required and obtained for site clearing Work, issued by authority having jurisdiction.
   b. Where Owner's permission or approval is required for selected site clearing activities, submit copy of Owner's written permission or approval for such activity.
   c. When approval of owner of property (other than Owner) is required for selected site clearing activity, submit to Engineer written copy of such approval.
2. Certificates:
   a. Arborist's certification that trees and shrubs shown or indicated to remain were protected during the site clearing Work in accordance with the Contract Documents.
   b. Where trees or shrubs (shown or indicated to remain) were damaged during site clearing Work, submit arborist's certification that such trees and shrubs were promptly and properly treated or, where successful treatment was not feasible, were replaced.
3. Qualifications Statements:
   a. Arborist qualifications.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tree Wound Dressing:
   1. Provide tree wound dressing, waterproof, adhesive and elastic with an antiseptic, free from kerosene, coal tar, creosote, and other material injurious to life of tree or other plant.

B. Drain Tile:
   1. Provide four-inch diameter, standard strength, perforated wall, bell-and- spigot clay pipe, in accordance with ASTM C700.

C. Drainage Fill:
   1. Selected crushed stone, or crushed or uncrushed gravel, washed.
   2. Size 24 (in accordance with ASTM D448), with 90 to 100 percent passing 2.5-inch sieve and not more than 10 percent passing 3/4-inch sieve.

D. Burlap:
   1. Jute, not less than 7.2 ounces per square yard.

E. For other materials needed for site clearing Work, such as stone, topsoil, or other, comply with requirements of the Contract Documents.

PART 3 - EXECUTION

3.1 SITE CLEARING – GENERAL

A. Limits of Site Clearing Work:
   1. Limits of site clearing Work are shown and indicated on the Drawings.

B. General Provisions for Site Clearing:
   1. Contractor shall provide all labor, materials, equipment, tools, services, and incidentals necessary and required to perform site clearing Work in accordance with the Contract Documents.
   2. Perform site clearing Work to avoid creating nuisances, pollution, and preventable adverse effects on the environment.
   3. Requirements of Authorities Having Jurisdiction:
      a. Perform site clearing Work in accordance with Laws and Regulations.
      b. Obtain, pay for, and comply with permits required for site clearing Work. Obtain from authorities having jurisdiction and furnish copy of each permit as a Submittal.
   4. Traffic Control:

a. Where site clearing Work is along or adjacent to travelled ways subject to public traffic, comply with Maintenance of Traffic plan in bridge drawings.
b. Establish such controls prior to and maintain in place throughout site clearing Work that has potential to affect traffic.

5. Site clearing Work shall comply with ANSI A300 and applicable ISA standards indicated in this Section's "References" Article, unless the Contract Documents indicate more-stringent requirements.

3.2 PREPARATION

A. Permits and Approvals:
1. Do not commence site clearing Work until necessary permits and approvals are obtained and copies furnished to Engineer as Submittals.

B. Delineation of Limits of Site Clearing Work Areas:
1. Locate and clearly flag at the Site:
a. Limits of site clearing Work.
b. Trees, shrubs, vegetation, and other materials to remain within limits of site clearing Work.
c. Trees, shrubs, and other vegetation to be selectively trimmed.
d. Trees, shrubs, and vegetation to be selectively removed.
e. Salvageable trees, shrubs, and vegetation (to be relocated) within limits of site clearing Work.
2. Flagging:
a. Flagging shall be high-visibility type. Where necessary, provide lath or stakes driven into the ground, with flagging, to clearly delineate limits.
b. Provide different-colored flagging for each type of delineation required by this Article.
c. Promptly replace lost, moved, or destroyed flagging until Engineer concurs that flagging is no longer needed.
3. Review with Engineer:
a. Before starting site clearing Work, other than flagging, review at the Site with Engineer.
b. Make corrections as necessary.
c. Review all trees, 12-inch diameter (measured one foot above ground) and larger, to be removed or selectively trimmed.
d. Review with Engineer at the Site trees and shrubs to be selectively trimmed, to reach mutual agreement on extent of selective trimming required.

C. Protection: Establish protection of trees, shrubs, and vegetation to remain, in accordance with this Section's Article, "Tree Protection, Selective Removals, and Selective Trimming", and other applicable provisions of the Contract Documents.

D. Temporary Erosion and Sediment Controls:
1. Provide applicable temporary erosion and sediment controls before commencing clearing and grubbing and topsoil stripping Work.
2. Comply with temporary erosion and sediment control requirements identified in plans.
3. Continue providing temporary erosion and sediment controls as clearing and grubbing and topsoil stripping and stockpiling Work progresses into previously uncleared, ungrubbed areas of the Site...

3.3 CLEARING AND GRUBBING

A. Clearing and Grubbing – General:
1. Remove and dispose of all materials constituting clearing and grubbing Work within limits shown and indicated in the Contract Documents.
2. After grubbing Work is complete, properly fill holes resulting from grubbing before commencing site grading Work.

B. Trees and Shrubs Improperly Destroyed or Damaged:

1. Refer to this Section's Article, "Tree Protection, Selective Removals, and Selective Trimming".

C. Trees and Shrubs to Remain:
1. Trees and shrubs to remain shall be protected, and trimmed where necessary or required, in accordance with this Section's Article, "Tree Protection, Selective Removals, and Selective Trimming".

3.4 TREE PROTECTION, SELECTIVE REMOVALS, AND SELECTIVE TRIMMING

A. General Provisions for Tree Protection, Selective Removals, and Selective Trimming:
1. Provide temporary fencing, barricades, or guarding measures, as recommended by arborist, outside drip line of trees and shrubs to remain.
2. Protect root systems from damage caused by noxious materials, storm water runoff, site clearing, planting and landscaping, other Work, and storage of materials and equipment. Protect root systems from flooding, erosion, and excessive wetting resulting from dewatering of excavations, drainage of tanks, and other construction activities.
3. Fires are not allowed under or adjacent to trees, shrubs, and other vegetation to remain.
4. Do not store matter resulting from site clearing or demolition, topsoil, or other excavated material within drip line of trees and shrubs to remain. Vehicles are not allowed within drip line. Restrict foot, vehicle and equipment traffic to prevent compaction of soil over root systems. Where such activities are unavoidable, and only as acceptable to Engineer, provide temporary, continuous, heavy-duty wood planking effectively fastened together and capable of distributing loads from such activities. Temporary planking shall be underlaid by layer of filter fabric covered with two-inch layer of gravel.
5. Cut branches and roots, when necessary, with sharp pruning instruments; do not break or chop. Fully paint cuts 1/2-inch and larger in size with tree wound dressing.

B. Excavation and Protection of Trees and Shrubs:
1. Excavate within drip line of trees only where shown.
2. Where trenching for utilities is required within drip line, tunnel under or around main lateral feeder roots by drilling, auger boring, pipe jacking, or digging by hand under supervision of arborist. Do not cut main lateral roots or tap roots; cut smaller roots, which interfere with installation of the Work.
3. Where excavation for the Work is required within drip line of trees or shrubs, hand excavate to minimize damage to root systems. Perform excavation under supervision of arborist. Provide temporary shoring or other protective support systems at excavations, to minimize sloping and benching of excavations. Use narrow tine spading forks and comb excavated material to expose roots.
4. Relocate roots in backfill areas wherever possible. If large, main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without breaking. If encountered immediately adjacent to location of construction and relocation is not practical, cut roots approximately three inches back from construction.
5. Do not allow exposed roots to dry out before permanent backfill is provided; provide temporary earth cover. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with earth.

C. Grade Adjustments and Tree Protection:
1. Maintain existing grade within drip line of trees, unless otherwise shown or indicated.
2. Lowering of Preconstruction Grade:
   a. Where required finish grade is below preconstruction grade around trees and shrubs, grade beyond drip line. Maintain preconstruction grade within drip line of trees and shrubs.
   b. Prune tree and shrub roots exposed during grade lowering, or provide permanent protections as recommended by arborist. Do not cut main or lateral roots or tap-roots; cut only smaller roots.
   c. Compensate for loss of roots and prune branches to stimulate root growth.

d. Provide extended service through completion of the Contract correction period as recommended by arborist.

3. Minor Fills:
   a. Where preconstruction grade is six inches or less below elevation of finish grade shown, fill with topsoil complying with quality requirements of Specifications for finish grading and landscaping.
   b. Place in single layer and do not compact.
   c. Hand-grade to required finish elevations.
4. Moderate Fills:
   a. Where preconstruction grade is more than six inches, but less than 16 inches, below finish grade elevation, provide layer of drainage fill and filter fabric on preconstruction grade prior to placing topsoil that complies with quality requirements of Specifications on finish grading and landscaping.
   b. Carefully place drainage fill against trunk of tree or shrub approximately two inches above elevation of finish grade and extend not less than 1.5 feet from tree or shrub trunk on all sides.
   c. Provide filter fabric with edges overlapping by 6 inches, minimum.
   d. Place fill layer of topsoil to finish grade elevation.
   e. Do not compact stone, gravel or topsoil layers. Hand-grade to required finish elevations.
5. Deep Fills:
   a. Provide an open dry circular well of durable, unmortared stone, located not less than two feet s from trunk of associated tree or shrub.
   b. To facilitate proper drainage, provide eight to 10 continuous runs of four-inch drain tiles horizontally on the preconstruction ground surface under the complete spread of branches in radial pattern around the tree or shrub.
   c. Slope drain tiles away from tree or shrub.
   d. Provide drainage fill on preconstruction ground surface in depth of two inches under and six inches over drain tiles.
   e. Provide filter fabric over entire top surface of drainage fill.
   f. Provide eight to 10 drainage tiles, each four-inch diameter, vertically in radial pattern around tree or shrub, located five feet from trunk of tree or shrub. Extend vertical drainage tiles from the filter fabric layer above the horizontal drainage tiles to postconstruction finished grade
   g. Hold drainage tiles in place with drainage fill.
   h. Hand-grade to required finish grade elevation.

D. Tree and Shrub Pruning (Selective Trimming):
   1. Perform pruning and selective trimming under the supervision of arborist.
   2. Remove branches from trees and shrubs to remain only after Engineer's concurrence, only to extent necessary to clear location of permanent construction, using branch removal methods in accordance with ANSI A300 and applicable ISA standards indicated in this Section's "References" Article.
   3. Extend pruning operation to restore natural shape of entire tree or shrub where pruning is approved by Engineer and as recommended by arborist.
   4. Prune branches to balance loss to root system caused by damage or cutting of root system.
   5. Chip branches removed from trees and shrubs. Stockpile and spread chips as directed by Engineer, with arborist's recommendation.

E. Selective Trimming:
   1. In addition to pruning (as required above), perform other selective trimming under direction of arborist.
   2. Comply with ANSI A300 and applicable ISA standards indicated in this Section's "References" Article.
   3. Where shown or indicated, and as directed by Engineer with arborist's recommendation, carefully remove larger branches, when necessary, using appropriate methods.

4. Repair cut branches in accordance with this Section.
5. During selective trimming, avoid damaging healthy (to remain) elements of trees and shrubs.
6. Dispose of trimmings as indicated in this Section's "Disposal and Cleaning" Article.

F. Selective Removals:
1. Perform selective removals under direction of arborist.
2. Comply with ANSI A300 and applicable ISA standards indicated in this Section's "References" Article.
3. Fully remove trees and shrubs shown or indicated for selective removal.
4. Remove stumps to not less than one feet below preconstruction ground surface.
5. During selective removals, avoid damaging adjacent trees and shrubs to remain, and other property.
6. Remove larger branches before cutting the trunk of tree or shrub being selectively removed.
7. Dispose of trees and shrubs selectively removed as indicated in this Section's "Disposal and Cleaning" Article.

G. Repair and Replacement of Trees and Shrubs:
1. Perform tree and shrub repair under direction of arborist.
2. Cavity Repair:
   a. Remove decayed areas to depth that exposes healthy tissue.
   b. Shape cavities to provide drainage.
   c. Paint inside of cavity with antiseptic tree wound dressing material.
   d. Do not fill cavities.
   e. When cavity's cross-section exceeds 60 percent of cross-section of tree or shrub branch, selectively trim subject branch. When cavity's cross-section exceeds 60 percent of cross-section of trunk of tree or shrub, remove tree or shrub upon Engineer's authorization. Engineer will consider arborist's recommendation. Comply with this Section's requirements for selective trimming and selective removals.
3. Repair trees and shrubs damaged by construction operations, or selectively trimmed, within 24 hours of occurrence of such damage or selective trimming. Treat damaged trunks, branches, and roots according to written instructions of arborist, in accordance with ANSI A300 and applicable ISA standards indicated in this Section's "References" Article.
4. Remove and replace trees and shrubs that are (1) dead or destroyed due to construction operations, or (2) damaged beyond reasonable hope of recovery (as determined by arborist) following repairs, or (3) damaged and determined by arborist to be incapable of resuming normal growth pattern after repairs.,
5. Obtain opinion from arborist regarding whether damaged trees, shrubs, and other vegetation is repairable with reasonable chance of success. Submit arborist's certification required in this Section's "Submittals" Article.
6. For each tree or shrub to remain but is destroyed or damaged (beyond repair) by Contractor:
   a. For trees [8] inches or more in diameter (measured one foot above preconstruction ground surface), provide two replacements of the same species. Each replacement shall be four inches diameter (measured one foot above top of root ball).
   b. For trees smaller than [eight] inches diameter, and for shrubs, provide one replacement for each, of same species. Replacements shall be equal in size to original, up to maximum oof four inches (measured one foot above root ball).
   c. Provide replacement at locations at the Site as directed by Engineer.
   d. Provide replacements in accordance with the Contract Documents, including Specifications on planting and landscaping.

3.5 DISPOSAL AND CLEANING

A. Disposal – General:
1. Dispose of matter resulting from clearing and grubbing, selective removals, and selective trimming, at appropriate offsite location, unless otherwise expressly allowed by the Contract Documents or mutual agreement of Owner and Contractor.

2. Do not use cleared, grubbed, or trimmed material as fill, backfill, or in embankments.
3. Dispose of cleared, grubbed, and trimmed material, and other materials, rubbish, and debris, in accordance with Laws and Regulations.
4. Pay all costs associated with transporting and disposing of materials and debris resulting from site clearing Work.
5. Cleared lumber and trimmings from trees are Contractor's property and, at Contractor's option, may be sold or salvaged offsite.

B. Cleaning:
1. Perform progress cleaning and other cleaning Work, and disposal of resulting materials and debris, in accordance with Section 01 74 00 - Cleaning.

C. Burning:
1. Burning of trees, shrubs, brush, other vegetation, and other materials at, or adjacent to, the Site, whether in-place or cut, is prohibited unless: (a) burning is not prohibited by Laws or Regulations, and (b) required permits, if any, are obtained by Contractor from authorities having jurisdiction and are furnished to Engineer as Submittals; and (c) written approval of Owner is obtained and furnished to Engineer as a Submittal; and (d) when burning will be performed on lands at the Site not owned by Owner, obtain and submit to Engineer as Submittals written approval of owners of such properties.
2. Before burning, alert local fire department (both orally and in writing) not less than 72 hours before burning, and provide at location of burning appropriate emergency materials, tools, and equipment to contain and extinguish fires. Use such items and furnish necessary labor to prevent fire from burning other than intended trees, shrubs, brush, and vegetation.
3. If burning is allowed, exercise appropriate care and judgement. Do not perform burning in high wind conditions. Do not perform burning when areas adjacent to burning are of dryness that will foster wildfires.
4. Promptly and fully extinguish fires before they burn unintended areas or materials, and when burning is completed.
5. Dispose of ashes and burned materials off-site at appropriate location.

3.6 TOPSOIL STRIPPING AND STOCKPILING

A. Stripping:
1. Before commencing topsoil stripping:
   a. Perform clearing and grubbing and selective removals.
   b. Remove grass and other vegetation that may remain following clearing and grubbing.
   c. Provide necessary and required temporary erosion and sediment controls.
2. Strip topsoil to depths encountered, in manner that prevents intermingling of topsoil with underlying subsoil and other objectionable material. Remove heavy growths of grass and vegetation and material below topsoil.
3. Before stockpiling, separate objectionable material from topsoil.
4. Do not strip topsoil from within drip line of trees and shrubs to remain as part of the completed Project.

B. Stockpiling:
1. Construct and maintain topsoil stockpiles in accordance with Section 01 66 00 - Product Storage and Handling Requirements, at locations in accordance with Section 01 14 19 - Use of Site.

C. Reuse of Stripped Topsoil:
1. Reuse in the finish grading and landscaping Work topsoil that complies with the Contract Documents for such Work.
2. Where topsoil stripped from the Site does not comply with the Contract Documents relative to quality required for use in finish grading and landscaping Work, provide appropriate soil amendment material, properly and fully mixed into topsoil stripped from the Site, so that amended material complies with quality requirements for topsoil required for finish grading and landscaping Work.

D. Disposal of Excess Topsoil:
   1. Topsoil in excess of quantity required for finished Project becomes Contractor's property when Engineer indicates finish grading and landscaping Work is complete. Properly dispose of excess topsoil offsite. Contractor may sell excess topsoil at offsite location.

END OF SECTION

SECTION 31 23 10
EXCAVATING, BACKFILLING, AND COMPACTING FOR UTILITIES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall make excavations in such widths and depths as will give suitable room for below grade vaults, laying pipe to the lines, grades and elevations, furnish, place and compact all backfill materials specified herein or denoted on the Drawings. The materials, equipment, labor, etc., required herein are to be considered as part of the requirements and costs for installing the various pipes, structures and other items they are incidental to.

1.2 RELATED WORK

A. Section 02221-Rock Removal

B. Section 02610 - Water Pipe and Fittings.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Crushed stone material shall conform with the requirements of the applicable sections of the Kentucky Bureau of Highways Standard Specifications and shall consist of clean, hard, and durable particles or fragments, free from dirt, vegetation or objectionable materials.

B. Two classes of crushed stone material are used in this Section. The type of material in each class is as follows:
   1. Class I - No. 9 Aggregate.
   2. Class II - Dense Graded Aggregate (DGA).

PART 3 - EXECUTION

3.1 EXCAVATION OF TRENCHES

A. Unless otherwise directed by the Engineer, trenches are to be excavated in open cuts.
   1. Where pipe is to be laid in gravel bedding or concrete cradle, the trench may be excavated by machinery to, or just below, the designated subgrade, provided that the material remaining at the bottom of the trench is no more than slightly disturbed.
   2. Where pipe is to be laid directly on the trench bottom, the lower part of trenches in earth shall not be excavated to subgrade by machinery. However, just before the pipe is to be placed, the last of the material to be excavated shall be removed by means of hand tools to form a flat or shaped bottom, true to grade, so that the pipe will have a uniform and continuous bearing and support on firm and undisturbed material between joints except for limited areas where the use of pipe slings may have disturbed the bottom.

B. Trenches shall be sufficient width to provide working space on each side of the pipe and to permit proper backfilling around the pipe.
   1. The Contractor shall remove only as much of any existing pavement as is necessary for the prosecution of the Work. The pavement shall be cut with pneumatic tools, without extra compensation to the Contractor, to prevent damage to the remaining road surface. Where pavement is removed in large pieces, it shall be disposed of before proceeding with the excavation.

C. All excavated materials shall be placed a safe distance back from the edge of the trench.

D. Unless specifically directed otherwise by the Engineer, not more than 500 feet of trench shall be opened ahead of the pipe laying work of any one crew, and not more than 500 feet of open ditch shall be left behind the pipe laying work of any one crew. Watchmen or barricades, lanterns and other such signs and signals as may be necessary to warn the public of the dangers in connection with open trenches, excavations and other obstructions, shall be provided by and at the expense of the Contractor.

E. When so required, or when directed by the Engineer, only one-half of local road crossings shall be excavated before placing temporary bridges over the side excavated, for the convenience of the traveling public. All backfilled ditches shall be maintained in such manner that they will offer no hazard to the passage of traffic. The convenience of the traveling public and the property owners abutting the improvements shall be taken into consideration. All public or private drives shall be promptly backfilled or bridged at the direction of the Engineer.

F. Trench excavation shall include the removal of earth, rock, or other materials encountered in the excavating to the depth and extent shown or indicated on the Drawings.

3.2 WATER PIPE BEDDING

A. Piping for water mains shall be supported as follows:
   1. The trench bottom for water main piping shall be stable, continuous, relatively smooth and free of frozen material, clodded dirt, foreign material and rock or granular material larger than 1/2 inch in diameter. The foundation for water main piping shall be prepared so that the entire load of the backfill on top of the pipe will be carried uniformly on the barrel of the pipe. Any uneven areas in the trench bottom shall be shaved-off or filled-in with Class I granular bedding. When the trench is made through rock, the bottom shall be lowered to provide a minimum 4 inches of clearance around the pipe. Class I granular bedding shall be used to bring the trench bottom to grade.

B. After each pipe has been brought to grade, aligned, and placed in final position, earth material for water main piping in areas not subject to vehicular traffic and Class I material for water mains in paved areas, including existing roads and proposed roadways and shoulders, shall be deposited and densified under the pipe haunches and on each side of the pipe up to the spring line of the pipe to prevent lateral displacement and hold the pipe in proper position during subsequent pipe jointing, bedding, and backfilling operations.

C. In wet, yielding and mucky locations where pipe is in danger of sinking below grade or floating out of grade or line, or where backfill materials are of such a fluid nature that such movements of pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective.

D. Where an unstable (i.e., water, mud, etc.) trench bottom is encountered, stabilization of the trench bottom is required. This is to be accomplished by undercutting the trench depth and replacing to grade with a foundation of crushed stone aggregate.

E. The depth of the foundation is dependent upon the severity of the trench bottom. The size of stone aggregate used in the foundation will be determined by the condition of the unstable material. Once the trench bottom has been stabilized, the required Class I bedding material can be placed.

F. It should be noted that no pipe shall be laid on solid or blasted rock.

G. Pipe bedding as required in Paragraphs A, B, C, and D of this Section is **not** considered a separate pay item.

3.3 WATER PIPE BACKFILLING

A. Initial Backfill:

1. This backfill is defined as that material which is placed over the pipe from the spring line to a point 6 inches above the top of the pipe. For water main piping in areas not subject to vehicular traffic, initial backfill material shall be earth material free of rocks, acceptable to the Engineer or with Class I material when a condition exists mentioned in Paragraph A, 3. below. For water main piping in paved areas including existing and proposed roadways and shoulders, initial backfill shall be Class I material.
2. Material used, whether earth or Class I, in the initial backfilling is **not** a separate pay item. Payment for the material is included in the unit price per linear foot of water main.
3. In areas where large quantities of rock are excavated and the available excavated earth in the immediate vicinity is insufficient for placing the required amount of backfill over the top of the pipe as set forth in Paragraph A.1, the Contractor shall either haul in earth or order Class I material for backfilling over the pipe. Neither the hauling and placement of earth nor the ordering and placement of Class I material to fulfill the backfill requirements set forth herein is considered a separate pay item.

B. Final Backfill:
1. There are two cases where the method of final backfilling varies. The various cases and their trench situations are as follows:
   a. Case I - Areas not subject to vehicular traffic.
   b. Case II - Paved areas including existing and proposed roadways and shoulders, drives, parking areas, and walks.
2. In all cases, walking or working on the completed pipelines, except as may be necessary in backfilling, will not be permitted until the trench has been backfilled to a point 6 inches above the top of the pipe. The method of final backfilling for each of the above cases is as follows:
   a. Case I - The trench shall be backfilled from a point 6 inches above the top of the pipe to a point 8 inches below the surface of the ground with earth material free from large rock (no greater than 6 inches in the longest dimension), acceptable to the Engineer. The remainder of the trench shall be backfilled with earth material reasonably free of any rocks.
   b. Case II - The trench shall be backfilled from a point 6 inches above the top of the pipe with Class I (No. 9 crushed stone aggregate) material. The backfill shall be mechanically tamped in approximately 6-inch layers to obtain the maximum possible compaction. The remaining backfill shall be as follows:
   c. For gravel surfaces - Class II (dense graded aggregate) material mechanically tamped to maximum possible compaction. The trench may be left with a slight mound if permitted by the Engineer.
   d. For bituminous and concrete surfaces - Bituminous and concrete pavement sections as detailed on the Drawings and as specified for Bituminous Pavement Replacement and Concrete Pavement Replacement.
3. Earth, Class I and Class II material and bituminous and concrete surfaces used in final backfill is not a separate pay item. Payment shall be included in the unit price of water main.

C. A sufficient amount of Class II material shall be stockpiled to insure immediate replacement by the Contractor of any settled areas. No extra payment will be made for the filling in of settled or washed areas by the Contractor.

D. Excavated materials from trenches, in excess of quantity required for trench backfill, shall be disposed of by the Contractor. It shall be the responsibility of the Contractor to obtain location or permits for its disposal, unless specific waste areas have been designated on the Drawings or noted in these Specifications. The cost of disposal of excess excavated materials, as set forth herein, no additional compensation being allowed for hauling or overhaul.

3.4 PLACEMENT OF IDENTIFICATION TAPE

A. Detectable underground marking tape shall be placed over all utility lines. Care shall be taken to insure that the buried marking tape is not broken when installed and shall be Lineguard brand

encased aluminum foil, Type III. The identification tape is manufactured by Lineguard, Inc., P.O. Box 426, Wheaton, IL 60187.

B. The identification tape shall bear the printed identification of the utility line below it, such as "Caution - Buried Below". Tape shall be reverse printed; surface printing will not be acceptable. The tape shall be visible in all types and colors of soil and provide maximum color contrast to the soil. The tape shall meet the APWA color code, and shall be 2 inches in width. Colors are: yellow - gas, green - sewer, red - electric, blue - water, orange - telephone, brown - force main.

C. The tape shall be the last equipment installed in the trench so as to be first out. The tape shall be buried 4 to 6 inches below top of grade. After trench backfilling, the tape shall be placed in the backfill and allowed to settle into place with the backfill. The tape may be plowed in after final settlement, installed with a tool during the trench backfilling process, unrolled before final restoration or installed in any other way acceptable to the Owner or Engineer.

3.5 PLACEMENT OF LOCATION WIRE

A. Detectable underground location wire shall be placed above all non-metallic water mains and force mains. Care shall be taken to insure that the buried wire is not broken.

B. The location wire shall be no smaller than #10 AWG solid copper-coated steel wire with minimum 550 lb. tensile strength or #12 AWG stranded wire, either copper-coated steel or solid copper with minimum 300 lb. tensile strength; each with HDPE insulating jacket. Wire requirements are based on electrical resistance per 1000 foot length. Copper-coated steel wire is preferred to reduce the likelihood of vandalism theft.

C. The location wire shall be continuous from valve box to valve box and shall be terminated (unconnected) with a wire nut and enough “loose” wire to extend 24 inches outside the valve box.

END OF SECTION

SECTION 33 11 13
WATER MAIN CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Coordination and interface with existing facilities and utilities.
   2. Connections to existing water mains.
   3. Testing, flushing and disinfection.

B. Related Specification Sections include but are not necessarily limited to:
   1. Section 33 12 19 – Flush Hydrant.
   2. Section 40 05 00 - Pipe and Pipe Fittings - Basic Requirements.
   3. Section 40 05 51 - Valves - Basic Requirements.
   4. Section 40 05 61 - Gate Valves.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Water Work Association (AWWA):
      a. B300, Standard for Hypochlorites.
      b. B301, Standard for Liquid Chlorine.
      c. C651, Standard for Disinfecting Water Mains.

1.3 SUBMITTALS

A. Submit results of the leakage tests, identifying the specific length of pipe tested, the test pressure, the duration of test and the amount of leakage.

B. Submit satisfactory bacteriological test reports on disinfection requirements.

C. Submit qualifications for lab performing disinfection analysis.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe: Refer to Specification Section 40 05 00 and Specification Section 40 05 31.

B. In-Line Valves:
   1. Refer to Specification Section 40 05 61 and Specification Section 40 05 61.
   2. Provide adjustable valve boxes.
      a. Include price of valve boxes in price of valve installed complete.

C. Flush Hydrants: Refer to Specification Section 33 12 19.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install water main to the line and grade on the Drawings.
   1. Water mains to be staked at a minimum 100 feet interval with depth of cuts monitored.

C. Field verify depth of utilities that will be crossed.
   1. Adjust water main elevation as required during construction.

2. No separate payment will be made for field verification or adjustment of main depths as required.

D. Contractor will restore all existing structures or services damaged by Contractor's operations at no cost to Owner.

3.2 INTERRUPTION OF SERVICE

A. Interruption of service to water users shall not exceed 4 hours.
   1. Notify property owners of interruption a minimum of 24 hours in advance.

3.3 UNDERGROUND SERVICES

A. Notify utility representative prior to construction to obtain available information on location of existing utilities.
   1. Contractor shall be responsible for locating all utilities.

B. Existing water services are not to be connected to the new water mains.
   1. Damage to existing water service to be repaired, using pipe and union the same size and material equal to existing service or other material approved by Engineer.

3.4 DRIVEWAY REMOVAL AND REPLACEMENT

A. All Portland cement concrete and asphalt noted for removal and replacement shall be cut prior to removal.
   1. Cut by sawing, vertical cut to be 1 inch minimum.
   2. The remaining depth of section may be broken out in a manner subject to Engineers approval.
   3. Width of section removed to be either a width not greater than the outside diameter of the water main plus 4 feet-0 inches or broken out to the nearest joint.

B. Replace Portland cement concrete and asphalt equal to or better than original paving plus 2 inches.

C. Debris resulting from the above operations shall be removed and hauled as directed by the Engineer.

D. Include driveway removal and replacement in cost of the bid unit price of the water main.

3.5 GRAVEL SURFACED DRIVES AND ROADWAYS

A. Restore all damaged gravel surfaced drives and roadways to a condition equal to or better than original.
   1. Payment to be at bid unit price for this item.
   2. Replacement gravel gradation.

3.6 PROTECTION OF EXISTING UTILITIES

A. Contractor to verify the location of all underground utilities.
   1. Omission from, or the inclusion of utility locations on the plans is not to be considered as the nonexistence of or a definite location of existing underground utilities.

B. A representative of the underground utilities shall be notified 24 hours in advance of crossings.

3.7 CONNECTIONS TO EXISTING WATER MAINS

A. Make connections to existing water mains as shown on Drawings, by attaching to existing or changed fitting.
   1. Cost for making connections shall include cost of all fittings including flexible couplings, and are included as a separate “tie-in” item in the bid unit price.

B. Where the connection is made to an existing water main which can be adequately isolated from the distribution system, it shall be termed a "dry connection."

C. Contractor is responsible for controlling and disposing of water in the trench at no additional cost to the Owner.

3.8 SEWER CROSSINGS

A. Water mains crossing house sewers, storm sewers or sanitary sewers shall be laid to provide a vertical separation of at least 18 inches between the bottom of the water main and the top of the sewer, whenever possible.
   1. A water main may be laid closer than 10 feet if the crown of the sewer is at least 18 inches below the water main invert.
   2. In the event 18 inches of vertical separation cannot be provided at a sewer crossing, the sewer shall be removed for a distance of 10 feet on each side of the water main and replaced with one 20 feet length of ductile iron pipe of the same size.

B. Concrete collars shall be provided at each end of the ductile iron pipe to connect to the existing sewer pipe as shown on the Drawings.

C. Payment for crossings shall be included in the bid unit price of the water main.

3.9 TREES

A. Do not remove trees without written instructions from the Engineer unless tree removal is shown on drawings.
   1. No separate payment will be made for tree removal and the cost shall be included in the bid unit price for transmission main.

3.10 FENCES, SIGNS, MAILBOXES, ETC.

A. Restore all damaged fences, signs, mailboxes, etc., to their original conditions.
   1. No separate payment will be made for these items.

3.11 FIELD QUALITY CONTROL

A. Sealing, Flushing, and Disinfection of Potable Water Systems:
   1. Maintain interior of all pipes, fittings and other accessories free from dirt and foreign material at all times.
      a. If, in the opinion of the Engineer, the pipe contains dirt that will not be removed by flushing, the pipe interior shall be cleaned and swabbed with bactericidal solution.
      b. At close of day's work or whenever workmen are absent from jobsite, plug, cap or otherwise provide watertight seal from open ends of pipe to prevent ingress of foreign material.
      c. If water is in trench, seal shall remain in place until trench is pumped dry.
   2. After favorable performance of pressure test and prior to final acceptance, thoroughly flush the entire potable water piping system and perform disinfection as prescribed.
      a. Perform all work including preventative measures during construction in full compliance to AWWA C651.
   3. Flush each segment of the system to provide a flushing velocity of not less than 2.5 feet per second.
   4. Drain flushing water to location approved by the Owner.
   5. Perform disinfection using one of the following forms:
      a. Application of chlorine gas-water mixture by means of solution-feed chlorinating device.
         1) Liquid chlorine shall comply with AWWA B301.
      b. Application of calcium hypochlorite, or sodium hypochlorite.
         1) Chlorine compounds shall comply with AWWA B300.
   6. Disinfect pipe with chlorinated water as per AWWA C651.
      a. Method of application of chlorine shall be by continuous feed method or slug method.
      b. During disinfection procedure, ensure that initial and residual chlorine concentrations meet AWWA C651 requirements by testing by an approved method as directed by the Owner.

c. Cost of testing shall be included in the Bid Unit Price for water mains and no separate payment will be made for this item.

7. Tag the system during the disinfection procedure.
8. Following disinfection for required contact period, neutralize chlorine residual in water by treating with reducing agent.
   a. Refer to AWWA C651.
   b. Flush all treated water from pipeline at its extremities until replacement water throughout pipe, upon test is proved comparable in quality to water in existing system.
   c. Take two samples to test for bacteriological quality as directed by Engineer.
   d. Repeat disinfection procedure until two satisfactory results are obtained.
   e. Quality of water delivered by the new water main to remain satisfactory for a minimum period of two days.
9. Secure satisfactory bacteriological reports on samples from the system.
   a. Ensure all sampling and testing procedures are in full compliance to AWWA C651, and applicable requirements of the location the Site is in.
      1) No separate payment will be made for this item.
10. The Owner will provide the water required to fill the main initially and will pay for the water required to flush the main once.
    a. Filling and flushing shall be performed during periods of low usage, between the hours of midnight and 4:00 AM.
    b. Flushing water will be based on a maximum of 8 hours total.
    c. Any additional refilling or reflushing to be at the Contractor's expense at the City's commercial water rates.

END OF SECTION

SECTION 33 12 19
FLUSH HYDRANTS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, materials, and equipment required to complete the work of installing fire and flush hydrants with all appurtenances as shown on the Drawings and specified herein.

PART 2 - PRODUCTS

2.1 GENERAL

A. Each hydrant shall be installed with an auxiliary gate valve and valve box; valve box cover shall be marked “water” as required.

B. Inlet cover depth shall be 48 inches and the minimum dimension from ground to centerline of lowest opening shall be 18 inches. Hydrants shall be supported on a poured-in-place concrete thrust block and provided with a drainage pit as indicated on Standard Detail Sheet.

C. All hydrants shall be fully coated, inside and out, with fusion bonded epoxy coating in accordance with AWWA C550 Standard and color shall be as selected by the Owner.

2.2 FLUSHING HYDRANTS

A. Flushing hydrants shall be box hydrants, with 4 cubic feet of crushed stone beneath hydrant to allow drainage. All working parts shall be brass, with hydrant main valve opening being at least 2-1/8". Inlet connection shall be 4" MJ, with the outlet being two (2) 2-1/2" NST hose nozzles. The operating rod shall be non-turning, and all operating parts shall be removable from above ground with no special wrenches. This self-draining, non-freeze hydrant's barrel will be made of 3" ductile iron pipe, and shall have a lockable cast iron box, equal to the Eclipse #2 as manufactured by Kupferle Foundry or equivalent.

2.3 SPARE PARTS

A. The Owner shall be furnished with two (2) hydrant barrel wrenches, four (4) spanner wrenches and two (2) operating nut wrenches.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Flush hydrants shall be installed in accordance with the manufacturer's directions and as detailed on the Drawings.

END OF SECTION

SECTION 40 05 00
PIPE AND PIPE FITTINGS - BASIC REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Process piping systems.
2. Utility piping systems.
3. Plumbing piping systems.

B. Related Specification Sections include but are not necessarily limited to:
1. Section 40 05 51 - Valves - Basic Requirements.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
1. American Association of State Highway and Transportation Officials (AASHTO):
   a. M36, Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains (Equivalent ASTM A760).
   b. M190, Standard Specification for Bituminous Coated Corrugated Metal Culvert Pipe and Pipe Arches.
   c. M252, Standard Specification for Corrugated Polyethylene Drainage Tubing.
   d. M294, Interim Specification for Corrugated Polyethylene Pipe 12 to 24 Inch Diameter.
2. American Iron and Steel Institute (AISI).
3. American Society of Mechanical Engineers (ASME):
   a. B16.3, Malleable Iron Threaded Fittings.
   b. B16.5, Pipe Flanges and Flanged Fittings.
   c. B16.9, Factory-Made Wrought Steel Butt-Welding Fittings.
   d. B16.22, Wrought Copper and Bronze Solder - Joint Pressure Fittings.
   e. B16.26, Cast Copper Alloy Fittings for Flared Copper Tubes.
   f. B36.19, Stainless Steel Pipe.
   g. B40.100, Pressure Gauges and Gauge Attachments.
4. ASTM International (ASTM):
   a. A53, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
   b. A74, Standard Specification for Cast Iron Soil Pipe and Fittings.
   c. A106, Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service.
   d. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
   e. A182, Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.
   f. A197, Standard Specification for Cupola Malleable Iron.
   g. A234, Standard Specification for Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
   h. A269, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
   i. A312, Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.
   j. A518, Standard Specification for Corrosion-Resistant High-Silicon Iron Castings.
   k. A536, Standard Specification for Ductile Iron Castings.
   l. A587, Standard Specification for Electric-Resistance-Welded Low-Carbon Steel Pipe for the Chemical Industry.

m. A760, Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains.
n. A774, Standard Specification for As-Welded Wrought Austenitic Stainless Steel Fittings for General Corrosive Service at Low and Moderate Temperatures.
o. A778, Standard Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products.
p. B88, Standard Specification for Seamless Copper Water Tube.
q. C14, Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
r. C76, Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
s. C425, Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings.
t. C443, Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
u. C564, Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
v. C700, Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated.
w. D1785, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
x. D2466, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
y. D2467, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
z. D4101, Standard Specification for Polypropylene Plastic Injection and Extrusion Materials.
aa. F439, Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80.
bb. F441, Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80.

5. American Water Works Association (AWWA):
   a. B300, Standard for Hypochlorites.
   b. C200, Standard for Steel Water Pipe - 6 inches and Larger.
   c. C207, Standard for Steel Pipe Flanges for Waterworks Service - Sizes 4 inches through 144 inches.
   d. C208, Standard for Dimensions for Fabricated Steel Water Pipe Fittings.
   e. C606, Standard for Grooved and Shouldered Joints.
   f. C651, Standard for Disinfecting Water Mains.
   g. C800, Standard for Underground Service Line Valves and Fittings.
6. American Water Works Association/American National Standards Institute (AWWA/ANSI):
   a. C110/A21.10, Standard for Ductile-Iron and Gray-Iron Fittings.
   b. C111/A21.11, Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
   c. C115/A21.15, Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
   d. C151/A21.51, Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.
   e. C153/A21.53, Standard for Ductile-Iron Compact Fittings for Water Service.
7. Chlorine Institute, Inc. (CI):
   a. Pamphlet 6, Piping Systems for Dry Chlorine.
8. Cast Iron Soil Pipe Institute (CISPI):
   a. 301, Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
9. International Plumbing Code (IPC).
10. National Fire Protection Association (NFPA):
    a. 54, National Fuel Gas Code.
    b. 69, Standard on Explosion Prevention Systems.

11. Underwriters Laboratories, Inc. (UL).

B. Coordinate flange dimensions and drillings between piping, valves, and equipment.

1.3 DEFINITIONS

A. Hazardous Gas Systems: Digester gas, chlorine gas, sulfur dioxide gas, carbon dioxide gas, lab gases.

B. HPIC: High performance industrial coating.

C. PVDF: Polyvinylidene fluoride.

1.4 SYSTEM DESCRIPTION

A. Piping Systems Organization and Definition:
1. Piping services are grouped into designated systems according to the chemical and physical properties of the fluid conveyed, system pressure, piping size and system materials of construction.
2. See PIPING SYSTEMS SCHEDULE in PART 3.

1.5 SUBMITTALS

A. Shop Drawings:
1. Product technical data including:
a. Acknowledgement that products submitted meet requirements of standards referenced.
b. Copies of manufacturer's written directions regarding material handling, delivery, storage and installation.
c. Separate schedule sheet for each piping system scheduled in this Specification Section showing compliance of all system components.
1) Attach technical product data on gaskets, pipe, fittings, and other components.
2. Fabrication and/or Layout Drawings:
a. Exterior yard piping drawings (minimum scale 1 inch equals 10 feet) with information including:
1) Dimensions of piping lengths.
2) Invert or centerline elevations of piping crossings.
3) Acknowledgement of bury depth requirements.
4) Details of fittings, tapping locations, thrust blocks, restrained joint segments, harnessed joint segments, hydrants, and related appurtenances.
5) Acknowledge designated valve or gate tag numbers, manhole numbers, instrument tag numbers, pipe and line numbers.
6) Line slopes and vents.
b. Interior piping drawings (minimum scale 1/8 inches equals 1 foot) with information including:
1) Dimensions of piping from column lines or wall surfaces.
2) Invertdimensions of piping.
3) Centerline elevation and size of intersecting ductwork, conduit/conduit racks, or other potential interferences requiring coordination.
4) Location and type of pipe supports and anchors.
5) Locations of valves and valve actuator type.
6) Details of fittings, tapping locations, equipment connections, flexible expansion joints, connections to equipment, and related appurtenances.
7) Acknowledgement of valve, equipment and instrument tag numbers.
8) Provisions for expansion and contraction.
9) Line slopes and air release vents.
10) Rough-in data for plumbing fixtures.
c. Schedule of interconnections to existing piping and method of connection.

B. Contract Closeout Information:
1. Operation and Maintenance Data:

a. See Specification Section 01 78 23 for requirements for the mechanics, administration, and the content of Operation and Maintenance Manual submittals.

C. Informational Submittals:
1. Qualifications of lab performing disinfection analysis on water systems.
2. Test reports:
a. Copies of pressure test results on all piping systems.
b. Reports defining results of dielectric testing and corrective action taken.
c. Disinfection test report.
d. Notification of time and date of piping pressure tests.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect pipe coating during handling using methods recommended by manufacturer.
1. Use of bare cables, chains, hooks, metal bars or narrow skids in contact with coated pipe is not permitted.

B. Prevent damage to pipe during transit.
1. Repair abrasions, scars, and blemishes.
2. If repair of satisfactory quality cannot be achieved, replace damaged material immediately.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
1. Insulating unions:
a. "Dielectric" by Epco.
2. Dirt strainers (Y type):
a. Mueller (#351).
b. Sarco.
c. Armstrong.
3. Chemical strainers (Y type):
a. Chemtrol.
b. Asahi.
4. Dry disconnect couplings:
a. Kamlock.
5. Dielectric flange kit:
a. PSI.
b. Maloney.
c. Central Plastics.
6. Pipe saddles (for gage installation):
a. Dresser Style 91 (steel and ductile iron systems).
b. Dresser Style 194 (nonmetallic systems).
7. Expansion joint at FRP and poly tanks:
a. PROCO.
b. Garlock, Style 215.
8. Elastomeric bellows type expansion joints:
a. Garlock, Guardian 200/204.
b. PROCO, equivalent model.
c. Red Valve, equivalent model.
d. Or equal.
9. Dismantling Joint
a. Romac DJ400.
b. Smith Blair 972.

2.2 PIPING SYSTEMS SCHEDULE

A. Piping system materials, fittings and appurtenances are subject to requirements of specific piping systems schedule located at the end of PART 3 of this Specification Section.

2.3 COMPONENTS AND ACCESSORIES

A. Dirt Strainers:
   1. Y-type.
   2. Composition bronze.
   3. Rated for test pressure and temperature of system in which they are installed.
   4. 20 mesh Monel screen.
   5. Threaded bronze plug in the blowoff outlet.
   6. Threaded NPT end connections.

B. Reducers:
   1. Furnish appropriate size reducers and reducing fittings to mate pipe to equipment connections.
   2. Connection size requirements may change from those shown on Drawings depending on equipment furnished.

C. Protective Coating and Lining:
   1. Include pipe, fittings, and appurtenances where coatings, linings, coating, tests and other items are specified.
   2. Field coating pipe in accordance with Specification Section 09 96 00.

D. Underground Warning Tape:
   1. See Specification Section 10 14 00.

E. Dry Disconnect Couplings:
   1. Adapters:
      a. Male adapters: Size shown on Drawings.
      b. Adapters:
         1) Female NPT end connection for sludge and flush applications.
         2) Male NPT end connection for chemical applications.
      c. Construct adapters for sludge applications from cast iron or steel.
      d. Construct adapters for chemical and PVC system applications 3 inches and below from polypropylene.
         1) Above 3 inches size, provide stainless steel units.
   2. Couplers:
      a. Built-in valve and spring loaded poppet which close automatically when disconnected.
      b. Designed to remain with only one arm locked in closed position.
      c. Construct couplers for sludge applications fabricated from material utilized for adapters.
      d. Construct couplers for chemical and PVC system applications 3 inches and less from polypropylene with stainless steel arms and pins.
         1) Above 3 inches, provide stainless steel units.
      e. Gasket: Compatible with conveyed liquid.
   3. Dust caps: For all adapters.

F. Valves:

PART 3 - EXECUTION

3.1 EXTERIOR BURIED PIPING INSTALLATION

A. Unless otherwise shown on the Drawings, provide a minimum of [4] feet and maximum of [8] feet earth cover over exterior buried piping systems and appurtenances conveying water, fluids, or solutions subject to freezing.

B. Install expansion devices as necessary to allow expansion and contraction movement.

C. Laying Pipe In Trench:
   1. Excavate and backfill trench in accordance with Specification Section 31 23 33.
   2. Clean each pipe length thoroughly and inspect for compliance to specifications.
   3. Grade trench bottom and excavate for pipe bell and lay pipe on trench bottom.
   4. Install gasket or joint material according to manufacturer's directions after joints have been thoroughly cleaned and examined.
   5. Except for first two joints, before making final connections of joints, install two full sections of pipe with earth tamped alongside of pipe or final with bedding material placed.
   6. Lay pipe in only suitable weather with good trench conditions.
      a. Never lay pipe in water except where approved by Engineer.
   7. Seal open end of line with watertight plug if pipe laying stopped.
   8. Remove water in trench before removal of plug.

D. Lining Up Push-On Joint Piping:
   1. Lay piping on route lines shown on Drawings.
   2. Deflect from straight alignments or grades by vertical or horizontal curves or offsets.
   3. Observe maximum deflection values stated in manufacturer's written literature.
   4. Provide special bends when specified or where required alignment exceeds allowable deflections stipulated.
   5. Install shorter lengths of pipe in such length and number that angular deflection of any joint, as represented by specified maximum deflection, is not exceeded.

E. Anchorage and Blocking:
   1. Provide thrust blocking, anchors, joint harnesses, or other acceptable means for preventing movement of piping caused by forces in or on buried piping tees, wye branches, plugs, or bends.
   2. Place concrete blocking so that it extends from fitting into solid undisturbed earth wall.
      a. Concrete blocks shall not cover pipe joints.
   3. Provide bearing area of concrete in accordance with drawing detail.

F. Install underground hazard warning tape per Specification Section 10 14 00.

G. Install insulating components where dissimilar metals are joined together.

3.2 CONNECTIONS WITH EXISTING PIPING

A. Where connection between new work and existing work is made, use suitable and proper fittings to suit conditions encountered.

B. Perform connections with existing piping at time and under conditions which will least interfere with service to customers affected by such operation.

C. Undertake connections in fashion which will disturb system as little as possible.

D. Provide suitable equipment and facilities to dewater, drain, and dispose of liquid removed without damage to adjacent property.

E. Where connections to existing systems necessitate employment of past installation methods not currently part of trade practice, utilize necessary special piping components.

F. Where connection involves potable water systems, provide disinfection methods as prescribed in this Specification Section.

G. Once tie-in to each existing system is initiated, continue work continuously until tie-in is made and tested.

H. After cadwelding, coat all exposed metallic surfaces with hot applied tape.

I. See Specification Section 01 61 03.

3.3 FIELD QUALITY CONTROL

A. Pipe Testing - General:
1. Isolate equipment which may be damaged by the specified pressure test conditions.
2. Perform pressure test using calibrated pressure gages and calibrated volumetric measuring equipment to determine leakage rates.
   a. Select each gage so that the specified test pressure falls within the upper half of the gage's range.
   b. Notify the Engineer 24 hours prior to each test.
3. Completely assemble and test new piping systems prior to connection to existing pipe systems.
4. Acknowledge satisfactory performance of tests and inspections in writing to Engineer prior to final acceptance.
5. Bear the cost of all testing and inspecting, locating and remedying of leaks and any necessary retesting and re-examination.

B. Pressure Testing:
1. Testing medium: Unless otherwise specified in the PIPING SYSTEMS SCHEDULE, utilize the following test media.

   a. Liquid systems:

PIPE LINE SIZE (DIA)	GRAVITY OR PUMPED	SPECIFIED TEST PRESSURE	TESTING MEDIUM
All sizes	Pumped	250psiG or less	Water

2. Hydrostatic pressure testing methodology:
   a. General:
      1) All joints, including welds, are to be left exposed for examination during the test.
      2) Provide additional temporary supports for piping systems designed for vapor or gas to support the weight of the test water.
      3) Provide temporary restraints for expansion joints for additional pressure load under test.
      4) Isolate equipment in piping system with rated pressure lower than pipe test pressure.
      5) Do not coat or insulate exposed piping until successful performance of pressure test.
      6) The completed work shall comply with the provisions listed herein, or similar requirements which will insure equal or better results. Suitable test plugs, water pump or other equipment and apparatus, and all labor required to properly conduct the tests shall be furnished by the Contractor at no expense to the Owner.
      7) Water main piping shall be pressure tested to 250 percent of the normal system operating pressure or to 100 percent of the rated working pressure of the pipe, whichever is less. At no time shall the test pressure exceed 100 percent of the pipe's rated working pressure. A pipe section shall be accepted if the test pressure does not fall more than 5 psi during the minimum 2-hour test period. The pipe shall be tested for allowable leakage according to AWWA C-600 or C-605, as applicable, concurrently with the pressure test.
      8) Where practicable, pipelines shall be tested between line valves or plugs in lengths of not more than 6,000 feet. Testing shall proceed from the source of water toward the termination of the line. The line shall be tested upon the completion of the first 6,000 feet. After the completion of two (2) consecutive tests without failure, the Contractor, at his option and with the Engineer's approval, may discontinue testing until the system is complete.

9) All pipe, fittings and other materials found to be defective under test shall be removed and replaced at the Contractor's expense.
10) Before applying the specified test pressure, air shall be expelled completely from the pipe, valves and hydrants. If permanent air vents are not located at high points within the test section, the Contractor shall install corporation cocks at such points so that the air can be expelled as the line is filled with water.
11) All piping shall be tested for leakage at a pressure no less than that specified for the pressure test. The leakage shall be defined as the quantity of water that must be supplied to the tested section to maintain pressure within 5 psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. The leakage shall be less than an allowable amount determined by the following equation:

$$L = \frac{SD\,(P)^{1/2}}{133{,}200}$$

Where: L = allowable leakage (gallons/hour)
S = length of pipe tested, in feet
D = nominal diameter of pipe (inches)
P = test pressure (psig)

12) Should the sections under test fail to meet the requirements, the Contractor shall do all work of locating and repairing the leaks and retesting as the Engineer may require without additional compensation. All visible leaks are to be repaired regardless of the amount of leakage.
13) If in the judgment of the Engineer, it is impracticable to follow the foregoing procedures for any reason, modifications in the procedures shall be made as required and as acceptable to the Engineer, but in any event, the Contractor shall be responsible for the ultimate tightness of the line within the above test requirements.
14)

3.4 CLEANING, DISINFECTION AND PURGING

A. Disinfection of Potable Water Systems:
1. After favorable performance of pressure test and prior to Final Acceptance, thoroughly flush entire potable water piping system including supply, source and any appurtenant devices and perform disinfection as prescribed.
2. Perform work, including preventative measures during construction, in full compliance with AWWA C651.
3. Perform disinfection using sodium hypochlorite complying with AWWA B300.
4. Flush each segment of system to provide flushing velocity of not less than 2.5 feet per second.
5. Drain flushing water to sanitary sewer.
   a. Do not drain flushing water to receiving stream.
6. Use continuous feed method of application.
   a. Tag system during disinfection procedure to prevent use.
7. After required contact period, flush system to remove traces of heavily chlorinated water.
8. After final flushing and before placing water in service, obtain an independent laboratory approved by the Owner to collect samples and test for bacteriological quality.
   a. Repeat entire disinfection procedures until satisfactory results are obtained.
9. Secure and deliver to Owner, satisfactory bacteriological reports on samples taken from system.
   a. Ensure sampling and testing procedures are in full compliance to AWWA C651, local water purveyor and applicable requirements of State of [_____].

3.5 LOCATION OF BURIED OBSTACLES

A. Furnish exact location and description of buried utilities encountered and thrust block placement.

B. Reference items to definitive reference point locations such as found property corners, entrances to buildings, existing structure lines, fire hydrants and related fixed structures.

C. Include such information as location, elevation, coverage, supports and additional pertinent information.

D. Incorporate information on "As-Recorded" Drawings.

3.6 PIPING SYSTEM SCHEDULES

A. Piping System 10 – Buried and Exposed Potable Water Piping.
1. General:
a. Piping symbol and service:
1) PWC - Potable Water Cold
b. Test requirements:
1) Test medium: Water.
2) Pressure: 1.25 x working pressure.
3) Duration: 6 hours.
c. Gaskets and O-rings:
1) O-rings: Neoprene or rubber.
Flanged, push-on and mechanical joints (ductile iron): Rubber, AWWA/ANSI C111/A21.11.
2) Flanged joints (steel): Rubber, AWWA C207.
3) Grooved coupling joints (ductile and steel): Rubber, AWWA C606.
4) System components:
d. Pipe size to 3 inches:
1) Exposed service:
a) Material: Copper tubing, Type L.
b) Solder: Cadmium-free and lead-free solder compatible with tubing and fittings materials.
c) Reference: ASTM B88.
d) Lining: None.
e) Coating: HPIC; See Specification Section 09 96 00.
f) Fittings: Wrought copper or bronze fittings meeting ASME B16.22.
g) Joints: Soldered or brazed with unions at valves and equipment.
2) Buried service:
a) Material: Copper tubing, Type K.
b) Reference: ASTM B88.
c) Lining: None.
d) Coating: None.
e) Fittings: AWWA C800.
f) Joints: Flared.
e. Pipe size 3 inches through 24 inches:
1) Buried service:
a) Materials: PVC
b) Reference: AWWA C900
c) Lining: Cement.
d) Coating: Bituminous.
e) Fittings:
(1) Either AWWA/ANSI C110/A21.10 ductile or gray iron.
(2) Optional: AWWA/ANSI C153/A21.53 ductile iron compact fittings for sizes 3 to 16 inches.
f) Joints: Push-on with mechanical (stuffing box type) joints at fittings and valves.
2. Install drain tees with capped nipples of IPS brass 3 inches long at low points.
a. If low point occurs in concealed piping, provide approved flush access panel.
b. These drains are not shown on Drawings.

3. Slope water lines down to drain points not less than 1 inch in 60 feet.
4. Install all threaded piping with clean-cut tapered threads and with ends thoroughly reamed after cutting to remove burrs.
    a. Pipe joint cement permitted only on external threads.
5. For screwed nipples for connections to flush valves, lavatory supplies, and other equipment with threaded connections use iron, copper, or brass pipe.
6. Install ball, butterfly and plug valves where indicated or required to adequately service all parts of system and equipment.
    a. Install valves on each branch serving restroom.
    b. Install valves on inlet and outlet connections of heat exchangers and on other equipment connected to water lines.
7. Install unions between valves and connections to each piece of equipment and install sufficient number of unions throughout piping system to facilitate installation and servicing.
    a. On copper pipelines, install wrought, solder-joint, copper to copper unions for lines 2 IN and smaller and, for lines 2-1/2 inches and over install brass flange unions.
8. Construct and equip plumbing fixtures and equipment with anti-siphon devices as to entirely eliminate any danger of siphoning waste material into potable water supply system.
9. Where exposed pipes 6 inches in size and smaller pass through floors, finished walls, or finished ceilings, fit with nickel or chrome-plated plates large enough to completely close hole around pipes.
    a. Secure plates to pipe by set screw in approved manner.
10. Size supply branches to individual fixtures as scheduled or indicated on Drawings.
11. Install piping so as to be free to expand with proper loops, anchors and joints without injury to system or structure.
12. Provide branches to wall hydrants or hose bibbs in exterior locations with interior shutoff and drain valves.
13. Provide approved type vacuum breaker and backflow preventer installations indicated or as required by Code.
14. Install concealed in finished structures such as administration and office facilities and at locations shown on Drawings.
15. Slope all piping mains approximately 1:100 toward points of drainage.
16. Provide driplegs at low points:
    a. Provide ball type isolation valve.
    b. Route dripleg to nearest wall or column and terminate 4 feet above finished floor.

B. Piping System 28 – Exposed, Stainless Steel Process Piping for Laboratory Gas Service.
1. General:
    a. Piping symbol and service:

3.7 SERVICE SYSTEM SUMMARY

END OF SECTION

SECTION 40 05 31
PIPE - PLASTIC

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Plastic pipe.

B. Related Specification Sections include but are not necessarily limited to:
   1. Section 40 05 00 - Pipe and Pipe Fittings - Basic Requirements.

1.2 QUALITY ASSURANCE

A. See Specification Section 40 05 00.

B. Referenced Standards:
   1. American Water Works Association (AWWA):
      a. PVC (polyvinyl chloride) materials:
         1) C900, Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In.
   2. NSF International (NSF).

1.3 SUBMITTALS

A. See Specification Section 40 05 00.

1.4 PRESSURE PIPING (UNDERGROUND)

A. Materials: Furnish materials in full compliance with following requirements:
   1. Sizes 4- through 60-inch diameter: AWWA C900 PVC with Pressure Class of 150 PSI.
   2. Joints for PVC pipe shall be the elastomeric-gasket type with a pressure rating not less than pipe pressure rating meeting performance requirements of ASTM D3139.

B. Installation:
   1. Field threading of PVC pipe will not be permitted.
   2. Perform installation procedures, handling, thrust blocking, connections, and other appurtenant operations in full compliance to the manufacturer's printed recommendations and in full observance to plan details when more stringent.

PART 2 - EXECUTION

2.1 IDENTIFICATION

A. Identify each length of pipe clearly at intervals of 5 feet or less.
   1. Include manufacturer's name and trademark.
   2. Nominal size of pipe, appurtenant information regarding polymer cell classification and critical identifications regarding performance specifications and NSF approvals when applicable.

2.2 PRESSURE PIPING (UNDERGROUND)

A. Installation:
   1. Field threading of PVC pipe will not be permitted.
   2. Perform installation procedures, handling, thrust blocking, connections, restraining PVC pipe where specified in plans, and other appurtenant operations in full compliance to the manufacturer's printed recommendations and in full observance to plan details when more stringent.

END OF SECTION

SECTION 40 05 51
VALVES - BASIC REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Valving, actuators, and valving appurtenances.

B. Related Sections include but are not necessarily limited to:
   1. Section 01 61 03 - Equipment - Basic Requirements.
   2. Section 09 96 00 - High Performance Industrial Coatings.
   3. Section 40 05 00 - Pipe and Pipe Fittings - Basic Requirements.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Society of Mechanical Engineers (ASME):
      a. B1.20.1, Pipe Threads, General Purpose.
      b. B16.1, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
      c. B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
   2. ASTM International (ASTM):
      a. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
      b. D256, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
      c. D638, Standard Test Method for Tensile Properties of Plastics.
      d. D648, Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
      e. D695, Standard Test Method for Compressive Properties of Rigid Plastics.
      f. D2240, Standard Test Method for Rubber Property-Durometer Hardness.
   3. American Water Works Association (AWWA):
      a. C207, Standard for Steel Pipe Flanges for Waterworks Service - Sizes 4 inches through 144 IN.
      b. C500, Standard for Metal-Seated Gate Valves for Water Supply Service.
      c. C504, Standard for Rubber-Seated Butterfly Valves.
      d. C507, Standard for Ball Valves, 6 inches through 48 inches (150 mm through 1200 mm).
      e. C509, Standard for Resilient-Seated Gate Valves for Water Supply Service.
      f. C550, Standard for Protective Coatings for Valves and Hydrants.
      g. C606, Standard for Grooved and Shouldered Joints.
   4. American Water Works Association/American National Standards Institute (AWWA/ANSI):
      a. C111/A21.11, Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
   5. National Electrical Manufacturers Association (NEMA):
      a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
      b. MG 1, Motors and Generators.
   6. National Fire Protection Association (NFPA):
      a. 70, National Electrical Code (NEC).

1.3 DEFINITIONS

A. The following are definitions of abbreviations used in this Specification Section or one of the individual valve sections:
   1. CWP: Cold water working pressure.

2. SWP: Steam working pressure.
3. WOG: Water, oil, gas working pressure.
4. WWP: Water working pressure.

1.4 SUBMITTALS

A. Shop Drawings:
   1. Product technical data including:
      a. Acknowledgement that products submitted meet requirements of standards referenced.
      b. Manufacturer's installation instructions.
      c. Valve pressure and temperature rating.
      d. Valve material of construction.
      e. Special linings.
      f. Valve dimensions and weight.
      g. Valve flow coefficient.
      h. Wiring and control diagrams for electric or cylinder actuators.
      i. Short Circuit Current Rating (SCCR) nameplate marking per NFPA 70. Include any required calculations per Section 01 61 03.
   2. Test reports.

B. Contract Closeout Information:
   1. Operation and Maintenance Data:
      a. See Section 01 78 23 for requirements for the mechanics, administration, and the content of Operation and Maintenance Manual submittals.

C. Informational Submittals:
   1. Verification from valve actuator manufacturer that actuators have been installed properly, that all limit switches and position potentiometers have been properly adjusted, and that the valve actuator responds correctly to the valve position command.

D. Refer to Section 01 81 33 – Cyber Security Requirements for required cyber security related submittals.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, refer to individual valve Specification Sections for acceptable manufacturers.

2.2 MATERIALS

A. Refer to individual valve Specification Sections.

2.3 VALVE ACTUATORS

A. Valve Actuators - General:
   1. Provide actuators as shown on Drawings or specified.
   2. Counter clockwise opening as viewed from the top.
   3. Direction of opening and the word OPEN to be cast in handwheel or valve bonnet.
   4. Size actuator to produce required torque with a maximum pull of 80 pound at the maximum pressure rating of the valve provided and withstand without damage a pull of 200 pound on handwheel or chainwheel or 300 feet-pounds torque on the operating nut.
   5. Unless otherwise specified, actuators for valves to be buried, submerged or installed in vaults or manholes shall be sealed to withstand at least 20 feet of submergence.
   6. Extension stem:
      a. Install where shown or specified.
      b. Solid steel with actuator key and nut, diameter not less than stem of valve actuator shaft.
      c. Pin all stem connections.

d. Center in valve box or grating opening band with guide bushing.

B. Buried Valve Actuators:
1. Provide screw or slide type adjustable cast iron valve box, 5 inches minimum diameter, 3/16 inches minimum thickness, and identifying cast iron cover rated for traffic load.
2. Box base to enclose buried valve gear box or bonnet.
3. Provide 2 inches standard actuator nuts complying with AWWA C500, Section 3.16.
4. Provide at least two tee handle keys for actuator nuts, with 5 feet extension between key and handle.
5. Extension stem:
a. Provide for buried valves greater than 4 feet below finish grade.
b. Extend to within 6 inches of finish grade.
6. Provide concrete pad encasement of valve box as shown for all buried valves unless shown otherwise.

C. Plastic Valve Vault:
1. Provide in non-traffic areas only on valve applications 3-1/2 inches and less.
2. Nominal 7-1/2 inches diameter top section.
3. Design unit for screw type extension section having nominal 9 inches diameter bell.
4. Cast iron ring and lid.
5. Constructed of injection molded polyolefin compound with fibrous inorganic component reinforcing and UV stabilization.
6. Armor Access Boxes.

2.4 FABRICATION

A. End Connections:
1. Provide the type of end connections for valves as required in the Piping Schedules presented in Section 40 05 00 or as shown on the Drawings.
2. Comply with the following standards:
a. Threaded: ASME B1.20.1.
b. Flanged: ASME B16.1, Class 125 unless otherwise noted or AWWA C207.
c. Bell and spigot or mechanical (gland) type: AWWA/ANSI C111/A21.11.
d. Soldered: ASME B16.18.
e. Grooved: Rigid joints per Table 5 of AWWA C606.

B. Refer to individual valve Specification Sections for specifications of each type of valve used on Project.

C. Nuts, Bolts, and Washers:
1. Wetted or internal to be bronze or stainless steel.
a. Exposed to be zinc or zinc-nickel plated.
2. Buried:
a. T-Bolts for mechanical joints: Per AWWA/ANSI C111/A21.1
b. Other bolts and nuts: ASTM A307 [ASTM A193/A194 Grade B8 Class 1] [ASTM A193/A194 Grade B8M, Class 1].
c. [Wax Tape Coatings per AWWA C217]
3. Fluoropolymer coating .....Exposed: Mechanical galvanized ASTM B695, Class 40 [ASTM A193/A194 Grade B8, Class 1] [ASTM A193/A194 Grade B8M, Class 1].
4. Heads and dimensions per ASME B1.1.
5. Threaded per ASME B1.1.
6. Project ends 1/4 to 1/2 inches beyond nuts.

D. On Insulated Piping: Provide valves with extended stems to permit proper insulation application without interference from handle.

E. Epoxy Interior Coating: Provide epoxy interior coating for all ferrous surfaces in accordance with AWWA C550.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Painting Requirements: Buried valves should have fusion bonded epoxy coating in accordance with AWWA C213.

C. Setting Buried Valves:
   1. Locate valves installed in pipe trenches where buried pipe indicated on Drawings.
   2. Set valves and valve boxes plumb.
   3. Place valve boxes directly over valves with top of box being brought to surface of finished grade.
   4. Install in closed position.
   5. Place valve on firm footing in trench to prevent settling and excessive strain on connection to pipe.
   6. After installation, backfill up to top of box for a minimum distance of 4 feet on each side of box.

D. Support exposed valves and piping adjacent to valves independently to eliminate pipe loads being transferred to valve and valve loads being transferred to the piping.

E. For grooved coupling valves, install rigid type couplings [or provide separate support to prevent rotation of valve from installed position].

F. For threaded valves, provide union on one side within 2 feet of valve to allow valve removal.

G. Install valves accessible for operation, inspection, and maintenance.

3.2 ADJUSTMENT

A. Adjust valves, actuators, and appurtenant equipment to comply with Section 01 75 00.
   1. Operate valve, open and close at system pressures.

B. For all 120 VAC and 480 VAC electric actuators, employ and pay for services of valve actuator manufacturer's field service representative to:
   1. Inspect valve actuators covered by this Specification Section.
   2. Supervise adjustments and installation checks:
      a. Open and close valves electrically under local manual and demonstrate that all limit switches are properly adjusted and that switch contacts are functioning properly by verifying the inputs are received at the remote input/output (RIO) panels or local control panel as appropriate.
      b. Position modulating valves electrically under local manual control and demonstrate that the valve position feedback potentiometer is properly adjusted and that the feedback signal is received at the RIO panels or local control panel as appropriate.
      c. Simulate a valve position command signal at the RIO panel or local control panel as appropriate and demonstrate that the valve is controlled to the desired position without excessive hunting.
   3. Provide Owner with a written statement that the valve actuator manufacturer has verified that the actuators have been installed properly, that all limit switches and position potentiometers have been properly adjusted and that the valve actuator responds correctly to the valve position command.

END OF SECTION

SECTION 40 05 61
GATE VALVES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Gate valves.

B. Related Specification Sections include but are not necessarily limited to:
   1. Section 40 05 51 - Valves - Basic Requirements.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. ASTM International (ASTM):
      a. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
   2. American Water Works Association (AWWA):
      a. C500, Standard for Metal-Seated Gate Valves for Water Supply Service.
      b. C504, Standard for Rubber-Seated Butterfly Valves.
      c. C550, Standard for Protective Epoxy Interior Coatings for Valves and Hydrants.
   3. Manufacturers Standardization Society of the Valve and Fittings Industry Inc. (MSS):
      a. SP-9, Spot Facing for Bronze, Iron and Steel Flanges.
      b. SP-70, Cast Iron Gate Valves, Flanged and Threaded Ends.
      c. SP-80, Bronze Gate, Globe, Angle and Check Valves.

1.3 DEFINITIONS

A. OS&Y: Outside Screw and Yoke.

B. NRS: Non-rising Stem.

C. RS: Rising Stem.

1.4 SUBMITTALS

A. Shop Drawings:
   1. See Specification Section 40 05 51.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, the manufacturers listed in the applicable Articles below are acceptable.

2.2 VALVES: WATER (HOT, COLD, HEATING, COOLING, SERVICE, PROCESS, POTABLE, NON-POTABLE, AND WASTEWATER)

A. Double Disc Gate Valve, 3 to 12 inches (Water Application):
   1. Comply with AWWA C500.
   2. Materials:
      a. Seating surfaces, stems, stem nut: Bronze.
      b. Body, disc: Cast iron.
   3. Design requirements:
      a. 200 psi working pressure.
      b. Buried: NRS, O-ring stem seal, 2 inches operation nut.
   4. Manufacturers:

a. American Flow Control.
b. Clow.
c. M&H.
d. Mueller.

B. Resilient Wedge Gate Valves, 2 to 48 inches (Water, Wastewater Application):
1. Comply with AWWA C515.
2. Materials:
a. Stem and stem nut: Bronze.
1) Wetted bronze parts in low zinc bronze.
2) Aluminum bronze components: Heat treated per AWWA C504.
b. Body, gate: Ductile iron
c. Resilient wedge: Fully encapsulated rubber wedge.
3. Design requirements:
a. Minimum 200 PSIG working pressure.
b. Buried: NRS, O-ring stem seal, 2 inches square operating nut.
c. Counter clockwise open rotation.
d. Fusion bonded epoxy coating interior and exterior except stainless steel and bearing surfaces.
1) Comply with AWWA C550.
2) Wetted bronze parts in low zinc bronze.
3) Aluminum bronze components: Heat treated per AWWA C504.
4. Manufacturers:
a. Clow.
b. Mueller.
c. American Flow Control.
d. M & H.

2.3 ACCESSORIES

A. Refer to Drawings and valve schedule for type of actuators.
1. Furnish actuator integral with valve.

B. Refer to Specification Section 40 05 51 for actuator requirements.

2.4 FABRICATION

A. General:
1. Provide valves with clear waterways the full diameter of the valve.

B. Spot valves in accordance with MSS SP-9.

PART 3 - EXECUTION

3.1 INSTALLATION

A. See Specification Section 40 05 51.

B. Where larger buried valves utilize smaller bypass valves, provide a second valve box installed over the bypass valve operating nut.

C. Do not install gate valves inverted or with the stems sloped more than 45 degrees from the upright unless the valve was ordered and manufactured specifically for this orientation.

END OF SECTION

NOTICE

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

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

The replacement of the KY 81 bridge (075B00025N) 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. A temporary construction easement will be required.

Location	Description of Project Impacts
KY-81 over Slough from MP 6.83 to MP 6.93	The proposed project will impact approximately 101 ft of an unnamed, intermittent slough approximately 8 ft wide at the KY-81 intersection, and approximately 157 ft of an unnamed, intermittent tributary approximately 3 ft wide for total impacts of 0.03 ac.

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 General Certification 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

REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification--Nationwide Permits (NWP)

NWP 3 – Maintenance
NWP 5 – Scientific Measurement Devices
NWP 7 – Outfall Structures and Associated Intake Structures
NWP 23 – Approved Categorical Exclusions
NWP 25 – Structural Discharges
NWP 30 – Moist Soil Management for Wildlife
NWP 31 – Maintenance of Existing Flood Control Facilities
NWP 45 – Repair of Uplands Damaged by Discrete Events
NWP 46 – Discharges in Ditches
NWP 59 – Water Reclamation and Reuse Facilities

This General Certification is issued **December 18, 2020**, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this General Certification and all General Certifications of Nationwide Permits (NWP), the term 'surface water' is defined pursuant to 401 KAR Chapter 10, Section 1(72): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the Commonwealth.

As required by 40 CFR Part 121 – State Certification of Activities Requiring a Federal License or Permit, all conditions include a statement explaining why the condition is necessary to assure that any discharge authorized under the general permit will comply with water quality requirements and a citation to federal, state, or tribal law that authorizes the condition. The statements and citations are included with each condition. The

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statements are written entirely at the end of the certification under the section *Statements of Necessity*.

The Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 306 and 307 of the CWA, will not be violated for the activities covered by the above listed Nationwide Permits, provided that the conditions in this General Certification are met. Activities that do not meet the conditions of this General Certification require an Individual Section 401 Water Quality Certification.

1. Activities occurring within surface waters assessed by the Kentucky Division of Water as designated Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(1), Section 1(2), & Section 1(3); and 401 KAR 10:031, Section 4(2) & Section 8]

2. Activities impacting surface waters assessed by the Kentucky Division of Water as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat* are not authorized under this General Certification and require an Individual Certification. [Statement B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

   *These include waters impaired by the parameter 'habitat assessment', 'combined biota/habitat bioassessment' or any parameter from the parameter group 'habitat alterations, and/or waters where the parameter identified as a cause of impairment has a source from the source group 'habitat impacts'.

3. Activities impacting surface waters assessed by the Kentucky Division of Water as full support for warm water or cold water aquatic habitat are not authorized under this General Certification and require an Individual Certification. [Statements A and B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

4. The activity will not occur within surface waters identified as perpetually-protected mitigation sites (e.g., deed restriction or conservation easement). [Statement C and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3); and 40 C.F.R. 230.97]

5. Activities with cumulative temporary and permanent impacts greater than 1/2 acre of wetland or 300 linear feet of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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6. Stream relocation, realignment, straightening, and/or widening are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

7. The use of creek rock for bank stabilization; grouted rip-rap; unformed, poured grout; unformed, poured concrete; poured asphalt; or asphalt pieces is not authorized under this General Certification and requires an Individual Certification. Poured concrete or grout will be authorized under this General Certification when contained by tightly sealed forms or cells. Equipment shall not discharge waste washwater into surface waters at any time without adequate wastewater treatments. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

8. New stormwater detention/ retention basins constructed in surface waters or modifications to stormwater detention/ retention basins resulting in the reduction in reach or that cause impairment of flow of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

9. Erosion and sedimentation pollution control plans and Best Management Practices (BMPs) 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. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

10. Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters, 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, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

11. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering surface waters. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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12. Removal of riparian vegetation shall be limited to that necessary for equipment access. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

13. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

14. Heavy equipment (e.g., bulldozers, backhoes, and draglines), if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

15. Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

16. If domestic water supply intakes are located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done prior to construction. [Statement E and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

17. Should evidence of stream pollution or jurisdictional 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) 928-2380. [Statement A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

18. The Kentucky Division of Water requires submission of a formal application for any federal applicant that is not required to submit a Preconstruction Notification that would typically be required of any non-federal applicant. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

19. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project that has been determined to likely have a significant adverse effect upon water quality or degrade surface waters so that

existing uses of the water body or downstream waters are precluded. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

20. If the final issued General Permit for Nationwide Permits 3, 5, 7, 23, 25, 29, 30, 31, 39, 42, 45, 46, 51, or E changes significantly, the Division of Water may opt to deny certification for this permit. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

Statements of Necessity:

A. This condition is necessary to protect waters categorized under the anti-degradation policy to protect the designated and existing uses and to maintain the associated water quality criteria necessary to protect these water resources.

B. This condition is necessary to protect existing uses and the level of water quality necessary to protect those existing uses shall be assured in impaired water.

C. This condition is necessary for long-term protection of compensatory mitigation sites.

D. This condition is necessary to provide for the prevention, abatement, and control of all water pollution and to conserve water resources for legitimate uses, safeguard from pollution the uncontaminated waters, prevent the creation of any new pollution, and abate any existing pollution.

E. This condition is necessary to protect domestic water supply use.

F. This condition is necessary to evaluate, develop, and improve best-management practices in conservation plans, compliance plans, and forest stewardship management plans; establish statewide and regional agriculture water quality plans; and otherwise promote soil and water conservation activities that protect surface waters from the adverse impacts of agriculture operations within the Commonwealth.

Violation of Kentucky state water quality standards may result in civil penalties and remediation actions.

For assistance contact the Kentucky Division of Water, Water Quality Certification Section by email (401WQC@ky.gov) or by phone (502)-564-3410.

NOTICE

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

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

The replacement of KY 145 over Beaver Dam Creek (Bridge 051B00119N) 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 completely closed to through traffic during construction and existing traffic will be detoured on nearby roads. There will not be an on-site diversion. A temporary construction easement will be required.

Location	Description of Project Impacts
KY-145 over Beaver Dam Creek from MP 5.49 to MP 5.65	The proposed project will impact approximately 156 ft of an unnamed, perennial tributary to Beaver Dam Creek approximately 25 ft wide at the KY-145 intersection, and 96 ft of an unnamed, ephemeral tributary approximately 1.5 ft wide, for total project impacts of 0.09 ac.

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 General Certification 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

REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification--Nationwide Permits (NWP)

NWP 3 – Maintenance
NWP 5 – Scientific Measurement Devices
NWP 7 – Outfall Structures and Associated Intake Structures
NWP 23 – Approved Categorical Exclusions
NWP 25 – Structural Discharges
NWP 30 – Moist Soil Management for Wildlife
NWP 31 – Maintenance of Existing Flood Control Facilities
NWP 45 – Repair of Uplands Damaged by Discrete Events
NWP 46 – Discharges in Ditches
NWP 59 – Water Reclamation and Reuse Facilities

This General Certification is issued **December 18, 2020**, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this General Certification and all General Certifications of Nationwide Permits (NWP), the term 'surface water' is defined pursuant to 401 KAR Chapter 10, Section 1(72): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the Commonwealth.

As required by 40 CFR Part 121 – State Certification of Activities Requiring a Federal License or Permit, all conditions include a statement explaining why the condition is necessary to assure that any discharge authorized under the general permit will comply with water quality requirements and a citation to federal, state, or tribal law that authorizes the condition. The statements and citations are included with each condition. The

General Certification--Nationwide Permits 3, 5, 7, 23, 25, 30, 31, 45, 46, and 59.
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statements are written entirely at the end of the certification under the section *Statements of Necessity*.

The Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 306 and 307 of the CWA, will not be violated for the activities covered by the above listed Nationwide Permits, provided that the conditions in this General Certification are met. Activities that do not meet the conditions of this General Certification require an Individual Section 401 Water Quality Certification.

1. Activities occurring within surface waters assessed by the Kentucky Division of Water as designated Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(1), Section 1(2), & Section 1(3); and 401 KAR 10:031, Section 4(2) & Section 8]

2. Activities impacting surface waters assessed by the Kentucky Division of Water as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat* are not authorized under this General Certification and require an Individual Certification. [Statement B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

   *These include waters impaired by the parameter 'habitat assessment', 'combined biota/habitat bioassessment' or any parameter from the parameter group 'habitat alterations, and/or waters where the parameter identified as a cause of impairment has a source from the source group 'habitat impacts'.

3. Activities impacting surface waters assessed by the Kentucky Division of Water as full support for warm water or cold water aquatic habitat are not authorized under this General Certification and require an Individual Certification. [Statements A and B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

4. The activity will not occur within surface waters identified as perpetually-protected mitigation sites (e.g., deed restriction or conservation easement). [Statement C and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3); and 40 C.F.R. 230.97]

5. Activities with cumulative temporary and permanent impacts greater than 1/2 acre of wetland or 300 linear feet of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

General Certification--Nationwide Permits 3, 5, 7, 23, 25, 30, 31, 45, 46, and 59.
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6. Stream relocation, realignment, straightening, and/or widening are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

7. The use of creek rock for bank stabilization; grouted rip-rap; unformed, poured grout; unformed, poured concrete; poured asphalt; or asphalt pieces is not authorized under this General Certification and requires an Individual Certification. Poured concrete or grout will be authorized under this General Certification when contained by tightly sealed forms or cells. Equipment shall not discharge waste washwater into surface waters at any time without adequate wastewater treatments. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

8. New stormwater detention/ retention basins constructed in surface waters or modifications to stormwater detention/ retention basins resulting in the reduction in reach or that cause impairment of flow of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

9. Erosion and sedimentation pollution control plans and Best Management Practices (BMPs) 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. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

10. Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters, 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, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

11. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering surface waters. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

General Certification--Nationwide Permits 3, 5, 7, 23, 25, 30, 31, 45, 46, and 59.
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12. Removal of riparian vegetation shall be limited to that necessary for equipment access. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

13. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

14. Heavy equipment (e.g., bulldozers, backhoes, and draglines), if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

15. Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

16. If domestic water supply intakes are located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done prior to construction. [Statement E and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

17. Should evidence of stream pollution or jurisdictional 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) 928-2380. [Statement A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

18. The Kentucky Division of Water requires submission of a formal application for any federal applicant that is not required to submit a Preconstruction Notification that would typically be required of any non-federal applicant. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

19. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project that has been determined to likely have a significant adverse effect upon water quality or degrade surface waters so that

General Certification--Nationwide Permits 3, 5, 7, 23, 25, 30, 31, 45, 46, and 59.
Page 5

existing uses of the water body or downstream waters are precluded. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

20. If the final issued General Permit for Nationwide Permits 3, 5, 7, 23, 25, 29, 30, 31, 39, 42, 45, 46, 51, or E changes significantly, the Division of Water may opt to deny certification for this permit. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

Statements of Necessity:

A. This condition is necessary to protect waters categorized under the anti-degradation policy to protect the designated and existing uses and to maintain the associated water quality criteria necessary to protect these water resources.

B. This condition is necessary to protect existing uses and the level of water quality necessary to protect those existing uses shall be assured in impaired water.

C. This condition is necessary for long-term protection of compensatory mitigation sites.

D. This condition is necessary to provide for the prevention, abatement, and control of all water pollution and to conserve water resources for legitimate uses, safeguard from pollution the uncontaminated waters, prevent the creation of any new pollution, and abate any existing pollution.

E. This condition is necessary to protect domestic water supply use.

F. This condition is necessary to evaluate, develop, and improve best-management practices in conservation plans, compliance plans, and forest stewardship management plans; establish statewide and regional agriculture water quality plans; and otherwise promote soil and water conservation activities that protect surface waters from the adverse impacts of agriculture operations within the Commonwealth.

Violation of Kentucky state water quality standards may result in civil penalties and remediation actions.

For assistance contact the Kentucky Division of Water, Water Quality Certification Section by email (401WQC@ky.gov) or by phone (502)-564-3410.

NOTICE

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

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

The replacement of KY 1592 over Towery Branch (Bridge 017B00076N) 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 completely closed to through traffic during construction and existing traffic will be detoured on nearby roads. There will not be an on-site diversion. Right-of-way and temporary construction easements will be required.

Location	Description of Project Impacts
KY-1592 over Towery Branch from MP 4.19 to 4.27	The project will permanently impact approximately 80ft of Towery Branch, an intermittent stream approximately 15ft wide at the KY-1592 intersection, as well as approximately 166 ft of two (2) unnamed tributaries, both ephemeral and approximately 2ft wide, for total impacts of 0.04 ac.

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 General Certification 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

REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification--Nationwide Permits (NWP)

NWP 3 – Maintenance
NWP 5 – Scientific Measurement Devices
NWP 7 – Outfall Structures and Associated Intake Structures
NWP 23 – Approved Categorical Exclusions
NWP 25 – Structural Discharges
NWP 30 – Moist Soil Management for Wildlife
NWP 31 – Maintenance of Existing Flood Control Facilities
NWP 45 – Repair of Uplands Damaged by Discrete Events
NWP 46 – Discharges in Ditches
NWP 59 – Water Reclamation and Reuse Facilities

This General Certification is issued **December 18, 2020**, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this General Certification and all General Certifications of Nationwide Permits (NWP), the term 'surface water' is defined pursuant to 401 KAR Chapter 10, Section 1(72): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the Commonwealth.

As required by 40 CFR Part 121 – State Certification of Activities Requiring a Federal License or Permit, all conditions include a statement explaining why the condition is necessary to assure that any discharge authorized under the general permit will comply with water quality requirements and a citation to federal, state, or tribal law that authorizes the condition. The statements and citations are included with each condition. The

General Certification--Nationwide Permits 3, 5, 7, 23, 25, 30, 31, 45, 46, and 59.
Page 2

statements are written entirely at the end of the certification under the section *Statements of Necessity*.

The Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 306 and 307 of the CWA, will not be violated for the activities covered by the above listed Nationwide Permits, provided that the conditions in this General Certification are met. Activities that do not meet the conditions of this General Certification require an Individual Section 401 Water Quality Certification.

1. Activities occurring within surface waters assessed by the Kentucky Division of Water as designated Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(1), Section 1(2), & Section 1(3); and 401 KAR 10:031, Section 4(2) & Section 8]

2. Activities impacting surface waters assessed by the Kentucky Division of Water as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat* are not authorized under this General Certification and require an Individual Certification. [Statement B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

   *These include waters impaired by the parameter 'habitat assessment', 'combined biota/habitat bioassessment' or any parameter from the parameter group 'habitat alterations, and/or waters where the parameter identified as a cause of impairment has a source from the source group 'habitat impacts'.

3. Activities impacting surface waters assessed by the Kentucky Division of Water as full support for warm water or cold water aquatic habitat are not authorized under this General Certification and require an Individual Certification. [Statements A and B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

4. The activity will not occur within surface waters identified as perpetually-protected mitigation sites (e.g., deed restriction or conservation easement). [Statement C and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3); and 40 C.F.R. 230.97]

5. Activities with cumulative temporary and permanent impacts greater than 1/2 acre of wetland or 300 linear feet of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

General Certification--Nationwide Permits 3, 5, 7, 23, 25, 30, 31, 45, 46, and 59.
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6. Stream relocation, realignment, straightening, and/or widening are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

7. The use of creek rock for bank stabilization; grouted rip-rap; unformed, poured grout; unformed, poured concrete; poured asphalt; or asphalt pieces is not authorized under this General Certification and requires an Individual Certification. Poured concrete or grout will be authorized under this General Certification when contained by tightly sealed forms or cells. Equipment shall not discharge waste washwater into surface waters at any time without adequate wastewater treatments. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

8. New stormwater detention/ retention basins constructed in surface waters or modifications to stormwater detention/ retention basins resulting in the reduction in reach or that cause impairment of flow of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

9. Erosion and sedimentation pollution control plans and Best Management Practices (BMPs) 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. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

10. Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters, 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, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

11. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering surface waters. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

General Certification--Nationwide Permits 3, 5, 7, 23, 25, 30, 31, 45, 46, and 59.
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12. Removal of riparian vegetation shall be limited to that necessary for equipment access. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

13. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

14. Heavy equipment (e.g., bulldozers, backhoes, and draglines), if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

15. Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

16. If domestic water supply intakes are located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done prior to construction. [Statement E and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

17. Should evidence of stream pollution or jurisdictional 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) 928-2380. [Statement A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

18. The Kentucky Division of Water requires submission of a formal application for any federal applicant that is not required to submit a Preconstruction Notification that would typically be required of any non-federal applicant. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

19. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project that has been determined to likely have a significant adverse effect upon water quality or degrade surface waters so that

existing uses of the water body or downstream waters are precluded. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

20. If the final issued General Permit for Nationwide Permits 3, 5, 7, 23, 25, 29, 30, 31, 39, 42, 45, 46, 51, or E changes significantly, the Division of Water may opt to deny certification for this permit. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

Statements of Necessity:

A. This condition is necessary to protect waters categorized under the anti-degradation policy to protect the designated and existing uses and to maintain the associated water quality criteria necessary to protect these water resources.

B. This condition is necessary to protect existing uses and the level of water quality necessary to protect those existing uses shall be assured in impaired water.

C. This condition is necessary for long-term protection of compensatory mitigation sites.

D. This condition is necessary to provide for the prevention, abatement, and control of all water pollution and to conserve water resources for legitimate uses, safeguard from pollution the uncontaminated waters, prevent the creation of any new pollution, and abate any existing pollution.

E. This condition is necessary to protect domestic water supply use.

F. This condition is necessary to evaluate, develop, and improve best-management practices in conservation plans, compliance plans, and forest stewardship management plans; establish statewide and regional agriculture water quality plans; and otherwise promote soil and water conservation activities that protect surface waters from the adverse impacts of agriculture operations within the Commonwealth.

Violation of Kentucky state water quality standards may result in civil penalties and remediation actions.

For assistance contact the Kentucky Division of Water, Water Quality Certification Section by email (401WQC@ky.gov) or by phone (502)-564-3410.

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 9, 2023

SUBJECT: **Mclean County**
D2 075B00025N
Item No. 2-10110
KY 81
Bridge Over Slough
Geotechnical Engineering Structure Foundation Report

1.0 Location and Description

The project is located on KY 81 over an existing slough, approximately 0.09 miles northwest of the intersection of KY 81 and KY 1589 and 4.17 miles southeast of Rumsey, Mclean 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 54'-0" (out to out), a bridge width of 32'-0" (out to out slab) on a 30˚ 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 Livermore, KY Geologic and Topographic Quadrangle (GQ #1467). Geologic mapping of the bridge location shows the geologic strata composed of water deposited alluvium and lacustrine deposits which consists of clays, silts, gravels, and sands. The Natural Resources Conservation Service (NRCS) Soil map classifies the surface soils at the bridge location as Karnak silty clay.

3.0 Field Investigation

Subsurface drilling was conducted by Bacon Farmer Workman Engineering & Testing, Inc. (BFW) from January 26th and 27th, 2023. One boring, B-1001 (Station 105+37.28, 21.24 RT) was advanced near the western Integral End Bent (End Bent 2). The boring was advanced to a depth

of 101.5 feet (Elevation 283.63). No bedrock was encountered during drilling activities. 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 and lacustrine soils were encountered during drilling activities and consisted of upper silts, silty sands with gravel and silty gravels with sand. Lower soils were comprised of lean to silty clays, silty clays with sands, sandy silts and well to poorly graded 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 SW, SP, SM, GM, SP-SM, SP-SM, ML, CL, and CL-ML using the Unified Soil Classification System and A-1-a, A-1-b, A-2-4, A-3, A-4, A-6, and A-7-6 using the AASHTO Classification Method.

5.0 Subsurface Conditions

Below surface organics, silt, silt with sand, silty sand with gravel and silty gravels with sands were encountered to depths of approximately 15 feet below ground surface (bgs). Soils were soft to firm in consistency. Below this depth the soils transitioned to lean to silty clays and extended to a depth of approximately 55 feet bgs. The clay soils were very soft to firm in consistency. The soils transitioned to interbedded layers of sandy silt, silty clays with sand and extended to a depth of approximately 75 feet bgs. The silts and clays were very soft to firm in consistency. From this depth the soils transitioned to sandy soils ranging from silty sands, silty sands with gravel to well and poorly graded sands. The sands were firm to dense in consistency and extended to boring termination depth of 101.5 feet bgs.

Groundwater levels ranged from approximately 15 feet (Elev. 370.13) 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 – Based on the structural loads and soil encountered the use of HP 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 783 kips for 14x89 piles.

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. 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.

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. The attached pile capacity tables have already taken the effect of scour into account.

Table 1

Scour Analysis Summary			
Substructure	**Local (ft)**	**Contraction (ft)**	**Total (ft)**
Pile Bent 1	7.92	2.9	10.82
Pile Bent 2	7.92	2.9	10.82

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 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 of 48.5 kip-ft to 66 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.

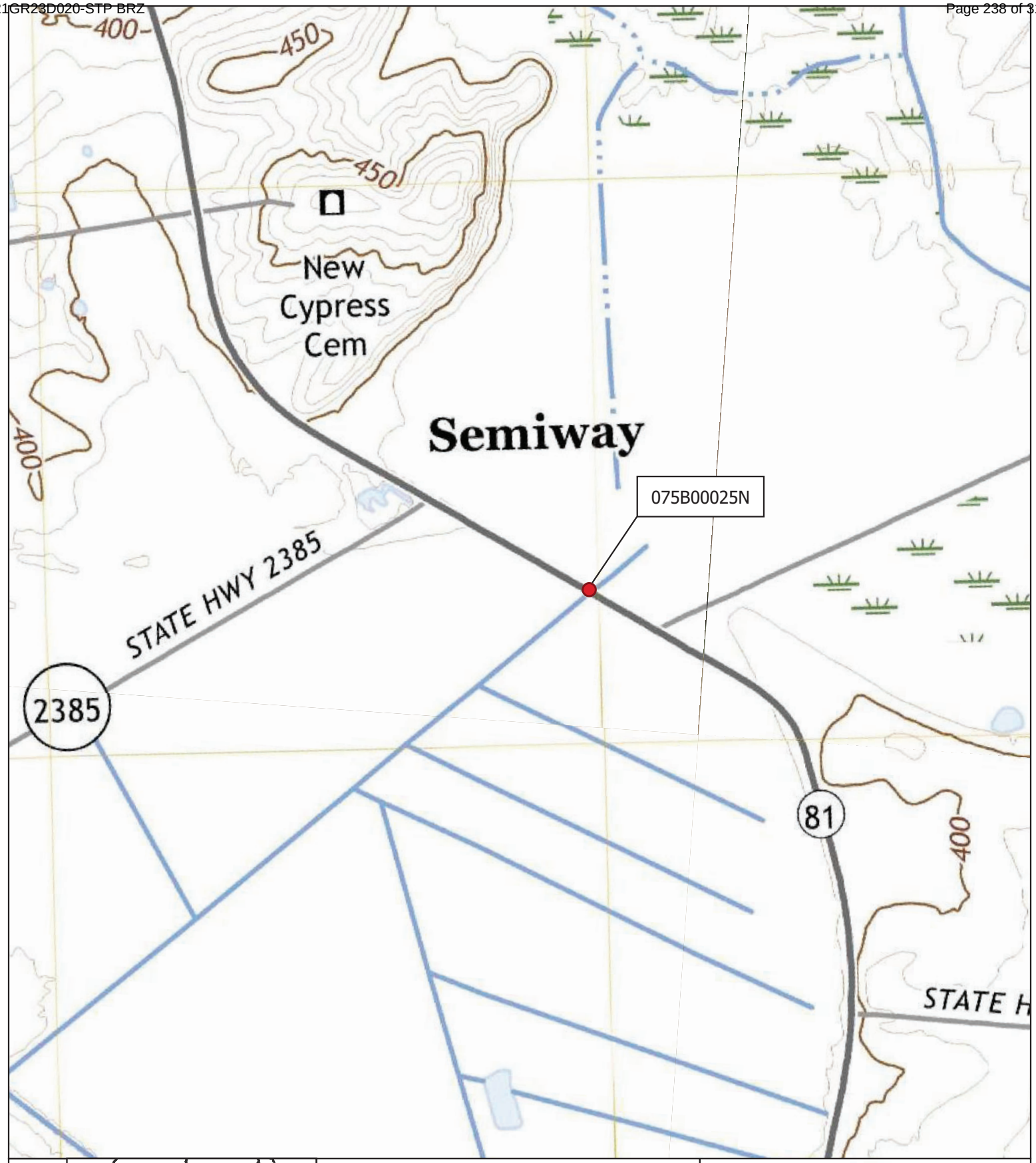
7.6 Field verification of pile capacity shall be performed using the FHWA Modified Gates Formula instead of the formulas provided in the Standard Specifications for Road and Bridge Construction.

7.7 The use of pile points should not be allowed for H-piles used a friction piles due to loss of side friction as piles are being driven.

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**



0 700 1,400 ft

1 inch : 750 feet

KY-81 Over Slough

37.4721072, -87.2377317
McLean County, KY

Project Number:	Drafted/Checked:	Date:
22349 - 10110	HK/CF	2023-01-30

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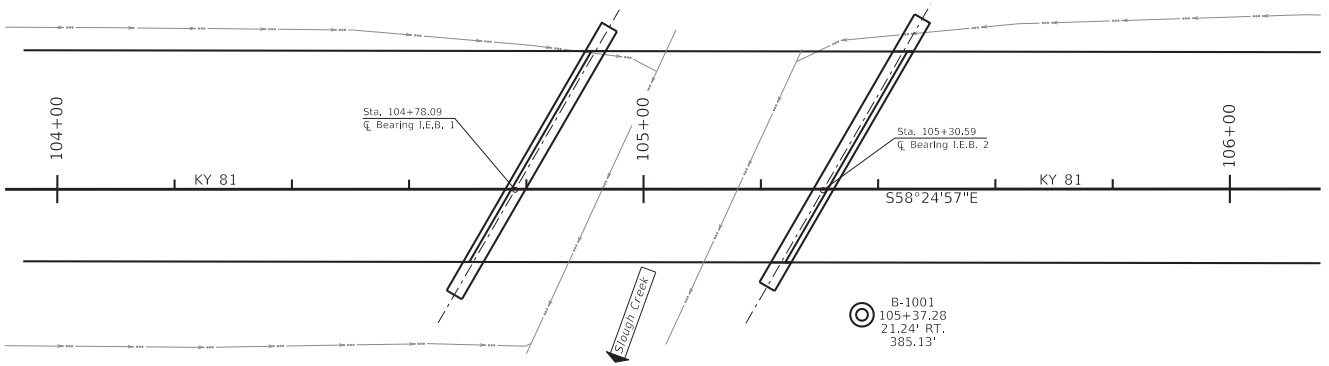
ENGINEERING & TESTING, INC.
500 SOUTH 17TH STREET
PADUCAH, KY 42003

SUBSURFACE DATA



END BENT ONE
APPROXIMATE ROADWAY GRADE ELEV. = 386.81

END BENT TWO
APPROXIMATE ROADWAY GRADE ELEV. = 386.82

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

Hole No.				B-1001	
Station				105+37.28	
Offset				21.24' RT.	
Elev. (Sea level datum)				385.13'	
	D_{50} (mm)	w%	LI		
380	0.511	11.15	NP	N=5	A-1-b, SM, S+C=25(20+5)
	0.012	34.91	NP	N=6	A-4, ML, S+C=73(45+28)
370	1.248	23.72	NP	N=5	A-2-4, GM, S+C=34(22+12)
	0.012	33.21	NP	N=3	A-4, ML, S+C=98(96+2)
360	0.010	30.66	1.07	N=3 N=1	A-4, CL, S+C=99(89+10)
	0.006	33.95	1.21	N=2	A-7-6, CL, S+C=99(70+29)
350	0.007	37.48	0.72	N=7	A-6, CL, S+C=98(76+22)
340	0.008	27.96	0.33	N=5 N=5	A-7-6, CL, S+C=100(78+22)
	0.010	35.64	0.52	N=3	A-6, CL, S+C=87(67+20)
330	0.019	35.07	0.72	N=7	A-6, CL, S+C=72(57+15)
	0.074	24.90	0.59	N=5	A-4, ML, S+C=50(45+5)
320	0.016	22.52	NP	N=2	A-4, CL-ML, S+C=83(78+5)
	0.039	21.37	1.22	N=5	A-4, CL, S+C=59(53+6)
310	0.035	40.51	2.15	N=2	A-4, ML, S+C=62(56+6)
	0.144	23.05	NP	N=8	A-2-4, SM, S+C=20(18+2)
300	0.165	21.99	NP	N=27	A-3, SP-SM, S+C=9(7+2)
	0.401	27.10	NP	N=27	A-2-4, SM, S+C=28(27+1)
290	3.267	21.39	NP	N=50/0.3	A-1-a SW, S+C=5(4+1)
	3.467	17.33	NP	N=69	A-1-a, SP, S+C=1(0+1)
280	N.R. (283.63)				

Datum

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SUBSURFACE DATA FOR KY 81 OVER SLOUGH

HORIZONTAL SCALE
SCALE: N.T.S.

ITEM NO. 2-10110
COUNTY OF MCLEAN
SHEET NO.

OpenRoads Designer v10.16.2.267
USER: bvollmer
FILE NAME: C:\BMS\WSP-US-PW-02\D05619341\75B00025N_SUBSURFACE_DATA.DGN

LRFD Pile Capacities (For Friction Piles)

Integral End Bents 1 & 2

County: Mclean
Location: KY 81 Over Slough
Item #: 2-10110

Date: 2/8/2023
Pile Size: HP 14X 89 Steel Piles (Friction)

Base of Pile Cap Assumed to be at approximate elevation*: **381.0** ft
Finished Grade Elevation: **386.8** ft
Original Groundline Elevation: **385.1** 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	381	cohesionless	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0	0
25	356	cohesive	31	15	1	0	32	15	11	6	28	13	21	10	23.0	11	34.2	17	8	4
30	351	cohesive	40	20	1	0	41	20	14	7	36	17	26	13	27.6	13	43.2	22	10	5
35	346	cohesive	58	29	2	0	60	30	21	11	53	26	39	19	38.0	19	62.8	31	15	8
40	341	cohesive	83	41	2	0	85	42	30	15	75	37	56	27	50.6	25	87.9	44	21	11
45	336	cohesive	110	54	2	0	112	55	39	20	98	48	73	36	63.7	31	114.2	57	27	14
50	331	cohesive	137	68	2	0	139	69	49	25	121	60	90	45	77.3	38	141.3	71	34	17
55	238	cohesive	163	81	2	0	165	82	58	29	144	72	107	53	90.2	45	167.2	84	41	21
60	321	cohesive	187	93	2	0	188	94	66	33	165	82	122	61	101.8	50	190.7	95	47	24
65	316	cohesive	209	104	2	0	211	105	74	37	184	92	137	68	113.1	56	213.3	107	52	26
70	311	cohesive	232	115	2	0	233	116	82	41	204	102	152	75	124.4	62	235.8	118	58	29
75	306	cohesive	254	127	2	0	256	127	90	45	224	111	166	83	135.6	67	258.4	129	64	32
80	301	cohesionless	304	152	9	4	313	156	141	71	352	176	204	101	190.7	95	315.7	158	106	53
85	296	cohesionless	373	186	27	13	400	200	180	90	450	225	260	130	277.6	138	402.6	201	130	65
90	291	cohesionless	458	229	27	13	486	242	219	110	546	273	316	157	363.3	181	488.3	244	160	80
95	286	cohesionless	549	274	27	13	576	288	259	130	649	324	375	187	454.0	227	579.0	290	192	96
100	281	cohesionless	645	322	27	13	672	336	303	152	756	378	437	218	549.8	274	674.8	337	226	113

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

*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

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

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

County Mclean Date 2/9/2023

Road Number KY 81

Survey Crew / Consultant BFW

Contact Person Chris Farmer

Item # 02-10110

Mars#

Project #

Notes:

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

HOLE NUMBER	LATITUDE (Decimal Degrees)	LONGITUDE (Decimal Degrees)	HOLE NUMBER	STATION	OFFSET	ELEVATION (FT)
1 - SPAN BRIDGE - KY 81 OVER SLOUGH						
1001	37.4719816°N	87.2376135°W	1001	105+37.28	21.24' RT	385.13

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 28, 2023

SUBJECT: **Henderson County**
D2 051B00119N
Item No. 2-10091
KY 145
Bridge Over Beaver Dam Creek
Geotechnical Engineering Structure Foundation Report

1.0 Location and Description

The project is located on KY 145 over Beaver Dam Creek, approximately 2.40 miles southeast of the city of Corydon, Henderson, Kentucky. The bridge is being replaced as part of the KYTC SW Bridge Delivery Program. The proposed bridge is a single-span structure constructed using PPC Box Beams with a length of 69'-3" (out to out), a bridge width of 26'-6½" on a 45˚ skew left. The bridge will be constructed with two pile supported integral end bents.

2.0 Site Geologic Conditions

The bridge is located within the Poole, KY Geologic and Topographic Quadrangles (GQ #1088). Geologic mapping of the bridge location shows the geologic strata composed of water deposited alluvium which consists of silts, sands, and gravels and underlain by the Lisman Formation and the base of Madisonville Limestone Member. The Lisman Formation is comprised of shales, sandstones, siltstones, limestone, coal and underclay. Shales are medium gray to black, commonly clayey to finely sandy, micaceous, poorly to well indurated. The Natural Resources Conservation Service (NRCS) Soil map classifies the surface soils at the bridge location as Belknap Silt Loams.

3.0 Field Investigation

Subsurface drilling was conducted by Bacon Farmer Workman Engineering & Testing, Inc. (BFW) from January 18th to 19th, 2023. One boring (B-1001, Station 49+76.48 13.28' RT) was advanced near the proposed southern end bent (Integral End Bent 1) and one boring (B-1002, Station 50+14.59 28.58' LT) was advanced near the proposed northern end bent (Integral End Bent 2). In boring, B-1001, splitspoon refusal was met on weathered shale bedrock at an initial depth of 35.8 feet (Elevation 350.53) below ground surface (bgs). This upper zone of shale was weathered, nondurable and was augered through till auger refusal depth of 39.6 feet bgs (Elevation 346.73). Coring activities were conducted within boring, B-1001 to a termination depth of 50.5 feet bgs (Elevation 335.83). Boring B-1002 was advanced to auger refusal depth of 34.3 feet bgs (Elevation 350.18) where coring activities were conducted to a termination depth of 45.0 feet (Elevation 339.48) bgs.

Soil and core 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 layered inorganic low plasticity clays, silty clays, silts, sandy silts, silts with sand and some 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 ML, CL, and CL-ML using the Unified Soil Classification System and A-4, A-6, and A-7-6 using the AASHTO Classification Method.

5.0 Subsurface Conditions

Soil samples collected from each boring location were similar in type and consistency. Below surface organics, sandy silts with gravel and silty clays were encountered to approximately 5 to 7 feet bgs. Below the sandy silts and silty clays, the soils transitioned to clays ranging from lean, silty to sandy and extending to a depth of approximately 20 to 25 feet bgs. The soils were soft to firm in consistency. Below the clays the soils transitioned to silts ranging from silts to silts with sand. The silts and sandy silts extended to both splitspoon refusal and auger refusal depths of between 34.3 and 35.8 feet bgs. The silts were firm to stiff in consistency.

Splitspoon refusal was met on weathered shale in boring, B-1001 at a depth of 35.8 feet bgs. This upper zone of shale was weathered, nondurable and was augered through till auger refusal depth of 39.6 feet bgs. Coring activities were commenced in both borings at depths ranging from 34.3 to 39.6 feet bgs and were terminated at depths between 45.0 and 50.5 feet bgs. The underlying bedrock was comprised of dark gray shale, durable, very fine grained, micaceous, and sandy in lower depths. Kentucky Rock Quality Designation (KYRQD) in boring, B-1001 ranged from 78 to 90 with recoveries ranging from 96 to 100 percent. KYRQD values in boring, B-1002 ranged from 62 to 76 percent with recoveries of 100 percent.

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 Bent 1 and 2 – Both **End Bents 1 and 2** will use end bearing H-Pile foundations seated on bedrock for structural support. Piles at End Bent 1 will be driven through the initial weathered shale to more competent bedrock with a tip elevation of approximately Elevation 346.7. Piles at End Bent 2 will be seated on bedrock with a tip elevation of approximately Elevation 350.1. Based on depth to rock within the borings, the use of predrilling it not anticipated to be needed.

According to the **KYTC Bridge Program Project Delivery Manual** the use of H-piles is preferred over pipe piles. The use of pipe piles is not recommended due to the presence of shallow bedrock.

The use of an axial resistance factor of 0.50 is recommended to be used to estimate the maximum nominal pile resistance (f_c) for severe driving conditions.

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. 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.

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	8.79	6.76	15.55
End Bent 1	8.79	6.76	15.55

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 –** A wave equation was not conducted for this location due to the relatively shallow depths to rock. Based on analysis of similar locations, it will be possible to drive 12" H-piles to bedrock and practical refusal without encountering excessive blow counts or damaging the pile. 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. For **12" H-pile**, a hammer with rated energy between 20 and 27 kips-ft. will be required to drive the H-piles to practical refusal without encountering excessive blow counts or damaging the piles.

6.6 **Verification of Piles Capacities** – Drive point bearing piles to practical refusal with Case 2 being recommended. For this project minimum blow requirements are reached after total penetration becomes ½ inch or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of ½ inch or less.

Advance the production piling to the driving resistances specified above and to depths determined by test pile(s) and subsurface data sheet. Immediately cease driving operations if the pile visibly yields or becomes damaged during driving. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advanced the pile. Drive additional production and test piles if directed by the Engineer.

7.0 Plan Notes

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

7.1 PRACTICAL REFUSAL (Case 2): Drive point bearing piles to practical refusal. For this project minimum blow requirements are reached after total penetration becomes ½ inch or less for 10 consecutive blows, practical refusal is obtained after the pile is struck an additional 10 blows with total penetration of ½ inch or less. Advance the production piling to the driving resistances specified above and to the depths determined by test pile(s) and subsurface data sheet(s). Immediately cease driving operations if the pile visibly yields or becomes damaged during driving. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advance the pile. Drive additional production and test piles if directed by the Engineer.

7.2 HAMMER CRITERIA: Single acting diesel hammers with rated energies of 20 kip-ft to 27 kips-ft is recommended for HP 12 x 53 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.

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

7.4 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.

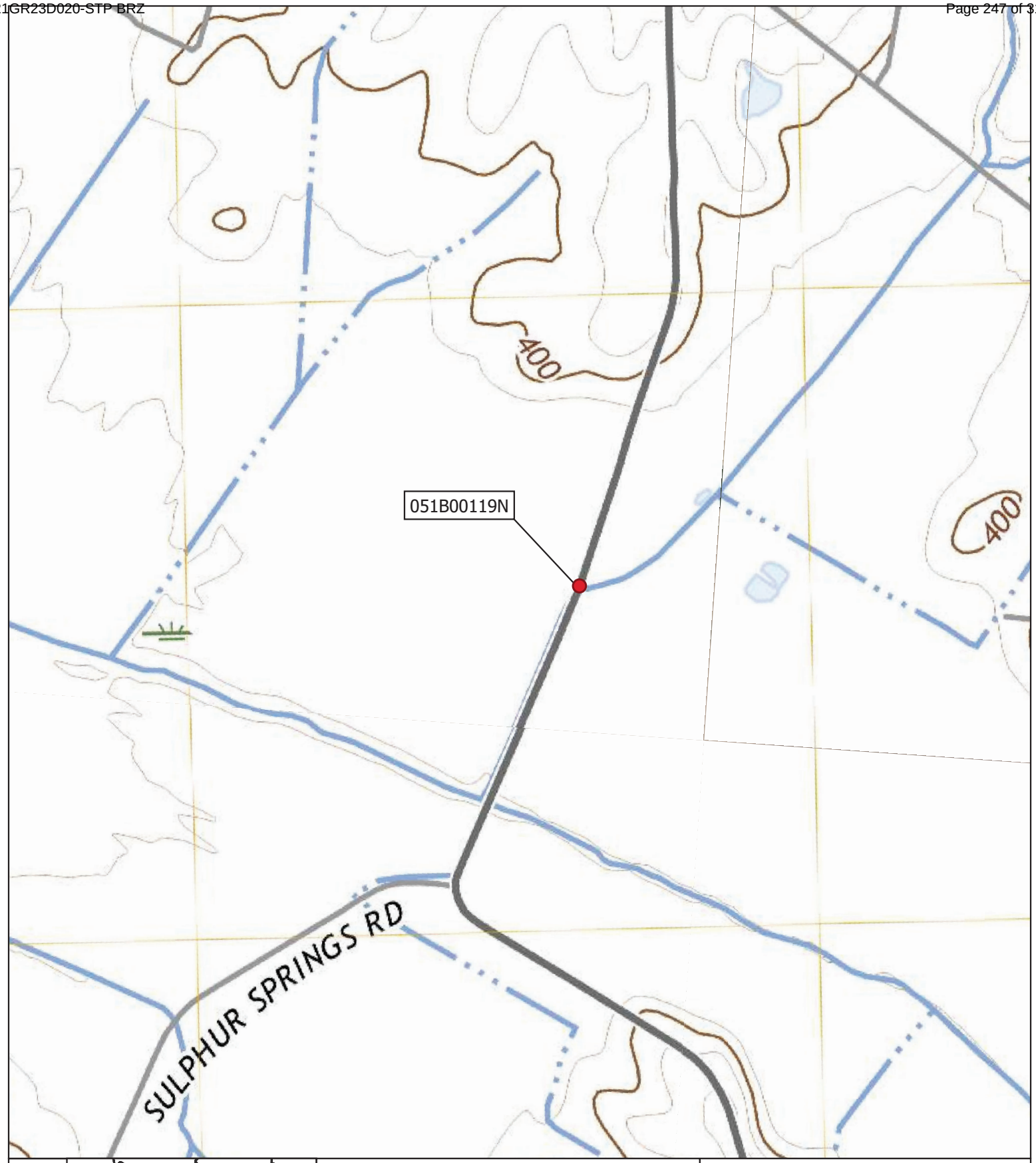
7.5 Cofferdams and/or dewatering methods may be required to facilitate foundation construction.

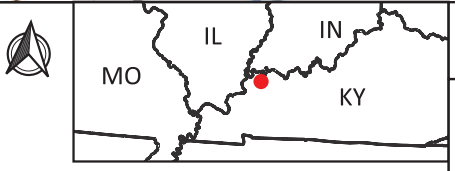
7.6 Temporary shoring or sheeting may be required to facilitate construction.

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**
- **Coordinate Data Sheet**





0 600 1,200 ft

1 inch : 667 feet

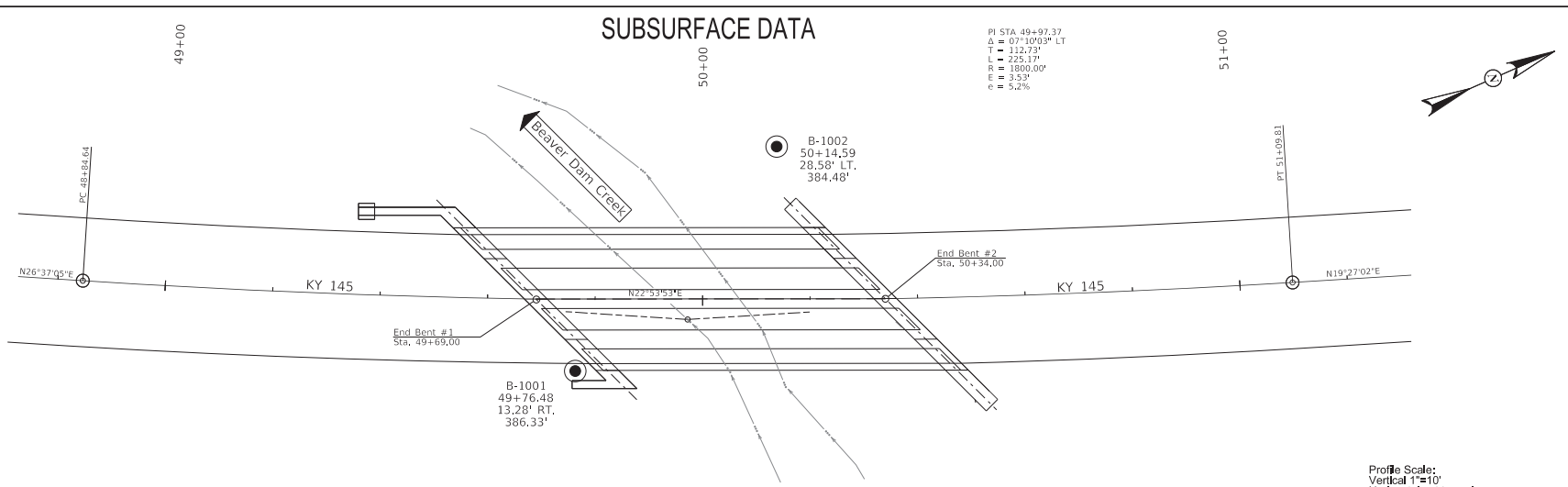
KY-145 Over Beaver Dam Creek

37.7070711, -87.6962467
Henderson County, KY

Project Number:	Drafted/Checked:	Date:
22349 - 10091	HK/CF	2023-02-22

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. = 387.72

END BENT TWO
APPROXIMATE ROADWAY GRADE ELEV. = 387.71

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

B-1001
49+76.48
13.28' RT.
386.33'

D_{50} (mm)	w%	LI		
0.060	20.58	NP	N=5	A-4, ML, S+C=53(50+3)
0.014	20.74	0.613	N=2	A-4, ML, S+C=75(73+2)
			N=7	
			N=5	
0.010	25.42	0.603	N=5	A-4, CL, S+C=98(87+11)
			N=6	
0.014	20.74	0.613	N=7	A-6, CL, S+C=84(72+12)
0.063	21.09	NP	N=9	A-4, ML, S+C=53(44+9)
0.011	9.27	NP	N=50/0.3	A-4, ML, S+C=86(68+18)
	KYRQD	REC		
	78	100		
	90	96		Shale: dark gray, clayey to very fine grained, micaceous
	90	100		

Top of rock elev. = 350.53
Base of weathered rock elev. = 346.73

B-1002
50+14.59
28.58' LT.
384.48'

D_{50} (mm)	w%	LI		
0.012	28.98	NP	N=2	A-4, ML, S+C=93(86+7)
0.009	24.50	0.416	N=6	A-4, CL-ML, S+C=95(77+18)
0.008	24.16	0.346	N=6	A-6, CL, S+C=97(75+22)
0.008	27.60	0.622	N=3	A-4, CL, S+C=96(76+20)
			N=5	
0.010	24.91	0.818	N=5	A-4, CL-ML, S+C=95(81+14)
0.021	19.77	NP	N=11	A-4, ML, S+C=73(64+9)
0.011	20.34	-0.589	N=39	A-7-6, ML, S+C=81(57+24)
	KYRQD	REC		
	67	100		
	62	100		Shale: dark gray, fine grained, micaceous
	76	100		

Top of rock elev. = 350.18
Base of weathered rock elev. = 350.10

400 390 380 370 360 350 340 330 320 310

Datum

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SUBSURFACE DATA FOR KY 145 OVER BEAVER DAM CREEK

HORIZONTAL SCALE
SCALE: N.T.S.

ITEM NO. 2-10091
COUNTY OF HENDERSON
SHEET NO.

OpenRoads Designer v10.16.2.267 USER: bvollmer FILE NAME: C:\BMS\WSP-US-PW-02\D0561520\051B00119N_SUBSURFACE_DATA.DGN

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

County Henderson Date 2/9/2023

Road Number KY 145

Survey Crew / Consultant BFW

Contact Person Chris Farmer

Item # 02-10091

Mars#

Project #

Notes:

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

HOLE NUMBER	LATITUDE (Decimal Degrees)	LONGITUDE (Decimal Degrees)	HOLE NUMBER	STATION	OFFSET	ELEVATION (FT)
1 - SPAN BRIDGE - KY 145 OVER BEAVER DAM CREEK						
1001	37.7069965°N	87.6961844°W	1001	49+76.48	13.28' RT	386.33
1002	37.7071345°N	87.6962705°W	1002	50+14.59	28.58' LT	384.48

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 9, 2023

SUBJECT: **Caldwell County**
D2 017B00076N
Item No. 2-10065
KY 1592
Bridge Over Towery Branch
Geotechnical Engineering Structure Foundation Report

1.0 Location and Description

The project is located on KY 1592 (Webster Road) over Towery Branch, approximately 2.64 miles southeast of the intersection of KY 139 and KY 1592 in Caldwell 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 Box Beams with a length of 60'-6" (out to out), a bridge width of 28'-0" on a 0˚ skew. The bridge will be constructed with two pile supported fixed end bents.

2.0 Site Geologic Conditions

The bridge is located within the Dalton, KY Geologic and Topographic Quadrangles (GQ #490). Geologic mapping of the bridge location shows the geologic strata composed of water deposited alluvium which consists of clays, silts, sands, and gravels and underlain by the Caseyville Formation. The Caseyville Formation is comprised of sandstones, shales, and coal. Sandstones are yellowish brown, medium- to coarse-grained, micaceous, and generally thick bedded. The Natural Resources Conservation Service (NRCS) Soil map classifies the surface soils at the bridge location as Belknap Silt Loams.

3.0 Field Investigation

Subsurface drilling was conducted by Bacon Farmer Workman Engineering & Testing, Inc. (BFW) from January 23rd to 24th, 2023. Boring B-1001 (Station 50+31.34, 21.67' LT) was advanced near the proposed western end bent (Fixed End Bent 1) and boring, B-1002 (Station 50+68.74, 24.65' Lt) was advanced near the proposed eastern end bent (Fixed End Bent 2). Both borings were advanced to auger refusal depths ranging from 60.0 (Elevation 299.20) to 60.5 feet (Elevation 298.67) below ground surface (bgs) for borings B-1001 and B-1002, respectively. Coring activities were conducted in both borings to termination depths of between 70.4 feet (Elevation 288.8) and 70.5 feet (Elevation 298.67) for borings, B-1001 and B-1002, respectively.

Soil and core 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 layered inorganic low plasticity clays, silty clays, sandy silty clays, silts, sandy silts, silts with sand and silty sands 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 ML, CL, CL-ML, and SM, using the Unified Soil Classification System and A-4, A-6, and A-2-4 using the AASHTO Classification Method.

5.0 Subsurface Conditions

Soil samples collected from each boring location were similar in type and consistency. Below surface organics, silts, silts with sand, silty clays and lean clays were encountered to approximately 7 to 10 feet. The upper soils were very soft in consistency. Below the upper strata, the borings encountered interbedded silty clays, lean clays, and clays with sand which extended to depths of between 40 to 48 feet bgs. The soil consistencies ranged from soft to firm. Below this depth, the soils transitioned to silty sands, sandy silts to silty sands with gravel. The soils were firm to dense in consistency and extended to auger refusal depths.

Coring activities were commenced in both borings at depths ranging from 60.0 to 60.5 feet bgs and were terminated at depths between 70.4 and 70.5 feet bgs. The underlying bedrock was comprised of dark tan to brown sandstone, durable, fine to medium grained, with a few very thin shales seams. Kentucky Rock Quality Designation (KYRQD) in boring, B-1001 ranged from 64 to 100 with recoveries of 100 percent. KYRQD values in boring, B-1002 ranged from 67 to 73 percent with recoveries of 100 percent.

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 Bent 1 and 2** – Both **End Bents 1 and 2** will use end bearing H-Pile foundations seated on bedrock for structural support with approximate tip elevations between 299.10 and 298.50, respectively. Based on the depth to rock within the borings, the use of predrilling should not be required.

According to the **KYTC Bridge Program Project Delivery Manual** the use of H-piles is preferred over pipe piles. The use of pipe piles is not recommended due to the presence of bedrock.

The use of an axial resistance factor (f_c) of 0.50 is recommended to be used to estimate the maximum nominal pile resistance for severe driving conditions.

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. 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.

The foundation 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	11.58	8.01	19.59
End Bent 2	11.58	8.01	19.59

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 12x53, 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** – Drive point bearing piles to practical refusal with Case 1 being recommended. For this project minimum blow requirements are reached after total penetration becomes ¼ inch or less for 5 consecutive blows, practical refusal is obtained after the pile is struck an additional 5 blows with total penetration of ¼ inch or less.

Advance the production piling to the driving resistances specified above and to depths determined by test pile(s) and subsurface data sheet. Immediately cease driving operations if the pile visibly yields or becomes damaged during driving. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advanced the pile. Drive additional production and test piles if directed by the Engineer.

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. As stated in Section 6.2, a minimum pile embedment of 10 feet must be maintained.

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 PRACTICAL REFUSAL (Case 1): Drive point bearing piles to practical refusal. For this project minimum blow requirements are reached after total penetration becomes ¼ inch or less for 5 consecutive blows, practical refusal is obtained after the pile is struck an additional 5 blows with total penetration of ¼ inch or less. Advance the production piling to the driving resistances specified above and to the depths determined by test pile(s) and subsurface data sheet(s). Immediately cease driving operations if the pile visibly yields or becomes damaged during driving. If hard driving is encountered because of dense strata or an obstruction, such as a boulder before the pile is advanced to the depth anticipated, the Engineer will determine if more blows than the average driving resistance specified for practical refusal is required to further advance the pile. Drive additional production and test piles if directed by the Engineer.

7.2 HAMMER CRITERIA: Single acting diesel hammers with rated energies of 27 kip-ft to 33 kips-ft is recommended for HP 12 x 53 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.

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

7.4 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.

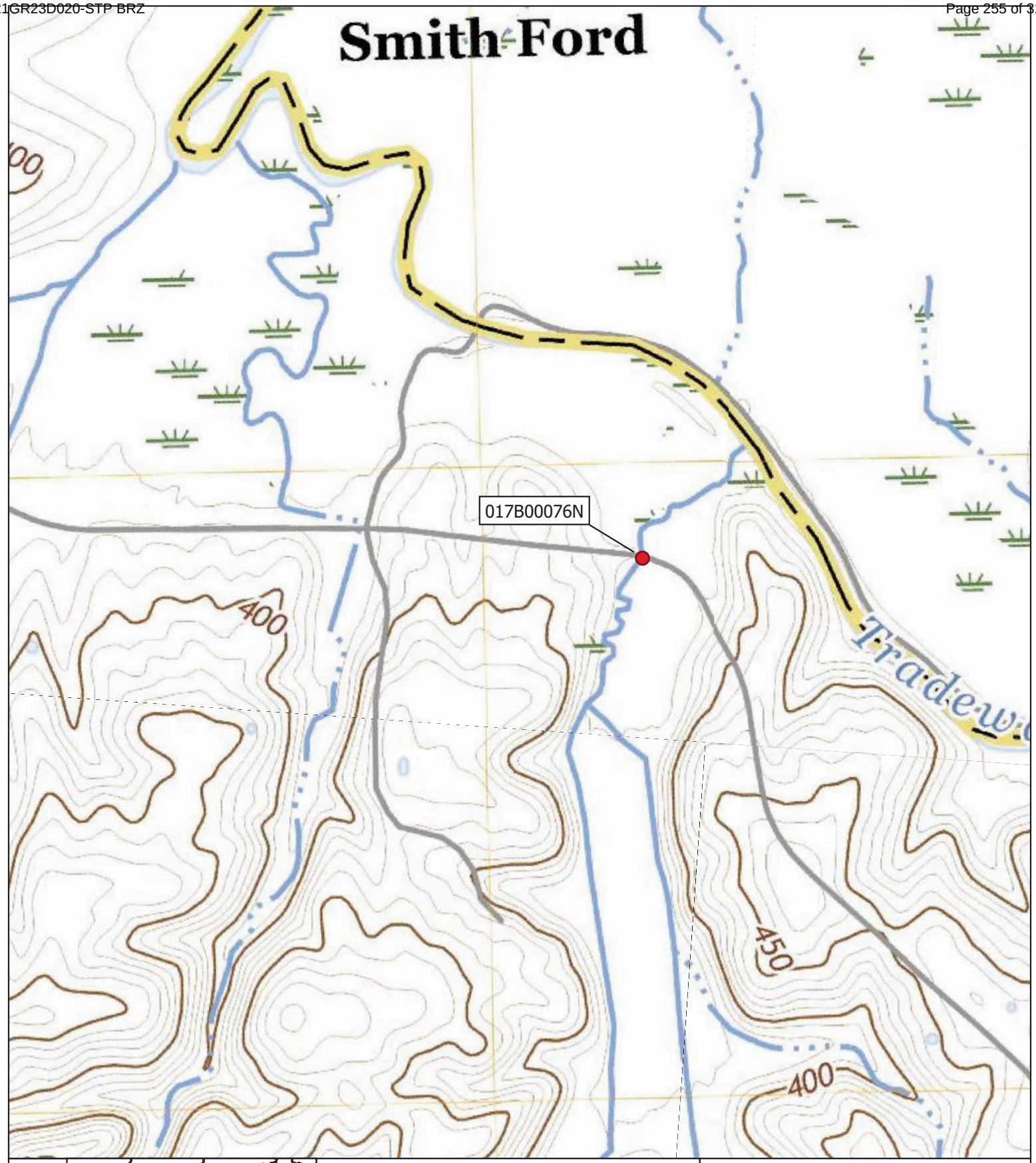
7.5 Cofferdams and/or dewatering methods may be required to facilitate foundation construction.

7.6 Temporary shoring or sheeting may be required to facilitate 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**
- **Coordinate Data Sheet**



0 600 1,200 ft

1 inch : 667 feet

KY 1592 Over Towery Branch

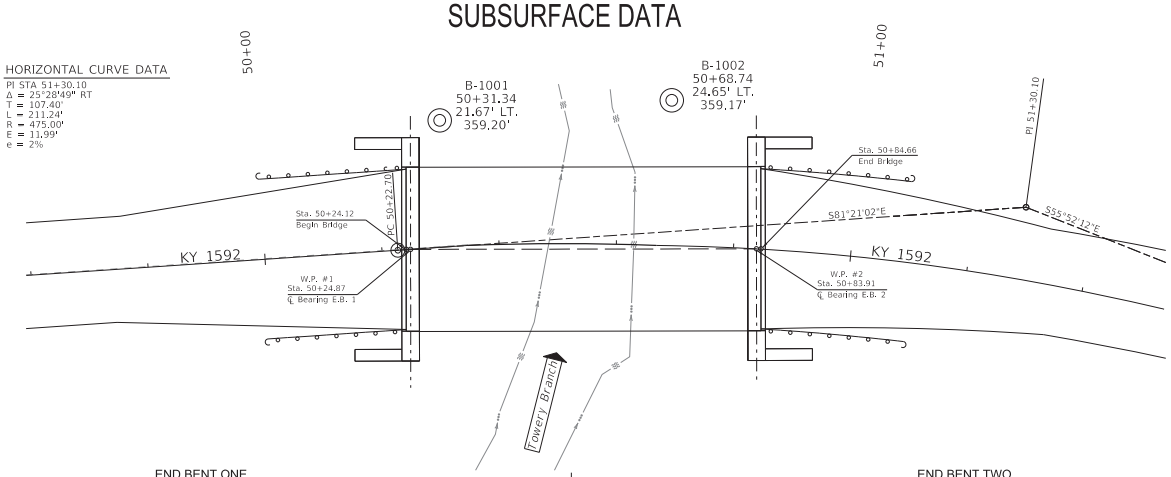
37.3123000, -87.8434958
Caldwell County, KY

Project Number:	Drafted/Checked:	Date:
22349 - 10065	HK/CF	2023-02-02

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

SUBSURFACE DATA

HORIZONTAL CURVE DATA
PI STA 51+30.10
Δ = 25°28'49" RT
T = 107.40'
L = 211.24'
R = 475.00'
E = 11.99'
e = 2%



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

END BENT ONE	END BENT TWO
APPROXIMATE ROADWAY GRADE ELEV. = 363.80	APPROXIMATE ROADWAY GRADE ELEV. = 363.08

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

B-1001
50+31.34
21.67' LT.
359.20'

D_{50} (mm)	w%	LI		
0.021	32.50	1.18	N=2	A-4, ML, S+C=75(69+6)
0.012	31.75	1.82	N=3	A-4, CL-ML, S+C=91(82+9)
0.012	31.69	1.29	N=0	A-4, CL, S+C=93(85+8)
0.026	26.60	2.86	N=0	A-4, ML, S+C=69(66+3)
0.031	24.45	1.09	N=6 N=5	A-4, CL-ML, S+C=65(62+3)
0.007	28.39	0.49	N=10 N=7	A-6, CL, S+C=95(68+27)
0.042	21.79	0.73	N=9 N=6	A-6, CL, S+C=56(41+15)
0.019	24.40	0.92	N=5	A-4, CL, S+C=74(64+10)
0.084	18.46	NP	N=9	A-4, SM, S+C=47(39+8)
0.239	19.17	NP	N=16	A-2-4, SM, S+C=17(14+3)

KYRQD	REC
100	100
64	100
96	100

Sandstone: Tan to brown, durable, fine grained with thin shale seams

Top of rock elev. = 299.20
Base of weathered rock elev. = 299.10

B-1002
50+68.74
24.65' LT.
359.17'

D_{50} (mm)	w%	LI		
0.012	31.49	0.54	N=3 N=2	A-4, ML, S+C=88(76+12)
0.016	35.07	2.01	N=2	A-4, CL-ML, S+C=85(82+3)
0.015	38.37	3.27	N=2	A-4, ML, S+C=86(83+3)
0.022	26.41	0.91	N=7	A-4, CL-ML, S+C=72(65+7)
0.011	27.75	0.57	N=7	A-4, CL, S+C=91(76+15)
0.009	32.36	2.56	N=4	A-4, CL-ML, S+C=94(73+21)
0.008	30.59	0.59	N=9 N=4	A-6, CL, S+C=95(74+21)
0.019	21.33	0.61	N=5	A-6, CL, S+C=75(68+7)
0.131	16.74	NP	N=5 N=75/0.4	A-2-4, SM, S+C=32(26+6)
0.056	22.27	NP	N=9	A-4, ML, S+C=54(48+6)
0.389	17.30	NP	N=25/0.5	A-2-4, SM, S+C=17(15+2)

KYRQD	REC
67	100
73	100

Sandstone: Tan to brown, durable, fine grained with thin shale seams

Top of rock elev. = 298.67
Base of weathered rock elev. = 298.50

370 360 350 340 330 320 310 300 290 280 270

Datum

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DRAWING TITLE: SUBSURFACE DATA FOR KY 1592 OVER TOWERY BRANCH

HORIZONTAL SCALE
SCALE: N.T.S.

ITEM NO. 2-10065
COUNTY OF CALDWELL
SHEET NO.

OpenRoads Designer v10.16.2.267 USER: bvollmer FILE NAME: C:\BMS\WSP-US-PW-02\D0560830\017B00076N_SUBSURFACE_DATA.DGN

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

County Caldwell Date 2/9/2023

Road Number KY 1592

Survey Crew / Consultant BFW

Contact Person Chris Farmer

Item # 02-10065

Mars#

Project #

Notes:

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

HOLE NUMBER	LATITUDE (Decimal Degrees)	LONGITUDE (Decimal Degrees)	HOLE NUMBER	STATION	OFFSET	ELEVATION (FT)
1 - SPAN BRIDGE - KY 1592 OVER TOWERY BRANCH						
1001	37.3123624°N	87.8434320°W	1001	50+31.34	21.67' LT	359.20
1002	37.3123475°N	87.8435677°W	1002	50+68.74	24.65' LT	359.17

MATERIAL SUMMARY

CONTRACT ID: 235320 **121GR23D020-STP BRZ** **BR01715922300**

KY 1592 ADDRESS DEFICIENCIES OF KY 1592 OVER TOWERY BRANCH (017B00076N) BRIDGE REPLACEMENT, A DISTANCE OF .08 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0005	00001	DGA BASE	348.00	TON
0010	00100	ASPHALT SEAL AGGREGATE	5.00	TON
0015	00103	ASPHALT SEAL COAT	1.00	TON
0020	00212	CL2 ASPH BASE 1.00D PG64-22	440.00	TON
0025	00301	CL2 ASPH SURF 0.38D PG64-22	70.00	TON
0030	00356	ASPHALT MATERIAL FOR TACK	2.00	TON
0035	01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	4.00	EACH
0040	01990	DELINEATOR FOR BARRIER WALL-B/W	2.00	EACH
0045	02230	EMBANKMENT IN PLACE	945.00	CUYD
0050	02351	GUARDRAIL-STEEL W BEAM-S FACE	100.00	LF
0055	02367	GUARDRAIL END TREATMENT TYPE 1	4.00	EACH
0060	02429	RIGHT-OF-WAY MONUMENT TYPE 1	9.00	EACH
0065	02432	WITNESS POST	9.00	EACH
0070	02545	CLEARING AND GRUBBING - APPROX LESS THAN 1 ACRE	1.00	LS
0075	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS
0080	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
0085	02726	STAKING	1.00	LS
0090	02731	REMOVE STRUCTURE	1.00	LS
0095	03299	ARMORED EDGE FOR CONCRETE	48.00	LF
0100	06514	PAVE STRIPING-PERM PAINT-4 IN	880.00	LF
0105	08003	FOUNDATION PREPARATION	1.00	LS
0110	08019	CYCLOPEAN STONE RIP RAP	392.00	TON
0115	08033	TEST PILES	130.00	LF
0120	08046	PILES-STEEL HP12X53	484.40	LF
0125	08094	PILE POINTS-12 IN	10.00	EACH
0130	08100	CONCRETE-CLASS A	36.40	CUYD
0135	08104	CONCRETE-CLASS AA	24.40	CUYD
0140	08151	STEEL REINFORCEMENT-EPOXY COATED	7,432.00	LB
0145	08664	PRECAST PC BOX BEAM CB27-48	363.00	LF
0150	20191ED	OBJECT MARKER TY 3	4.00	EACH
0155	20550ND	SAWCUT PAVEMENT	36.00	LF
0160	21415ND	EROSION CONTROL	1.00	LS
0165	23378EC	CONCRETE SEALING	2,641.00	SQFT
0170	25017ED	RAIL SYSTEM SIDE MOUNTED MGS	109.00	LF
0175	02568	MOBILIZATION	1.00	LS
0180	02569	DEMOBILIZATION	1.00	LS

CONTRACT ID: 235320 **121GR23D020-STP BRZ** **BR05101452300**

KY 145 ADDRESS DEFICIENCIES OF KY 145 OVER BEAVER DAM CREEK (051B00119N) BRIDGE WITH GRADE, DRAIN & SURFACE, A DISTANCE OF .16 MILES.

MATERIAL SUMMARY

DRAIN & SURFACE, A DISTANCE OF 10 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0185	00001	DGA BASE	617.00	TON
0190	00020	TRAFFIC BOUND BASE	72.00	TON
0195	00100	ASPHALT SEAL AGGREGATE	2.30	TON
0200	00103	ASPHALT SEAL COAT	.50	TON
0205	00212	CL2 ASPH BASE 1.00D PG64-22	1,196.00	TON
0210	00301	CL2 ASPH SURF 0.38D PG64-22	167.00	TON
0215	00441	ENTRANCE PIPE-18 IN	44.00	LF
0220	02200	ROADWAY EXCAVATION	1,690.00	CUYD
0225	02351	GUARDRAIL-STEEL W BEAM-S FACE	135.00	LF
0230	02360	GUARDRAIL TERMINAL SECTION NO 1	1.00	EACH
0235	02367	GUARDRAIL END TREATMENT TYPE 1	3.00	EACH
0240	02429	RIGHT-OF-WAY MONUMENT TYPE 1	7.00	EACH
0245	02545	CLEARING AND GRUBBING - APPROX LESS THAN 1 ACRE	1.00	LS
0250	02585	EDGE KEY	40.00	LF
0255	02603	FABRIC-GEOTEXTILE CLASS 2	61.00	SQYD
0260	02610	RETAINING WALL-GABION	42.00	CUYD
0265	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS
0270	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
0275	02726	STAKING	1.00	LS
0280	02731	REMOVE STRUCTURE	1.00	LS
0285	03299	ARMORED EDGE FOR CONCRETE	68.00	LF
0290	06514	PAVE STRIPING-PERM PAINT-4 IN	3,020.00	LF
0295	08003	FOUNDATION PREPARATION	1.00	LS
0300	08019	CYCLOPEAN STONE RIP RAP	490.00	TON
0305	08033	TEST PILES	75.00	LF
0310	08046	PILES-STEEL HP12X53	383.00	LF
0315	08094	PILE POINTS-12 IN	13.00	EACH
0320	08100	CONCRETE-CLASS A	57.10	CUYD
0325	08104	CONCRETE-CLASS AA	85.00	CUYD
0330	08151	STEEL REINFORCEMENT-EPOXY COATED	19,597.00	LB
0335	08670	PRECAST PC BOX BEAM SB27	266.00	LF
0340	14005	W ENCASEMENT CONCRETE	40.00	LF
0345	14022	W FLUSH HYDRANT ASSEMBLY	1.00	EACH
0350	14060	W PIPE PVC 08 INCH	637.00	LF
0355	14066	W PIPE PVC SPECIAL	160.00	LF
0360	14095	W TIE-IN 08 INCH	2.00	EACH
0365	14106	W VALVE 08 INCH	2.00	EACH
0370	14118	W VALVE CUT-IN 08 INCH	1.00	EACH
0375	14153	W LEAK DETECTION METER	1.00	EACH
0380	20191ED	OBJECT MARKER TY 3	3.00	EACH
0385	21415ND	EROSION CONTROL	1.00	LS
0390	22883EN	CONCRETE WEDGE CURB	200.50	LF
0395	23378EC	CONCRETE SEALING	4,013.00	SQFT
0400	25028ED	RAIL SYSTEM SINGLE SLOPE - 40 IN	139.00	LF
0405	25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	4.00	EACH
0410	02568	MOBILIZATION	1.00	LS
0415	02569	DEMOBILIZATION	1.00	LS

MATERIAL SUMMARY

CONTRACT ID: 235320 **121GR23D020-STP BRZ** **BR07500812300**

KY 81 ADDRES DEFICIENCIES OF KY 81 OF SLOUGH (075B00025N) BRIDGE REPLACEMENT, A DISTANCE OF .1 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0420	00003	CRUSHED STONE BASE	326.00	TON
0425	00020	TRAFFIC BOUND BASE	26.00	TON
0430	00100	ASPHALT SEAL AGGREGATE	8.00	TON
0435	00103	ASPHALT SEAL COAT	1.00	TON
0440	00212	CL2 ASPH BASE 1.00D PG64-22	259.00	TON
0445	00301	CL2 ASPH SURF 0.38D PG64-22	38.00	TON
0450	00356	ASPHALT MATERIAL FOR TACK	1.00	TON
0455	01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	9.00	EACH
0460	02230	EMBANKMENT IN PLACE	504.00	CUYD
0465	02351	GUARDRAIL-STEEL W BEAM-S FACE	425.00	LF
0470	02360	GUARDRAIL TERMINAL SECTION NO 1	1.00	EACH
0475	02367	GUARDRAIL END TREATMENT TYPE 1	3.00	EACH
0480	02381	REMOVE GUARDRAIL	403.00	LF
0485	02429	RIGHT-OF-WAY MONUMENT TYPE 1	9.00	EACH
0490	02432	WITNESS POST	3.00	EACH
0495	02545	CLEARING AND GRUBBING - APPROX. LESS THAN 1 ACRE	1.00	LS
0500	02585	EDGE KEY	47.00	LF
0505	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS
0510	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
0515	02677	ASPHALT PAVE MILLING & TEXTURING	19.00	TON
0520	02726	STAKING	1.00	LS
0525	02731	REMOVE STRUCTURE	1.00	LS
0530	03299	ARMORED EDGE FOR CONCRETE	64.00	LF
0535	04933	TEMP SIGNAL 2 PHASE	2.00	EACH
0540	06514	PAVE STRIPING-PERM PAINT-4 IN	1,030.00	LF
0545	08003	FOUNDATION PREPARATION	1.00	LS
0550	08019	CYCLOPEAN STONE RIP RAP	396.00	TON
0555	08033	TEST PILES	206.00	LF
0560	08051	PILES-STEEL HP14X89	980.00	LF
0565	08100	CONCRETE-CLASS A	42.00	CUYD
0570	08104	CONCRETE-CLASS AA	32.00	CUYD
0575	08151	STEEL REINFORCEMENT-EPOXY COATED	7,931.00	LB
0580	08663	PRECAST PC BOX BEAM CB21-48	432.00	LF
0585	20191ED	OBJECT MARKER TY 3	3.00	EACH
0590	20550ND	SAWCUT PAVEMENT	350.00	LF
0595	21415ND	EROSION CONTROL	1.00	LS
0600	23378EC	CONCRETE SEALING	2,347.00	SQFT
0605	25017ED	RAIL SYSTEM SIDE MOUNTED MGS	94.00	LF
0610	02568	MOBILIZATION	1.00	LS
0615	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

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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.

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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: KY20230040 09/29/2023

Superseded General Decision Number: KY20220040

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)(2)-(60).

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 $16.20 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 2023.
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 $12.15 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 2023.

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	01/06/2023
1	01/13/2023
2	02/10/2023
3	02/24/2023
4	03/31/2023
5	04/14/2023
6	06/09/2023
7	07/14/2023
8	08/04/2023
9	09/01/2023
10	09/08/2023
11	09/15/2023
12	09/29/2023

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

ELEC0369-006 06/01/2022

BUTLER, EDMONSON, LOGAN, TODD & WARREN COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 34.60	19.57

ELEC0429-001 06/01/2022

ALLEN & SIMPSON COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 31.55	14.08

ELEC0816-002 06/01/2023

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	$ 35.53	26.5%+7.85

Cable spicers receive $.25 per hour additional.

ELEC1701-003 06/01/2022

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO, UNION & WEBSTER COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 34.18	7.35+30.8%

Cable spicers receive $.25 per hour additional.

ELEC1925-002 06/01/2023

FULTON COUNTY (Up to a 5 mile radius of City Hall in Fulton):

	Rates	Fringes
CABLE SPLICER	$ 27.30	15.03
ELECTRICIAN	$ 27.05	15.02

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* 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 04/01/2022

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:	$ 30.59	26.10

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* 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

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* 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 07/01/2022

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL & MCCRACKEN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.76	17.12
GROUP 2	$ 24.01	17.12
GROUP 3	$ 24.06	17.12
GROUP 4	$ 24.66	17.12

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 07/01/2022

ALLEN, BUTLER, CALDWELL, CHRISTIAN, DAVIESS, EDMONSON, HANCOCK, HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, SIMPSON, TODD, TRIGG & WARREN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.76	17.12
GROUP 2	$ 24.01	17.12
GROUP 3	$ 24.06	17.12
GROUP 4	$ 24.66	17.12

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

	Rates	Fringes
Laborers:		
GROUP 1	$ 24.41	17.57

GROUP 2	$ 24.66	17.57
GROUP 3	$ 24.71	17.57
GROUP 4	$ 25.31	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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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) (ii)).

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.

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END OF GENERAL DECISIO"

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 Caldwell 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
4.8%	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 Henderson 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
3.5%	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 McLean County.

(Revised: 1/1/2023)

PART IV

INSURANCE

Refer to
Kentucky Standard Specifications for Road and Bridge Construction,
current edition

PART V

BID ITEMS

235320

PROPOSAL BID ITEMS

Report Date 9/27/23

Section: 0001 - BRIDGE - 017B00076N

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	348.00	TON		$	
0020	00100		ASPHALT SEAL AGGREGATE	5.00	TON		$	
0030	00103		ASPHALT SEAL COAT	1.00	TON		$	
0040	00212		CL2 ASPH BASE 1.00D PG64-22	440.00	TON		$	
0050	00301		CL2 ASPH SURF 0.38D PG64-22	70.00	TON		$	
0060	00356		ASPHALT MATERIAL FOR TACK	2.00	TON		$	
0070	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	4.00	EACH		$	
0080	01990		DELINEATOR FOR BARRIER WALL-B/W	2.00	EACH		$	
0090	02230		EMBANKMENT IN PLACE	945.00	CUYD		$	
0100	02351		GUARDRAIL-STEEL W BEAM-S FACE	100.00	LF		$	
0110	02367		GUARDRAIL END TREATMENT TYPE 1	4.00	EACH		$	
0120	02429		RIGHT-OF-WAY MONUMENT TYPE 1	9.00	EACH		$	
0130	02432		WITNESS POST	9.00	EACH		$	
0140	02545		CLEARING AND GRUBBING APPROX LESS THAN 1 ACRE	1.00	LS		$	
0150	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0160	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0170	02726		STAKING	1.00	LS		$	
0180	02731		REMOVE STRUCTURE	1.00	LS		$	
0190	03299		ARMORED EDGE FOR CONCRETE	48.00	LF		$	
0200	06514		PAVE STRIPING-PERM PAINT-4 IN	880.00	LF		$	
0210	08003		FOUNDATION PREPARATION	1.00	LS		$	
0220	08019		CYCLOPEAN STONE RIP RAP	392.00	TON		$	
0230	08033		TEST PILES	130.00	LF		$	
0240	08046		PILES-STEEL HP12X53	484.40	LF		$	
0250	08094		PILE POINTS-12 IN	10.00	EACH		$	
0260	08100		CONCRETE-CLASS A	36.40	CUYD		$	
0270	08104		CONCRETE-CLASS AA	24.40	CUYD		$	
0280	08151		STEEL REINFORCEMENT-EPOXY COATED	7,432.00	LB		$	
0290	08664		PRECAST PC BOX BEAM CB27-48	363.00	LF		$	
0300	20191ED		OBJECT MARKER TY 3	4.00	EACH		$	
0310	20550ND		SAWCUT PAVEMENT	36.00	LF		$	
0320	21415ND		EROSION CONTROL	1.00	LS		$	
0330	23378EC		CONCRETE SEALING	2,641.00	SQFT		$	
0340	25017ED		RAIL SYSTEM SIDE MOUNTED MGS	109.00	LF		$	

Section: 0002 - BRIDGE - 051B00119N

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0350	00001		DGA BASE	617.00	TON		$	
0360	00020		TRAFFIC BOUND BASE	72.00	TON		$	
0370	00100		ASPHALT SEAL AGGREGATE	2.30	TON		$	
0380	00103		ASPHALT SEAL COAT	.50	TON		$	
0390	00212		CL2 ASPH BASE 1.00D PG64-22	1,196.00	TON		$	
0400	00301		CL2 ASPH SURF 0.38D PG64-22	167.00	TON		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	00441		ENTRANCE PIPE-18 IN	44.00	LF		$	
0420	02200		ROADWAY EXCAVATION	1,690.00	CUYD		$	
0430	02351		GUARDRAIL-STEEL W BEAM-S FACE	135.00	LF		$	
0440	02360		GUARDRAIL TERMINAL SECTION NO 1	1.00	EACH		$	
0450	02367		GUARDRAIL END TREATMENT TYPE 1	3.00	EACH		$	
0460	02429		RIGHT-OF-WAY MONUMENT TYPE 1	7.00	EACH		$	
0470	02545		CLEARING AND GRUBBING APPROX LESS THAN 1 ACRE	1.00	LS		$	
0480	02585		EDGE KEY	40.00	LF		$	
0490	02603		FABRIC-GEOTEXTILE CLASS 2	61.00	SQYD		$	
0500	02610		RETAINING WALL-GABION	42.00	CUYD		$	
0510	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0520	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0530	02726		STAKING	1.00	LS		$	
0540	02731		REMOVE STRUCTURE	1.00	LS		$	
0550	03299		ARMORED EDGE FOR CONCRETE	68.00	LF		$	
0560	06514		PAVE STRIPING-PERM PAINT-4 IN	3,020.00	LF		$	
0570	08003		FOUNDATION PREPARATION	1.00	LS		$	
0580	08019		CYCLOPEAN STONE RIP RAP	490.00	TON		$	
0590	08033		TEST PILES	75.00	LF		$	
0600	08046		PILES-STEEL HP12X53	383.00	LF		$	
0610	08094		PILE POINTS-12 IN	13.00	EACH		$	
0620	08100		CONCRETE-CLASS A	57.10	CUYD		$	
0630	08104		CONCRETE-CLASS AA	85.00	CUYD		$	
0640	08151		STEEL REINFORCEMENT-EPOXY COATED	19,597.00	LB		$	
0650	08670		PRECAST PC BOX BEAM SB27	266.00	LF		$	
0660	14005		W ENCASEMENT CONCRETE	40.00	LF		$	
0670	14022		W FLUSH HYDRANT ASSEMBLY	1.00	EACH		$	
0680	14060		W PIPE PVC 08 INCH	637.00	LF		$	
0690	14066		W PIPE PVC SPECIAL	160.00	LF		$	
0700	14095		W TIE-IN 08 INCH	2.00	EACH		$	
0710	14106		W VALVE 08 INCH	2.00	EACH		$	
0720	14118		W VALVE CUT-IN 08 INCH	1.00	EACH		$	
0730	14153		W LEAK DETECTION METER	1.00	EACH		$	
0740	20191ED		OBJECT MARKER TY 3	3.00	EACH		$	
0750	21415ND		EROSION CONTROL	1.00	LS		$	
0760	22883EN		CONCRETE WEDGE CURB	200.50	LF		$	
0770	23378EC		CONCRETE SEALING	4,013.00	SQFT		$	
0780	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	139.00	LF		$	
0790	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	4.00	EACH		$	

Section: 0003 - BRIDGE - 075B00025N

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0800	00003		CRUSHED STONE BASE	326.00	TON		$	
0810	00020		TRAFFIC BOUND BASE	26.00	TON		$	
0820	00100		ASPHALT SEAL AGGREGATE	8.00	TON		$	
0830	00103		ASPHALT SEAL COAT	1.00	TON		$	
0840	00212		CL2 ASPH BASE 1.00D PG64-22	259.00	TON		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0850	00301		CL2 ASPH SURF 0.38D PG64-22	38.00	TON		$	
0860	00356		ASPHALT MATERIAL FOR TACK	1.00	TON		$	
0870	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	9.00	EACH		$	
0880	02230		EMBANKMENT IN PLACE	504.00	CUYD		$	
0890	02351		GUARDRAIL-STEEL W BEAM-S FACE	425.00	LF		$	
0900	02360		GUARDRAIL TERMINAL SECTION NO 1	1.00	EACH		$	
0910	02367		GUARDRAIL END TREATMENT TYPE 1	3.00	EACH		$	
0920	02381		REMOVE GUARDRAIL	403.00	LF		$	
0930	02429		RIGHT-OF-WAY MONUMENT TYPE 1	9.00	EACH		$	
0940	02432		WITNESS POST	3.00	EACH		$	
0950	02545		CLEARING AND GRUBBING APPROX. LESS THAN 1 ACRE	1.00	LS		$	
0960	02585		EDGE KEY	47.00	LF		$	
0970	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0980	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0990	02677		ASPHALT PAVE MILLING & TEXTURING	19.00	TON		$	
1000	02726		STAKING	1.00	LS		$	
1010	02731		REMOVE STRUCTURE	1.00	LS		$	
1020	03299		ARMORED EDGE FOR CONCRETE	64.00	LF		$	
1030	04933		TEMP SIGNAL 2 PHASE	2.00	EACH		$	
1040	06514		PAVE STRIPING-PERM PAINT-4 IN	1,030.00	LF		$	
1050	08003		FOUNDATION PREPARATION	1.00	LS		$	
1060	08019		CYCLOPEAN STONE RIP RAP	396.00	TON		$	
1070	08033		TEST PILES	206.00	LF		$	
1080	08051		PILES-STEEL HP14X89	980.00	LF		$	
1090	08100		CONCRETE-CLASS A	42.00	CUYD		$	
1100	08104		CONCRETE-CLASS AA	32.00	CUYD		$	
1110	08151		STEEL REINFORCEMENT-EPOXY COATED	7,931.00	LB		$	
1120	08663		PRECAST PC BOX BEAM CB21-48	432.00	LF		$	
1130	20191ED		OBJECT MARKER TY 3	3.00	EACH		$	
1140	20550ND		SAWCUT PAVEMENT	350.00	LF		$	
1150	21415ND		EROSION CONTROL	1.00	LS		$	
1160	23378EC		CONCRETE SEALING	2,347.00	SQFT		$	
1170	25017ED		RAIL SYSTEM SIDE MOUNTED MGS	94.00	LF		$	

Section: 0004 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1180	02568		MOBILIZATION	1.00	LS		$	
1190	02569		DEMOBILIZATION	1.00	LS		$	