



CALL NO. 100

CONTRACT ID. 221302

HARDIN COUNTY

FED/STATE PROJECT NUMBER NHPPIM 0654 (041)

DESCRIPTION I-65 AT KY 222

WORK TYPE GRADE, DRAIN & SURFACE WITH BRIDGE

PRIMARY COMPLETION DATE 300 WORKING DAYS

LETTING DATE: January 27,2022

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 am EASTERN STANDARD TIME January 27,2022. Bids will be publicly announced at 10:00 am EASTERN STANDARD TIME.

PLANS AVAILABLE FOR THIS PROJECT.

DBE CERTIFICATION REQUIRED - 12%

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

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PART I
SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 04

CONTRACT ID - 221302

NHPPIM 0654 (041)

COUNTY - HARDIN

PCN - DE04700652154

NHPPIM 0654 (041)

I-65 AT KY 222 IMPROVE SAFETY AND INCREASE CAPACITY AT I-65/KY-222 INTERCHANGE.GRADE, DRAIN & SURFACE WITH BRIDGE SYP NO. 04-00020.01.

GEOGRAPHIC COORDINATES LATITUDE 37:35:41.00 LONGITUDE 85:52:07.00

COMPLETION DATE(S):

COMPLETED BY 08/01/2022

300 WORKING Days

SEE SPECIAL NOTE FOR INTERIM
COMPLETION DATE

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.

April 30, 2018

FEDERAL CONTRACT NOTES

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

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

CIVIL RIGHTS ACT OF 1964

The Kentucky Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252) and the Regulations of the Federal Department of Transportation (49 C.F.R., Part 21), issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin.

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. There are special rules to DBE subcontractors satisfying DBE goals on federal-aid projects. 1st-Tier DBE Subcontractors may only enter into a 2nd-Tier subcontract with another DBE contractor.

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

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

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

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

DBE GOAL

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

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

OBLIGATION OF CONTRACTORS

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

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

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

CERTIFICATION OF CONTRACT GOAL

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

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

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

DBE PARTICIPATION PLAN

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

The DBE Participation Plan shall include the following:

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

- b) The dollar value of services provided by DBEs such as quality control testing, equipment repair and maintenance, engineering, staking, etc.;
 - c) The dollar value of joint ventures. DBE credit for joint ventures will be limited to the dollar amount of the work actually performed by the DBE in the joint venture;
4. Written and signed documentation of the bidder's commitment to use a DBE contractor whose participation is being utilized to meet the DBE goal; and
 5. Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment.

UPON AWARD AND BEFORE A WORK ORDER WILL BE ISSUED

Contractors must submit the signed subcontract between the contractor and the DBE contractor, along with the DBE's certificate of insurance. If the DBE is a supplier of materials for the project, a signed purchase order must be submitted to the Division of Construction Procurement.

Changes to 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 certainty 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 of 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 of Civil Rights and Small Business Development
6th Floor West 200 Mero Street
Frankfort, KY 40622

The prime contractor should notify the KYTC Office of 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.

TRAINEES

In Compliance with the "TRAINING SPECIAL PROVISION" included in Part III of the Proposal, the Contractor will be required to employ a trainee(s) for this contract.

PROJECT TRAFFIC COORDINATOR (PTC)

Be advised this project is a significant project pursuant to section 112.03.12.

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.

FUEL AND ASPHALT PAY ADJUSTMENT

The Department has included the Contract items Asphalt Adjustment and Fuel Adjustment for possible future payments at an established Contract unit price of \$1.00. The Department will calculate actual adjustment quantities after work is completed. If existing Contract amount is insufficient to pay all items on the contract with the adjustments, the Department will establish additional monies with a change order.

ASPHALT PAVEMENT RIDE QUALITY CATEGORY A

The Department will apply Pavement Rideability Requirements on this project in accordance with Section 410, Category A.

OPTION A

Be advised that the Department will accept compaction of asphalt mixtures furnished for driving lanes and ramps, at 1 inch (25mm) or greater, on this project according to OPTION A in accordance with Section 402 and Section 403 of the current Standard Specifications. The Department will require joint cores as described in Section 402.03.02 for surface mixtures only. The Department will accept compaction of all other asphalt mixtures according to OPTION B.

MATERIAL TRANSFER VEHICLE (MTV)

Provide and use a MTV in accordance with Sections 403.02.10 and 403.03.05.

SPECIAL NOTE FOR WORKING DAYS AND INTERIM COMPLETION DATE

The Project shall have 300 Working Days applied for overall completion.

An interim fixed completion date of August 1, 2022 is required for a portion of the Phase 1 work to construct Approach 2 and open it to traffic for access to the adjacent Glendale Industrial Mega Site. See Roadway plan sheets R97 and R101 for additional details. Failure to complete this work as specified in the plans by August 1, 2022 will result in Liquidated Damages of \$15,000 per day.

Special Note for CPM Scheduling

A. General.

Contrary to Kentucky Standard Specifications 108.07.04, additional contract time will only be added when the Engineer deems the critical path of the project has been affected. Create the progress schedule required for this project using the critical path method (CPM). The Contractor shall designate a Schedule Representative who shall be responsible for coordinating with the Engineer during the preparation and maintenance of the schedule. The contractor shall submit an interim schedule followed by a baseline schedule, or only a baseline schedule, depending on when the contractor starts work as described below.

B. Interim Schedule.

If the Contractor starts work within **30** days of the Notice to Begin Work, they shall submit an interim schedule. The interim schedule will be in CPM schedule format. The interim schedule shall include detailed activities for the work to be accomplished during the first **45** days of the Contract, and summary activities for the balance of the work. The interim schedule, if required, shall be submitted at the Preconstruction Conference. No work shall begin without the submission of an interim schedule.

C. Baseline Schedule.

The Contractor shall submit a baseline schedule as outlined in the submission requirements section (C.2) within **30** days of the Notice to Begin Work. No pay estimates will be processed after 15 days without the submission of the baseline schedule. The baseline schedule will be in CPM schedule format and as described below. The Engineer will review the baseline schedule and will “accept”, “accept as noted” or “reject” the schedule within **10** days of receipt. If the Engineer does not provide written notification regarding the disposition of the baseline schedule within **10** days, the submission will be considered “accepted.”

For baseline schedules that are “accepted as noted”, the Contractor shall make the necessary revisions and resubmit the revised schedule within **10** days. The Engineer will only “reject” baseline schedules that are not in compliance with contract requirements.

For baseline schedules that are “rejected”, the Engineer shall indicate in writing portions of the schedule that are not in compliance with the contract requirements. The Project Engineer shall conduct a mandatory meeting with the Contractor and the Contractor’s Schedule Representative within **10** days of the Engineer’s written notice. The purpose of this meeting is to resolve disputes with the baseline schedule so that it may be resubmitted. The Contractor shall provide clarification and all additional information necessary for the Engineer within **10** days of this meeting. The Contractor shall submit the revised Baseline Schedule to the Engineer for review and acceptance within **10** days of this meeting.

No pay estimates will be generated until the baseline schedule is “accepted” or “accepted

as noted.” In the event the baseline schedule is not “accepted” within 90 days of the Notice to Begin Work, all work shall cease on the project until the baseline schedule is “accepted”. The incurred delays from the “cease work order” will be the contractor’s responsibility and will not be considered for time extension. Any claims associated with time impacts for work performed or delay experienced prior to the baseline schedule being “accepted” or “accepted as noted” will be evaluated at the sole discretion of the Engineer. “Acceptance” by the Engineer will not relieve the Contractor of their responsibilities for compliance with specifications and contract requirements or for the accuracy or feasibility of the schedule.

“Acceptance” of the baseline schedule does not revise the Contract Documents. The baseline schedule must be “accepted” or “accepted as noted” by the Engineer prior to the Engineer evaluating any contractor claims associated with time impacts.

The Engineer’s review of the baseline schedule will be for compliance with the specifications and contract requirements. “Acceptance” by the Engineer will not relieve the Contractor of any of their responsibilities for the accuracy or feasibility of the schedule.

1. Schedule Requirements.

Generate and submit an electronic copy of the baseline schedule using Primavera Contractor 5.0 Deluxe by Primavera Systems Inc., Bala Cynwyd, PA, or equivalent electronically transferable software. The Contractor’s costs associated with these provisions should be incorporated into the bid item for the progress schedule.

Provide a calendar day schedule that shows the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the Project by the Original Contract Completion Date. Show the order and interdependence of activities and the sequence for accomplishing the work. Describe all activities in sufficient detail so that the Engineer can readily identify the work and measure the progress of each activity. The baseline schedule must reflect the scope of work, required phasing, maintenance of traffic requirements, interim completion dates, the Completion Date, and other project milestones established in the Contract Documents. Include activities for submittals, working drawings, shop drawing preparation, submittal review time for the Department shop drawings, material procurement and fabrication, and the delivery of materials, plant, and equipment, and other similar activities.

The Contractor shall be responsible for assuring all work, including all subcontractor’s work, is included in the schedule. The Contractor shall be responsible for assuring that all work sequences are logical and that the schedule indicates a coordinated plan.

Failure by the Contractor to include any element of work required for performance of the Contract shall not excuse the Contractor from completing all work within the required time. Omissions and errors will be corrected as described in Section F or H in this note and will not affect contract time.

a) Administrative Identifier Information.

1. Project Number
2. County
3. Route Number
4. Item Number
5. CID Number
6. Award Date
7. Date of Notice to Begin Work
8. Completion Date
9. Contractor's Name
10. Contractor's Dated Signature
11. KYTC's Dated Accepted Signature

b) Project Activities.

- i. Activity Identification (ID): Assign each activity a unique identification number. Activity ID length shall not exceed 10 characters. Assign baseline Activity ID's in sequences of 10 (e.g.; A1000, A1010, A1020). This will allow modifications and additional items to be placed into the Identification scheme easily. Once accepted, the Activity ID shall be used for the duration of the project.
- ii. Activity Description: Each activity shall have a narrative description consisting of a verb or work function (e.g.; form, pour, excavate, pier #2) and an object (e.g.; slab, footing, underdrain).
- iii. Activity Original Duration: Assign planned duration in calendar days for each activity. Do not exceed a duration of 20 calendar days for any construction activity unless approved by the Engineer. Do not represent the maintenance of traffic, erosion control, and other similar items as single activities extending to the Completion Date. Break these Contract Items into component activities in order to meet the duration requirements of this paragraph.
- iv. Activity Relationships:
 - All activities, except the first activity, shall have a predecessor(s). All activities, except the final activity, shall have a successor(s).
 - Use only finish-to-start relationships with no leads or lags to link activities, or use start-to-start relationships with lags no greater than the predecessor duration to link activities.
 - Use of finish-to-finish relationship is permitted when both activities are already linked with a start-to-start relationship.

c) Project Milestones.

- i. Start Project: The Contractor shall include as the first milestone in the schedule, a milestone named "Start Project". The date used for this milestone is the date the contract is executed and signed by the Department.
- ii. End Project Milestone: The Contractor shall include as the last activity in the project schedule, a milestone named "End Project". The date used for this milestone is considered the project completion date.
- iii. Start Phase Milestone: The Contractor shall include as the first activity for a project phase, an activity named "Start Phase X", where "X" identifies the phase

of work. The Contractor may include additional milestones but, as a minimum, must include all contractual milestones.

- iv. End Phase Milestone: The Contractor shall include as the last activity in a project phase, an activity named "End Phase X" where "X" identifies the phase of work. The Contractor may include additional milestones, but at a minimum contractual milestones.

d) Schedule Options.

The schedule may only be calculated using retained logic. Show open ends as non-critical. Schedule durations are to be contiguous. The project calendar will be based on the Contractor's plan for completing the project. However, the scheduling increment (hours or days) will be stipulated during the Preconstruction Conference. All days must remain active unless the Contractor is instructed not to work by contract documents. Total float shall be calculated as finish float.

2. Submission Requirements.

Submit all schedules within the time frames specified. Submit the schedule and information in electronic file format via email, and compact disc (CD) compatible with the Engineer's computer. Submit the following information along with the electronic baseline schedule:

- a) A baseline schedule in a bar chart format including the Administrative Identifier Information discussed in Section C.1.a on the first page of the schedule. For each activity on the chart, indicate the Activity ID, Activity Description, Original Duration, Remaining Duration, Total Float, Early Start Date, Early Finish Date, and Percent Complete. Use arrows to show the relationships among activities.
- b) A baseline schedule in a bar chart format, on paper. Identify the critical path of the project on the bar chart in red. The critical path is defined as; the longest path of activities in the project that determines the project completion date. The activities that make-up the critical path of activities are the "Critical Activities."

3. Submittal Cover Memo.

All submittals shall be accompanied with a brief cover memo containing:

- Identification of the submission as the Baseline Schedule
- Administrative Identifier Information (see section C.1.a)
- Any critical notes as determined by the Contractor

An example Cover Memo is provided in this note.

D. Float.

Use of float suppression techniques, such as; preferential sequencing (arranging critical path through activities more susceptible to Department caused delay), lag logic restraints, unrealistic activity durations, zero total or free float constraints, extending activity times, or imposing constraint dates other than as required by the contract, shall be cause for rejection of the project schedule or its updates. Schedules with negative float will also not be accepted.

1. Definitions of Float.

Total Float is the length of time along a given network path that the actual start and finish of activity(s) can be delayed without delaying the project completion date. Project Float is the length of time between the End Project Milestone and the Contract Completion Date.

2. Ownership of Float.

Float available in the schedule, at any time shall not be considered for the exclusive use of either the Department or the Contractor. During the course of contract execution, any float generated due to the efficiencies of either party is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. Efficiencies gained as a result of favorable weather within a Biweekly period, where the number of days of normally anticipated weather is less than expected, will also contribute to the Project Float. A schedule showing work completing in less time than the contract time, and accepted by the Department, will be considered to have Project Float. Project Float will be a resource available to both the Department and the Contractor. No time extensions will be granted nor delay damages paid unless a delay occurs which impacts the project's critical path, consumes all available float and extends the work beyond the Contract Completion Date.

3. Negative Float.

Negative float is not allowed. Schedules with negative float will not be accepted. Negative float will not be a basis for requesting time extensions. Any extension of time will be addressed in accordance with the Section F. Scheduled completion date(s) that extend beyond the contract (or phase) completion date(s) may be used in computations for assessment of liquidated damages. The use of this computation is not to be construed as an order by the Department to accelerate the project.

E. Biweekly Update Schedule.

A Biweekly update schedule is a schedule in which only progress is updated from the prior data date to the current data date. Work added and/or excusable delays encountered since the prior data date must be represented as a schedule revision as described in Section E.

1. Update Requirements.

Biweekly on a date set at the Preconstruction Conference and until Formal Acceptance, submit an updated schedule and all required information with a data date of the last day of the preceding biweekly submittal. The date for submission and data date may be adjusted to accommodate regularly scheduled progress meetings. Submit the Biweekly updated bar chart on paper and a copy of the updated schedule in electronic format in Section C.2. The Engineer shall “accept” or “reject” the schedule update within **10** days of receipt of the updated CPM schedule. The Engineer may withhold estimates if the updated schedule is not submitted as required by this section. For each updated schedule, identify the actual start and finish dates for all completed activities and the actual start date and remaining duration for all activities in progress. Provide a written narrative that identifies any changes or shifts in the critical path and submit reasons for the changes or shifts in the critical path.

Submit the following with each updated schedule:

- a) CPM Schedule in Bar Chart Format
- b) Electronic files (formatted as described above)

2. Submittal Cover Memo.

All update submittals shall be accompanied with a brief cover memo containing all the information require in the Baseline Submittal Cover Memo per section C.3 with the addition of:

- Baseline Report
 - Narrative of baseline expectations
 - Project completion status per baseline expectations
- Logic Report
 - Logic Modification Report per section F
 - Narrative of all logic changes and reasoning
 - Two separate CPM submissions; one reflecting the schedule without changes in logic, the other reflecting the proposed logic and the effects.
 - Description of fragnet required per section F
- Progress Report
 - Narrative of all schedule changes since last update
 - Details of each change including impact of change on the schedule, float consumption or addition, and reason causing change when float is consumed

F. Revisions.

The Work may require and/or the Contractor may make revisions to the CPM schedule. Addition of new activities (fragnets required) or new calendars or changes to existing activities, calendars or logic constitute a revision. All revisions must be reported in a Logic Modification Report. The Logic Modification Report is a separate CPM update which includes all the changes recommended by the contractor within the current Biweekly update schedule. It shall include a Narrative explanation of the necessary changes accompanying the Biweekly update schedule. Any revision which modifies the critical path or impacts an interim date or project completion date is considered a Logic Modification. A fragnet is defined as the sequence of new activities that are proposed to be added to the existing schedule. The fragnet shall identify the predecessors to the new activities and demonstrate the impacts to successor activities. If submitted as a fragnet, the Contractor shall compute two Finish Dates. The first Finish Date shall be computed without consideration of any impact by the fragnet. The second Finish Date shall be computed with consideration of any impact by the fragnet. The Contractor shall also submit a written narrative stating the reason for the proposed revisions. The Engineer shall “accept” or “reject” proposed revisions within ten days of receipt of appropriate schedules and narrative. All approved revisions will be incorporated into the Biweekly Update Schedule which will become the Revised Biweekly Update Schedule.

G. Time Extensions.

The Work may require and/or the Contractor may request an extension of the Completion Date. Perform the following analysis to compute the duration of the time extension. Submit two paper copies and two electronic copies of each analysis performed.

1. Determine project progress prior to circumstance(s) necessitating the time extension. Unless the Engineer requests an interim schedule updated to the date of the circumstance alleging to have caused delay, the previous accepted Biweekly update shall be used to display the prior progress of the project. This schedule is referred to as the Un-impacted Schedule
2. Prepare a fragmentary network (fragnet) depicting the circumstance that is believed to have delayed the project.
3. Insert the fragnet into the Un-impacted Schedule, run the schedule calculations and determine the finish date. This schedule is referred to as the Impacted Schedule.
4. Compare the Impacted Schedule finish date with the Un-impacted Schedule finish date in order to determine the duration of any warranted time extension.

Submit the impacted schedule with the request for time extension. Include a narrative report describing the effects of new activities and relationships to interim and contract completion dates. All time extensions approved by the Engineer will be incorporated into the Biweekly update with the fragnet used to determine impacts incorporated into the schedule.

H. Recovery Schedule.

If the Biweekly Update Schedule or Revised Biweekly Update Schedule projects a finish date for the Project more than 14 calendar days later than the Contract Completion Date, submit a recovery schedule showing a plan to finish by the current Completion Date. The acceptance of any schedule projecting a completion date for the Project beyond the Current Contract Completion Date does not constitute approval of a time extension or an order to accelerate. All changes to completion dates and orders to accelerate must be made via Change Order. The Department will withhold Estimates until the Engineer “accepts” the recovery schedule. The Engineer will use the schedule to evaluate time extensions and associated costs requested by the Contractor. In the event the current Completion Date is in dispute, the recovery schedule will need to be submitted once the dispute has been resolved.

I. Basis of Payment.

The Department will make partial payments according to Section 109.05 of the standard specifications and as modified by the following schedule:

1. The Department will release 50 percent of the lump sum amount bid for Project CPM Schedule to the Contractor with the first regular estimate payable after the Engineer has “accepted” the CPM Baseline schedule submission and the Department has received the scheduling software.
2. The Department will release an additional 25 percent of the lump sum amount bid for Project CPM Schedule to the Contractor with the first regular estimate payable after 50 percent of the original contract amount is complete.

3. The Department will release the remaining 25 percent of the lump sum amount bid for Project CPM Schedule to the Contractor with the first regular estimate payable after project completion.

The Department will pay for the accepted quantities at the contract price as follows:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
-----	Project CPM Schedule	Lump Sum

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

**SPECIAL NOTE FOR RAMMED AGGREGATE PIERS / INTERMEDIATE FOUNDATIONS
KY INTERCHANGE 222 OVER INTERSTATE-65
Hardin County; Item No. 04-20.01**

1.0 Description. This work shall consist of furnishing the material for and installation of rammed aggregate piers or equivalent foundation modification techniques, hereafter denoted as “intermediate foundations”, in locations as shown in the contract documents. In addition to ground modification, pre-drilling through the intermediate foundation will be required to place bridge deep foundation elements. It is assumed that pre-drilling for the bridge piles will be required after foundation modification but prior to the construction of the MSE wall. The design, installation and quality control of the proposed intermediate foundation system as specified in this document and the procedures for integrating the bridge deep foundation and the MSE wall intermediate foundation shall be the responsibility of the Contractor.

2.0 Purpose for Foundation Modification. The purpose for installing intermediate foundations on this project is to increase the nominal bearing resistance, control total and differential settlement, provide sufficient shear strength in the combination of friction angle and/or cohesion parameters to resist wall sliding, and provide sufficient shear strength for global stability beneath proposed MSE walls along Stations 653+33.28 to 659+74.02, 94’ Right and Stations 656+33.92 to 659+78.93, 94’ Left. The Intermediate foundation layer shall extend through an upper zone of low strength area soils to depth sufficient to provide enhanced soil strength adequate to support loads produced by the retaining walls detailed in the contract documents. The proposed foundation modification shall be designed to produce the following results:

Required Nominal Bearing Resistance for Intermediate Foundation Layer (lesser values permissible at locations indicated on contract documents):	12,750 psf
Minimum Aggregate Pier Area Coverage:	33%
Estimated Maximum Total Long-Term Settlement Along Wall Face:	≤ 2.5 –inch
Maximum Estimated Differential Settlement Front to Back, Along Face:	As specified in LRFD Sec. 11.10.4.1
Maximum Duration for 90% Settlement Through Modified Layers:	1 week
Minimum Design Life of Intermediate Foundation Layer:	75 years

3.0 Method. The Contractor may elect to utilize a rammed aggregate pier or approved equivalent intermediate foundation system, based upon the soil information provided in the contract documents, additional borings conducted by the Contractor, the Contractor's expertise, and other factors. The Contractor shall be responsible for the design of the intermediate foundation system selected and meeting the performance requirements specified herein. If the Contractor does not possess the capability or expertise to design and/or install the intermediate foundation system or they select a system that is considered proprietary, they shall make arrangements to contract the services of a licensed Contractor or other qualified personnel to perform the necessary design and/or installation. All intermediate foundation design documents shall be signed and sealed by a Professional Engineer licensed in the State of Kentucky. The procurement of any permits required for the installation of the intermediate foundations, including the disposal of any water or spoils shall be the sole responsibility of the Contractor.

4.0 Submittals. The Contractor shall submit seven copies of the following documents to the Department a minimum of 30 days prior to the installation of the intermediate foundation system they have selected.

a. Evidence of successful installation of the selected intermediate foundation system in the United States on five or more projects under similar conditions using the same proposed installation technique within the last 3 years. The documentation to be submitted includes references for the specific projects. The references consist of the Contracting Authority and Engineer, including names, addresses, and telephone numbers.

b. Construction drawings showing intermediate foundation locations, depths, and identification numbers. Construction drawings shall be signed and sealed by a Professional Engineer licensed in the State of Kentucky.

c. A description of the equipment and construction procedures to be used, including a plan to dispose of any water or spoils if applicable.

d. A proposed verification program, including proposed independent testing agency to be used (refer to section 5.0 Verification).

e. Certification that the project superintendent possesses a minimum of 5 years of method specific experience.

f. The source of the proposed intermediate foundation backfill material and the gradation that Contractor proposes to use. Upon approval of the backfill source and gradation, the Contractor shall maintain this gradation throughout the intermediate foundation installation.

g. A proposed plan for quality control throughout the installation procedure. This shall address issues such as control and measurement of column or pier diameter, lift thickness, and any

other pertinent information. The roles of the Contractor and Engineer shall be defined in the contract documents.

h. Results of slope stability analysis, anticipated settlements, and other calculations relating to performance of the intermediate foundation system. Also include the results of any additional soil borings.

5.0 Verification. A verification program designed, accomplished, and reported by the Contractor is required to measure the quality of the installed intermediate foundations. The proposed verification program is subject to approval by the Engineer. As a minimum, the verification program shall include the following.

a. Proposed means and methods for verification that design and performance criteria as stated in Section 2 have been satisfied. This may include, but shall not be limited to, modulus or load tests on individual elements and/or groups, soil borings, and other methods as required by the intermediate foundation system designer and approved by the Engineer.

b. Quality control program to verify that intermediate foundation elements are installed in accordance with the designer's specifications and the requirements as outlined in this Special Note. The quality control program shall include testing and/or observations by an independent testing laboratory as required in the contract documents.

c. Program to monitor performance of the intermediate foundation system during and after construction of the overlying embankment. This procedure may include installation of settlement plates, inclinometers, or other instrumentation. Instrumentation installed to monitor performance may also be used to aid in verification that design and performance criteria have been satisfied.

6.0 Daily Reports. During construction, the Contractor shall submit three copies of daily progress reports in writing to the Engineer detailing the following:

1. Intermediate foundation element identified by location number.
2. Date constructed.
3. Elevation of top and bottom of each Intermediate foundation element.
4. Average lift thickness.
5. Description of soil and groundwater conditions.
6. Details of obstructions, delays, and any unusual ground conditions.
7. Quantity of aggregate placed in each element.
8. Results of quality control testing.

7.0 Final Report. At the completion of the installation of the intermediate foundations, the Contractor shall submit a report to the Engineer detailing the equipment and methods used, production rates, the performance of the site during treatment, and that the site meets the

criteria established for this project. This report shall include a summary of all verification testing performed.

8.0 Pre-Construction Conference. A pre-construction conference shall be held at least five working days prior to the Contractor beginning intermediate foundation installation work at the site to discuss construction procedures, personnel, verification program, quality control, and equipment to be used. Those attending shall include:

1. The superintendent, on-site supervisors, independent testing agency representative, and all foremen in charge of intermediate foundation installation operations.
2. The Engineer, key inspection personnel, and representatives of the Department.

If the Contractor's key personnel change or if the Contractor proposes a significant revision of the approved intermediate foundation installation plan, an additional conference shall be held before any additional work is performed.

9.0 Basis of Acceptance. The basis of acceptance for the intermediate foundations will include visual inspection by the Engineer, who will consider results of all verification tests as well as consistent use of procedures, methods, and construction performance rates.

10.0 Materials. Intermediate foundation system backfill material shall be furnished by the Contractor. Aggregate used shall be as specified by design and demonstrated capable of meeting the requirements of Sections 1 and 2 of this document by both past performance and verification as outlined in Section 5 above.

11.0 Construction Requirements. The actual construction procedures shall be determined by the Contractor (Section 1.0). The following are minimum requirements, and should be referenced by the Contractor when preparing submittals. The submittal shall include the manufacturer's specifications for the proposed equipment to ensure that it has sufficient capacity to perform the intended function.

The site shall be graded and level as needed for proper installation of the intermediate foundation system selected by the contractor. This work shall be incidental to intermediate foundation installation.

The intermediate foundation elements shall be constructed in accordance with the contract documents, the Contractor's design plans and the following requirements.

- a. The drilled cavity excavation shall be in reasonably close conformity to the limits and construction stages shown on the plans. If temporary casing is needed to limit the sloughing of subsurface soils, the casing should be inserted to at least 2 feet beyond any sloughing strata. Casing of sufficient length should be available on site during drilling operations. Upon

extraction, the bottom of the casing should be maintained at not more than 1 foot to 2 feet above of level of the backfill.

b. Should any obstructions be encountered during installation that cannot be penetrated with reasonable effort, the Contractor shall remove such obstruction or the element shall be relocated or abandoned with the Engineer's approval. The treatment of any subsurface obstruction will be directed by the Engineer. If required by the Engineer; removal of subsurface obstructions, placement of additional elements or replacement elements will be incidental to the lump sum cost for "Intermediate Foundation Improvements" (Sec. 14.0 Basis of Payment, A.). Obstructions include but are not limited to boulders, timbers, concrete and utility lines which shall prevent placing the elements to the required depth, or shall cause the element to drift from the required location.

c. Backfill placement shall closely follow the excavation of each cavity. The backfill shall be placed in 1-foot thick lifts loose measure. Each lift should be rammed with a high-energy impact tamper to the satisfaction of the Engineer and as recommended in the licensed Contractor's design plans.

d. The Contractor shall provide a full-time quality control representative to verify all installation procedures.

12.0 Tolerances.

1. Horizontal Control: The center of the completed intermediate foundation elements shall be within 4 inches of the plan location.

2. Vertical Control: The completed intermediate foundation element shall not deviate from the vertical by more than 2 inches in 10 feet.

3. Diameter: The completed intermediate foundation element diameter shall not be more than 10 percent below the plan diameter.

a. If any intermediate foundation element falls outside these tolerances, an additional pier or column may be required to be installed at the Contractor's expense.

b. The Engineer may require additional rammed intermediate foundation elements at the Contractor's expense if the average effective diameter of any group of 50 consecutively installed intermediate foundation elements is less than the plan diameter.

4. Finish subgrade to within 3 inches of the proposed foundation plan elevation.

13.0 Method of Measurement.

A. The item for "Intermediate Foundation Improvements" will be the Lump Sum for completed and accepted rammed aggregate piers or stone columns in locations as shown in the contract documents. Backfill obstruction removal, and temporary casing will not be measured.

B. The item for “Intermediate Foundation Improvements Verification Testing” will be the Lump Sum.

14.0 Basis of Payment.

A. The Contractor will be paid the contract Lump Sum price for “Intermediate Foundation Improvements”. This payment shall be full compensation for design, field staking for the location of elements, and drilling; furnishing, transporting, placing and compacting intermediate foundation system backfill and associated work; and full-time quality control. Backfill obstruction removal, and temporary casing will not be paid for directly, but shall be considered incidental to the intermediate foundation improvements, as per plan.

B. The Contractor will be paid the contract Lump Sum price for “Intermediate Foundation Improvements Verification Testing”. This payment shall be full compensation for furnishing all of the labor and equipment, and installing additional intermediate foundation members to comply with the procedures as outlined in Section 5.0.

SPECIAL NOTE FOR MECHANICALLY STABILIZED EARTH RETAINING WALLS HARDIN COUNTY KENTUCKY

1.0 DESCRIPTION

1.01 General and Experience Requirements:

The work under this section consists of designing, furnishing all materials and constructing Mechanically Stabilized Earth (MSE) retaining walls in accordance with the current Standard Specifications, this Special Note, in compliance with the lines and grades, dimensions and details shown on the project plans, and as directed by the Engineer.

The Contractor shall provide the MSE wall designer with a complete set of project plans and specifications and shall ensure that the wall design is compatible with all other project features that can impact the design and construction of the wall. The following terms are used in this specification for identification of various entities for which the Contractor shall be fully responsible:

Term	Entity
Wall Manufacturer	The entity contractually retained by the contractor to provide materials and construction services for an accepted MSE wall system as identified in Subsection 1.02.
Wall Designer	The entity contractually retained by the contractor to provide design of an accepted MSE wall system as identified in Subsection 1.02. The wall designer may be a representative of the wall manufacturer.
Department / Engineer	Refers to the Kentucky Transportation Cabinet representative and/or a designated consultant acting on behalf of KYTC.

1.02 Accepted Systems:

The contractor shall provide an MSE Wall System that uses inextensible reinforcement and reinforced concrete panels or modular block and is one of the pre-approved systems below. Inclusion of a system on this list does not relieve the Contractor and/or wall manufacturer of the contractual responsibility to satisfy all specific requirements herein and/or elsewhere in the contract documents.

- Reinforced Earth (Reinforced Earth and Retained Earth)
- Hilfiker RSE
- Tricon Retained Soil Wall System
- ISOGRID Retaining Wall System
- Keystone Keysystem I
- Sine Wall MSE Panel System
- Sanders Pre-Cast Concrete Systems
- Vista Wall Systems – Stabilized Earth Wall: Grid Strip Reinforcing
- Vista Wall MSE Structural Wall System: galvanized welded-wire, grid-type soil reinforcement

Heights and lengths of earth retaining walls may vary from, but shall not be less than, those shown on the plans. The height and length to be used for any system shall be the minimum for that system that will effectively retain the earth behind the wall for the loading conditions and the contours, profile, or slope lines shown on the plans, or on the approved working drawings, and in accordance with all relevant

internal and external stability design criteria, but not more than the pre-approved height for the particular MSE wall system selected.

1.03 MSE Wall Design Engineer:

Requirements for the Wall Designer's **MSE Wall Design Engineer** (who may be employed by the wall manufacturer or may be a consultant) are:

- Licensed Professional Engineer in the Commonwealth of Kentucky with a minimum of 5 years of geotechnical and/or structural engineering experience.
- Design and/or construction experience on at least five (5) MSE Walls and a minimum of 50,000 square feet of MSE Wall completed in the past five (5) years. Experience on a Reinforced Soil Slope may be substituted for one wall and up to 10,000 square feet.
- Design experience on at least three (3) MSE Walls and a minimum of 30,000 square feet of MSE Wall on highway infrastructure projects using the wall system that will be used on this project completed in the past five (5) years.
- Completion of at least 15 Professional Development Hours related to the design and/or construction of MSE Walls in the past five (5) years. This training may consist of attendance at a related short course, conference, seminar, workshop, or college course. Include documentation of this training with the submittal of the Design Engineer's credentials.

1.04 Wall Aesthetics:

Wall aesthetics shall be as specified in the project documents and request for proposals.

1.05 Certifications:

- (A) Certification of Design Parameters: See Subsection 2.01 herein specified.
- (B) Certification of Materials: See Subsections 3.04, 3.07, 3.09 & 3.10 herein specified.

1.5 QUALITY CONTROL:

The Department will perform construction inspection for the MSE Walls. However, the Contractor will be required to proactively implement the quality control procedures described herein. All costs associated with MSE Wall Quality Control will be incidental to the cost of the wall.

1.51 MSE Wall Quality Coordinator:

The Contractor shall designate a MSE Wall Quality Coordinator who shall:

- have a minimum of 3 years of construction field experience,
- be responsible for ensuring that the Contractor's quality control procedures are implemented including maintaining and submitting the checklists required in Section 1.57, (but may have other duties and/or responsibilities),
- have sufficient authority to carry out quality coordinator responsibilities, and
- be in the field during MSE Wall construction.

1.52 Mandatory MSE Wall Construction Training:

The MSE Wall Designer or an approved appointee will provide training related to proper MSE Wall construction for Contractor and Department personnel. This training should occur after the contractor has selected the MSE Wall system and the Department has confirmed that the MSE Wall Design Engineer and Manufacturer's Technical Field Representative meet the specified requirements. The training will be

conducted in the District by the Manufacturer's Technical Field Representative or an outside consultant meeting the experience requirements of the Manufacturer's Technical Field Representative. The MSE Wall Construction Training is expected to last one full day. Department personnel who will attend will include project inspection personnel and may include other district and central office personnel. The following contractor personnel are required to attend:

- On-Site Supervisor in charge of MSE Wall construction
- MSE Wall Quality Coordinator
- At least one office management level person representing the MSE Wall contractor
- If the MSE Wall is to be constructed by a subcontractor, at least one management level representative (field or office) of the Prime Contractor
- Manufacturer's Technical Field Representative referenced in Section 1.55 herein

At least one week before the training begins, the Contractor shall submit a list of specific persons who plan to attend.

1.53 Quality Control Plan:

The contractor shall submit a Quality Control Plan to the Engineer for review and acceptance which details measurements and documentation (including daily documentation checklists) that will be maintained by the Contractor during construction to assure consistency in meeting specification requirements. The Contractor shall coordinate the development of the Quality Control Plan with the MSE Wall System Manufacturer and the MSE Wall Design Engineer. The Quality Control Plan shall be submitted to the Engineer for acceptance at least four weeks before beginning MSE wall construction.

1.54 MSE Pre-Activity Meeting:

A pre-activity meeting will be scheduled and shall occur after the Quality Control Plan has been submitted and accepted by the Engineer and no later than two (2) weeks prior to commencement of MSE wall construction activity. As a minimum, this meeting shall be attended by representatives of the Contractor and MSE Wall Sub-Contractor (including wall construction crew chiefs and MSE Wall Quality Coordinator), MSE Wall Manufacturer's Technical Field Representative, Department District personnel as designated by the Branch Manager for Project Delivery and Preservation, Central Office Construction, and Geotechnical Branch. No wall construction activity shall be performed until the contractor's final submittals have been approved as having satisfactorily resolved all review comments and the pre-activity meeting has been held.

1.55 Manufacturer's Technical Field Representative:

The MSE Wall System Manufacturer shall provide a technical field representative to provide assistance to the MSE Wall Contractor. The requirements for the **Manufacturer's Technical Field Representative** are:

- At minimum, an associate's or bachelor's degree with a major in a technical or scientific field such as engineering, engineering or construction technology, geology, physics, mathematics, etc.
- A minimum of five (5) years of technical experience related to engineering and/or construction.
- Construction experience on at least five (5) MSE Walls and a minimum of 50,000 square feet of MSE Wall completed in the past five (5) years. Experience on a Reinforced Soil Slope may be substituted for one wall and up to 10,000 square feet.

- Construction experience on at least three (3) MSE Walls and a minimum of 30,000 square feet of MSE Wall on highway infrastructure projects using the wall system that will be used on this project completed in the past five (5) years.
- Completion of at least ten (10) Professional Development Hours related to the design and/or construction of MSE Walls in the past five (5) years. This training may consist of attendance at a related short course, conference, seminar, workshop, or college course. Include documentation of this training with the submittal of the Technical Field Representative's credentials.

At least four weeks before beginning MSE wall construction, the Contractor shall submit documentation that the Technical Field Representative meets the above requirements.

The minimum required duties of the Manufacturer's Technical Field Representative are:

- Participate in the mandatory training referenced in Section 1.52 herein.
- Participate in the preparation of the Quality Control Plan referenced in Section 1.53 herein.
- Attend the MSE Pre-Activity Meeting referenced in Section 1.54 herein.
- Ensure that the contractor obtains all "Certificates of Analysis" required in Section 3.0 (Materials Requirements) of this Special Note.
- Review all "Certificates of Analysis" and supporting documentation and provide written documentation to the Contractor and Engineer that the reviews have been completed and that all materials meet the specified requirements.
- Review all Supervisor Checklists described in Section 1.57 herein.
- Be present at a minimum, during construction of the initial 10-foot height of the full length of wall for each wall system. Additionally the representative shall be present for the initial 10-foot height of the full length of wall for each wall system as constructed by each additional contractor, and as called upon thereafter by the Engineer, to assist the contractor and Engineer at no additional cost to the Agency.
- After each on-site visit, the Contractor is required to submit a letter to the Engineer written by the Manufacturer's Technical Field Representative documenting the observations of each visit with documentation that the MSE Wall Design Engineer has reviewed the letter.
- The manufacturer's technical field representative may recommend field changes subject to the approval of the MSE Wall Design Engineer and the Department. Any such changes shall be documented in writing within 24 hours of the approved changes. This written document shall be sealed by the MSE Wall Design Engineer prior to implementation of the changes.
- The Department reserves the right to discuss matters pertaining to this project directly with the technical field representative and to require the Contractor to call the technical field representative to the site for assistance at no additional cost to the Department if, in the opinion of the Engineer, the Contractor is not satisfactorily complying with the plans and specifications.

1.56 Certificates of Analysis:

The Contractor will be responsible for performing and/or subcontracting all testing required to produce the Certificates of Analysis required in Section 3.0 (Materials Requirements) of this Special Note and for submitting the Certificates to the Engineer as required.

1.57 Checklists:

The Contractor's MSE Wall On-Site Supervisor and MSE Wall Quality Coordinator shall complete and both sign the checklists below and submit them to the Engineer with copies to the Manufacturer's Technical Field Representative. The first three of these checklists can be found in FHWA Publication No. FHWA-NHI-10-025 *"Design and Construction of Mechanically Stabilized Earth Walls and Reinforced*

Soil Slopes – Volume II”, dated November 2009 (these tables are located in the appendix of this document).

Checklists	
Checklist Title	Submittal Requirements
Checklist for Drawing Review (FHWA Table 11-2)	At least two weeks before starting MSE wall construction
Checklist for Specification Compliance (FHWA Table 11-3)	Weekly
Checklist for Construction (FHWA Table 11-5)	Weekly
Quality Control Documentation (Quality Control Plan)	Daily

1.58 MSE Wall Design Engineer:

The MSE Wall Design Engineer will be required to play an active role in the construction of the MSE walls and to be available to answer any questions that may arise during construction. Specifically, the MSE Wall Design Engineer is required to:

- Assist the Contractor and Manufacturer’s Technical Field Representative with preparing the Quality Control Plan referenced in Section 1.53 herein.
- Make at least one site visit (4 hour minimum) while the Contractor is installing panels and reinforced fill material during the first 10 working days of panel and reinforced fill installation
- Review documentation of the Manufacturer’s Technical Field Representative’s site visits.

Additionally, the Design Engineer is required to attend the MSE Wall Construction Training and MSE Pre-Activity Meeting.

2.0 DESIGN SUBMITTALS (WORKING DRAWINGS AND DESIGN CALCULATIONS):

2.01 Submittals:

(A) General:

Design calculations and working drawings clearly showing conformance with the current Standard Specifications; AASHTO LRFD Bridge Design Specifications, current edition; KYTC Geotechnical Manual and project requirements shall be submitted for review. The format for the working drawings shall be in accordance with the Division of Structural Design's Guidance Manual. The first sheet shall be a title sheet.

Working drawings and design calculations shall be sealed by a licensed Professional Engineer in the Commonwealth of Kentucky. The MSE wall designer/supplier shall document on the working drawings all assumptions made in the design. The following statement shall be included near the P.E. seal on the first sheet of the working drawings: “All design assumptions are validated through notes or details on these drawings.”

The Department assumes no responsibility for errors or omissions in the working drawings. Acceptance of the final working drawings submitted by the contractor shall not relieve the contractor of any responsibility under the contract for the successful completion of the work. Construction of the wall shall

not commence until the contractor receives a written Notification to Begin MSE Wall Construction from the Engineer which will be issued once the complete wall package (drawings, calculations and construction procedures) is accepted. Fabrication of any of the wall components before the written Notification to Begin MSE Wall Construction shall be at the sole risk of the Contractor.

A Certificate of Analysis for the Reinforced Fill Material (See Sections 3.05 and 3.07 herein) may be required prior to final acceptance of the MSE Wall design.

(B) Review Submittals:

All review submittals shall be submitted electronically in pdf format through the Contractor to the Project Resident Engineer. The Project Resident Engineer shall forward the plans, calculations, and working drawings to the Department. Submittals may be directly emailed to applicable reviewers with the permission of the Contractor and Resident Engineer provided that the Contractor and Resident Engineer receive email copies of the submittals. Contact the Department before beginning any work on the wall designs and construction plans.

The submittals required shall include working drawings, the Contractor's and MSE Wall supplier's construction procedures, supporting design calculations, verification of experience, and a transmittal letter. The transmittal letter shall only list the documents included in the submittal. No technical information shall be included in the transmittal letter.

Working drawings, design calculations and MSE supplier's construction procedures modified as necessary by the contractor and Wall Designer for site-specific conditions shall be submitted to the Engineer for review. The Engineer shall have 30 calendar days after receiving the six complete sets to finish a review. The revised package shall be resubmitted to the Engineer for review. The Engineer shall have 15 calendar days to complete this review. This review process shall be repeated until the entire submittal is accepted by the Engineer. Additional time required by the Department to review resubmissions shall not be cause for increasing the number of contract working days. The additional work required by the contractor to provide resubmissions shall be at no cost to the Department.

The Department reserves the right to require the contractor to verify that the Reinforced Wall Fill Material meets all applicable requirement before final acceptance of the design.

(C) Final Submittals:

All final wall tracings, with drawing number, shall be submitted on 3 mil, or thicker, 22" X 36" mylar film. The final mylar tracings of the accepted working drawings submitted to the Division of Structural Design shall be dated, sealed, and signed on Sheet 1 by the licensed Professional Engineer performing the work. Nine copies of the accepted working drawings shall be submitted.

2.02 Working Drawings:

The contractor shall submit complete working drawings and specifications for each installation of the system. Working drawings shall include the following at a minimum:

- (1) Layout of the wall including plan and elevation views;
- (2) All design parameters and assumptions including design life;
- (3) Existing ground elevations and utilities impacted by the wall, and those that should be field verified by the contractor, for each location;
- (4) Complete details of all elements and component parts required for the proper construction of the system at each location and any required accommodations for drainage systems, foundation subgrades or other facilities shown on the contract documents;

- (5) The working drawing submittal shall clearly detail any special design requirements, if applicable. These special design requirements may include, but are not limited to: structural frames to place reinforcements around obstructions such as deep foundations and storm drain crossings, drainage systems, placement sequence of drainage and unit core fill with respect to reinforced (structure) fill behind a wall face using modular block facing units, guardrail post installation, scour protection, foundation subgrade modification, all corner details (acute, obtuse and 90 degrees), slip joints, joint details of MSE walls with other cast-in-place structures, wedges, shims and other devices such as clamps and bracing to establish and maintain vertical and horizontal wall facing alignments;
- (6) A complete listing of components and materials specifications; and
- (7) Other site-specific or project specific information required by the contract.

2.03 MSE Wall Design:

(A) General:

The working drawings shall be supplemented with all design calculations for the particular installation as required herein. Installations that deviate from the accepted design (by the Contractor's MSE Wall Design Engineer) shall be accompanied by supporting stability (internal; external; and global/overall and/or compound if required in the project documents) calculations of the proposed structure as well as supporting calculations for all special details not contained in the accepted design. The MSE wall designer/supplier shall note all deviations of the proposed wall design from the accepted design.

The proposed design shall satisfy the design parameters shown on the project plans and listed in this Special Note, and comply with the design requirements of AASHTO LRFD Bridge Design Specifications, current edition and the KYTC Geotechnical and Bridge Design Guidance Manuals. Unless otherwise specified in the contract, all structures shall be designed to conform to the requirements shown in Table 1 and other requirements specified herein.

If the designer uses software other than MSEW, a minimum of one analysis corresponding to the most critical design case for each MSE wall shall be submitted using MSEW software. Sample hand calculations containing a sketch, all external analysis for the design case, and internal analyses for a minimum of three reinforcement levels shall also be submitted for the most critical design case for each MSE wall.

Table 1 - MSE Wall Design Criteria and Parameters

Design Life	100 years
Friction angle of granular retained backfill (<u>where required</u>)	36°
Friction angle of MSE reinforced fill material	34° *
Total Unit weight of granular retained backfill	120 pcf
Total Unit weight of MSE reinforced fill material	120 pcf **
Minimum reinforcement length	Greater of 8 ft. or 0.7 times effective height
Friction angle for sliding calculation (through reinforced fill)	34° *
Resistance factor for sliding	As specified in AASHTO LRFD Bridge Design Specifications
Wall Eccentricity	Verify as specified in AASHTO LRFD Bridge Design Specifications, current edition
Bearing Resistance Factor	As specified in AASHTO LRFD Bridge Design Specifications
Surcharge Loading (due to vehicle loading behind the walls)	As specified in AASHTO LRFD Bridge Design Specifications
Minimum top of leveling pad embedment	2 ft. below final grade or as specified by the Geotechnical Report

* For internally reinforced fill material, a minimum friction angle of 34 degrees shall be substantiated by laboratory tests discussed in Subsection 3.05(D). If the measured friction angle in laboratory tests as per Subsection 3.05(D) is greater than 34 degrees and the fill material is well-graded according to the Unified Soil Classification System (USCS), then the design friction angle may be increased up to a maximum of 38 degrees. See Table 5.

** The Total Unit Weight of the reinforced fill material shall be substantiated by laboratory tests discussed in Subsection 3.05(F). If the Total Unit Weight (i.e. SSD Bulk Density) obtained from laboratory tests as per Subsection 3.05(F) varies by more than +/- 5.0 pcf from the design value, then the design must be adjusted accordingly or reinforced fill material falling within this range must be used. See Table 5.

“H” is the design height of the wall and is defined as the difference in elevation from the finished grade at the top of wall and the top of leveling pad. The length of reinforcement, “L”, is measured from the backface of the wall facing unit. If applicable, the length of grid type reinforcement is measured from the backface of the wall to the last full transverse member. “H’ “ is the effective height of the wall and is defined as: the design height “H” + (strap length “L” – distance from the wall face to the toe of slope) * tan (slope angle of backfill). In the case of horizontal backfill design height “H” equals effective height “H’ “. The top of the leveling pad shall always be below the minimum embedment reference line as indicated on the plans for that location. If applicable, the total base length for modular block facing units, BT, as measured from the front face of the wall is the length L as defined above plus the width of the modular block unit (the horizontal dimension of the block unit measured perpendicular to the wall face).

(B) Subsurface Drainage Systems:

Walls shall be provided with subsurface drainage measures as shown on the project plans and specifications. As a minimum, an underdrain system shall be provided for leading subsurface and surface water away from the reinforced fill material and outside the limits of the wall. Geocomposite drains, if used for subsurface drainage, shall be in accordance with Section 845 of the current Standard Specifications.

(C) Obstructions in Reinforced Fill:

(1) General:

Where obstructions, such as deep foundations or storm drains crossings, are located in the reinforced fill material zone, cutting of reinforcements to avoid obstructions shall not be permitted. A minimum offset of one diameter but not less than three (3) feet shall be maintained between the face of any pipe crossings and the back face of retaining wall panels. A minimum clearance of three (3) feet shall be maintained between the face of any other obstruction and the back face of retaining wall panels.

(2) Horizontal Deflection of Reinforcements:

In the horizontal plane at a reinforcing level, a deviation up to fifteen (15) degrees from the normal to the face of the wall may be allowed for strip reinforcement and bolted connection. This deviation is herein referred to as the splay angle. Grid reinforcements may not be splayed, unless connection has been specifically fabricated to accommodate a splay and connection detail has been approved by the Department. If used, the splay in grid reinforcement is limited to fifteen (15) degrees. For obstructions that cannot be accommodated with splayed reinforcement, structural frames and connections shall be required, and shall be designed in accordance with the AASHTO LRFD Bridge Design Specifications, current edition. The structural frame design shall be such that bending moments are not generated in the fill reinforcement or the connection at the wall face. The design, along with supporting calculations, shall be included in the working drawings.

(3) Vertical Deflection of Reinforcements:

Vertical deflection of the reinforcement to avoid obstructions such as utilities along the wall face shall be limited to a maximum of 15 degrees from normal to face of wall. Bends in the reinforcement shall be smooth and gradual to ensure that galvanization remains intact.

(D) Hydrostatic Pressures:

As determined by the Designer and/or as noted on the plans, for walls potentially subject to inundation, such as those located adjacent to rivers, canals, detention basins or retention basins. Effective unit weights shall be used in the calculations for internal and external stability beginning at levels just below the equivalent surface of the pressure head line. Where the wall is influenced by water fluctuations, the wall shall be designed for rapid drawdown conditions which could result in differential hydrostatic pressure.

(E) Acute Angle Corners:

Wall corners with an included angle of less than 70 degrees shall be designed for bin-type lateral pressures for the extent of the wall where the full length of the reinforcement cannot be installed without encountering a wall face. Acute angle corner structures shall not be stand-alone separate structures. Computations shall be provided that demonstrate deformation compatibility between the acute angle corner structure and the rest of the MSE wall. Full-height vertical slip joints shall be provided at the acute angle corner and after the last column of panels where full length of the reinforcements can be placed. The soil reinforcement attached to the slip joints shall be oriented perpendicular to the slip joint panels and shall be the full design length. Special connection and compaction details shall be provided on the working drawings.

(F) Spacing of Metallic Reinforcement for Flexible Face Wall Systems:

Permanent Flexible Face Wall Systems are not allowed.

(G) Fill Reinforcement for Modular Block Wall Systems:

The reinforcement lengths and percent coverage at a given reinforcement level shall be in accordance with the plans. All reinforcement shall be positively connected to the modular block facing units that is capable of resisting 100% of the maximum tension in the reinforcements at any level within the wall. Detailed documentation for connection strength shall be submitted as noted in Subsection 3.10. The vertical spacing of the reinforcement for walls with modular block facing units shall be as follows:

1. The first (bottom) layer of reinforcement shall be no further than 16 inches above the top of the leveling pad.
2. The last (top) layer of reinforcement shall be no further than 20 inches on the average below the top of the uppermost MBW unit.
3. The maximum vertical spacing between layers of adjacent reinforcement shall not exceed 32 inches. For walls deriving any part of their connection capacity by friction the maximum vertical spacing of the reinforcement should be limited to two times the block depth (front face to back face) to assure construction and long-term stability. The top row of reinforcement should be one-half the vertical spacing.

(H) Initial Batter of Wall:

The initial batter of the wall, both during construction and upon completion, shall be within the vertical and horizontal alignment tolerances included in this Special Note. The initial batter of the wall panels at the start of construction and the means and methods necessary to achieve the batter shall be provided on the working drawings. Subject to Engineer's approval, the initial batter of the wall panels may be modified at the start of construction by the manufacturer's field representative based on the evaluation of the reinforced fill material selected by the contractor. Any such changes shall be documented in writing within 24 hours of the approved changes. This written document shall be sealed by the manufacturer's design engineer who is a licensed Professional Engineer in the Commonwealth of Kentucky. Details of the wedges or shims or other devices, such as clamps and external bracing used to achieve or maintain the wall batter, and the details for removal of temporary wedges or shims shall be as shown on the working drawings and/or accompanying construction manual. Permanent shims shall comply with the design life criteria, and shall maintain the design stress levels required for the walls.

(I) Bridge Abutment Design Considerations:

Shallow Bridge Foundations supported by MSE wall systems are not allowed. All bridge loads must be supported by deep foundations.

3.0 MATERIAL REQUIREMENTS:

The contractor shall furnish the Engineer with Certificates of Analysis documenting that all materials meet the requirements herein.

3.01 Precast Concrete Elements:

Precast concrete shall attain a minimum 28-day compressive strength of 4,000 psi unless a higher strength is specified by the wall supplier. The concrete shall be air entrained containing $5.5 \pm 1.5\%$ entrained air at the time the concrete is placed in the forms. A proposed mix design shall be submitted.

Prior to casting, all embedded components shall be set in place to the dimensions and tolerances designated in the plans and specifications. Wall aesthetics shall be in accordance with project plans, special notes, and/or other applicable contract documents.

(A) Concrete Testing and Inspection:

Precast concrete elements shall be subjected to compressive strength testing and inspected for dimensional tolerances and surface conditions. Panels delivered to the site without Department approval will be rejected.

(B) Casting:

Precast concrete face panels shall be cast on a horizontal surface with the front face of the panel at the bottom of the form. Connection hardware shall be set in the rear face. The concrete in each precast concrete panel shall be placed without interruption and shall be consolidated by deploying an approved vibrator, supplemented by such hand tamping as may be necessary to force the concrete into the corner of the forms, and to eliminate the formation of stone pockets or cleavage planes. Form release agents shall be used on all form faces for all casting operations.

The contractor shall advise the Engineer of the starting date for concrete panel casting at least 14 calendar days prior to beginning the operation if the casting operation is within the State, or 21 calendar days if the casting operation is outside the State.

(C) Finish:

(1) Non-Exposed Surfaces:

Rear faces of precast concrete panels shall be a face floated surface finish and screeded to eliminate open pockets of aggregate and surface distortions in excess of $\frac{1}{4}$ inch.

(2) Exposed Surfaces:

The type of finish required on exposed surfaces shall be as shown in the plans.

(a) Exposed Aggregate Finish:

- (1) Prior to placing concrete, a set retardant shall be applied to the casting forms in accordance with the manufacturer's instructions.

- (2) After removal from the forms and after the concrete has set sufficiently to prevent its dislodging, the aggregate shall be exposed by a combination of brushing and washing with clear water. The depth of exposure shall be between 3/8 inch and 1/2 inch.
- (3) An acrylic resin sealer consisting of 80 percent thinner and 20 percent acrylic solids by weight shall be applied to the exposed aggregate surface at a rate of one (1) gallon per 250 square feet.

(b) Concrete Panel Finish:

Concrete panel finish shall be in accordance with the plans and specifications. A sample of the proposed finish consisting of four full-sized panels shall be fabricated for inspection by the Engineer. Fabrication of the remaining panels is not authorized until the Engineer has inspected the sample panels and approved the finish as acceptable.

(D) Tolerances:

Connection device placement shall be within ± 1 inch of the dimensions shown on the drawings. Panel squareness as determined by the difference between the two diagonals shall not exceed 1/2 inch.

(E) Identification and Markings:

The date of manufacture, the production lot number, and the piece mark shall be inscribed on a non-exposed surface of each element.

(F) Handling, Storage and Shipping:

All panels shall be handled, stored, and shipped in such a manner to eliminate the dangers of chipping, discoloration, cracks, fractures, and excessive bending stresses. Panels in storage shall be supported in firm blocking to protect panel connection devices and the exposed exterior finish. Storing and shipping shall be in accordance with the manufacturer's recommendations.

(G) Compressive Strength:

Precast concrete elements shall not be shipped or placed in the wall until a compressive strength of 3,400 pounds per square inch has been attained. The facing elements shall be cast on a flat and level area and shall be fully supported until a compressive strength of 1,000 pounds per square inch has been attained.

(H) Precast Concrete Panel Joints:

(1) General:

Where the wall wraps around an inside corner, a corner block panel shall be provided with flange extensions that will allow for differential movement without exposing the panel joints. The back face of vertical and horizontal joints shall be covered with geotextile filter. Joint filler, bearing pads, and geotextile filter shall be as recommended by the wall manufacturer and shall meet the requirements shown on the approved working drawings.

If required, as indicated on the plans, flexible open-cell polyurethane foam strips shall be used for filler for vertical joints between panels, and in horizontal joints where pads are used.

All joints between panels on the back side of the wall shall be covered with a Type IV geotextile fabric meeting the requirements of Section 843 of the current Standard Specifications. The minimum width shall be one (1) foot.

(2) Bearing Pads:

All horizontal and diagonal joints between panels shall include bearing pads. Bearing pads shall meet or exceed the following material requirements:

- Preformed EPDM (Ethylene Propylene Diene Monomer) rubber pads conforming to ASTM D 2000 Grade 2, Type A, Class A with a Durometer Hardness of 70.
- Preformed HDPE (High Density Polyethylene) pads with a minimum density of 0.946 grams per cubic centimeter in accordance with ASTM D 1505.

The stiffness (axial and lateral), size, and number of bearing pads shall be determined such that the final joint opening shall be $\frac{3}{4} \pm \frac{1}{8}$ inch unless otherwise shown on the plans. The MSE wall designer shall submit substantiating calculations verifying the stiffness (axial and lateral), size, and number of bearing pads assuming, as a minimum, a vertical loading at a given joint equal to 2 times the weight of facing panels directly above that level. As part of the substantiating calculations, the MSE wall designer shall submit results of certified laboratory tests in the form of vertical load-vertical strain and vertical load-lateral strain curves for the specific bearing pads proposed by the MSE wall designer. The vertical load-vertical strain curve should extend beyond the first yield point of the proposed bearing pad.

3.02 Steel Components:**(A) Galvanization:**

Fill reinforcement steel shall be hot-dip galvanized in accordance with AASHTO M 111 (ASTM A123). Connection hardware steel can be galvanized by hot-dipping or other means, provided the method satisfies the requirements of AASHTO M 111 (ASTM A123). A minimum galvanization coating of 2.0 oz/ft² (605 g/m²) or 3.4 mils (85 μm) thickness is required. Fill reinforcement steel shall be adequately supported while lifting and placing such that the galvanization remains intact. Steel members with damaged (peeled) galvanization shall be repaired according to ASTM A780 and as specified in approved working drawings, at no additional cost to the Department.

(B) Metallic Reinforcing Strips and Tie Strips:

Reinforcing strips shall be hot-rolled from bars to the required shape and dimensions. The strips' physical and mechanical properties shall conform to the requirements of ASTM A572, Grade 65 minimum. Tie strips shall be shop fabricated of hot-rolled steel conforming to the requirements of ASTM A1101, Grade 50 minimum. The minimum bending radius of the tie strips shall be $\frac{3}{8}$ inch. Galvanization shall be applied after the strips are fabricated, inclusive of punch holes for bolts as shown on approved drawings.

(C) Metallic Reinforcing Mesh:

Reinforcing mesh shall be shop fabricated of cold-drawn steel wire conforming to the requirements of AASHTO M 32, and shall be welded into the finished mesh fabric in accordance with AASHTO M 55. Galvanization shall be applied after the mesh is fabricated. A minimum galvanization coating of 2.0 oz/ft² (605 g/m²) or 3.4 mils (85 μm) thickness is required.

(D) Connector Pins:

Connector pins and mat bars shall be fabricated and connected to the fill reinforcement mats as shown in the approved working drawings. Connector bars shall be fabricated of cold drawn steel wire conforming

to the requirements of AASHTO M 32.

(E) Welded Wire Fabric:

All welded wire fabric shall conform to the requirements of AASHTO M 32, AASHTO M 55, and the approved working drawings. Welded wire fabric shall be galvanized in conformance with the requirements of ASTM A123.

(F) Fasteners:

Connection hardware shall conform to the requirements shown in the approved working drawings. Connection hardware shall be cast in the precast concrete panels such that all connectors are in alignment and able to transfer full and even load to the fill reinforcement. Once the reinforcement is connected to the panel, the amount of slack shall not exceed 1/8 inch between the connector and the reinforcement during field installation. (If wedges are to be used to remove slack, the size, shape, and installation procedure with illustrations shall be included on the drawings and in the construction procedures.) Fasteners shall be galvanized and conform to the requirements of AASHTO M 164 or equivalent.

3.03 Geosynthetic Reinforcement:

Geosynthetic fill reinforcement is not allowed.

3.04 Certificate of Analysis for Fill Reinforcements:

For metallic wall reinforcement, a mill test report containing the ultimate tensile strength for the fill reinforcement shall be included in the certification. For metallic wall reinforcement, a mill test report containing the galvanization coverage shall be included in the certification. For metallic mesh wall reinforcement, a mill test report containing the ultimate weld strength for the fill reinforcement shall be included in the certification.

3.05 Reinforced Wall Fill Material:

Provide internally reinforced wall fill material consisting of quarry-processed limestone from a Department-approved quarry meeting all applicable general requirements of Section 805 of the Standard Specifications, current edition, and requirements herein. Provide material meeting the specific requirements for "Reinforced Fill Material" in Section 805 of the Standard Specifications, current edition, defined as "Non-Erodible" according to Section 805, and meeting all other requirements herein. Approval of the material source by the Department is required prior to beginning MSE wall construction.

(A) General:

Reinforced wall fill material shall be free of shale, organic matter, mica, gypsum, smectite, montmorillonite, or other soft poor durability particles. No salvaged material, such as asphaltic concrete millings or Portland Cement Concrete rubble, etc., will be allowed.

(B) Soundness and Shale:

The reinforced fill material shall have a soundness loss of 30 percent or less when tested in accordance with AASHTO T104 using a magnesium sulfate solution with a test duration of four cycles. Alternatively, the material shall have a soundness loss of 15 percent or less when tested in accordance with AASHTO T104 using a sodium sulfate solution with a test duration of five cycles. A maximum of 2.0% shale is permitted as determined by KM 64-604.

(C) Gradation:

Gradations will be determined per AASTHO T27 and shall be in accordance with Table 2, unless otherwise specified.

Table 2	
REINFORCED FILL GRADATION REQUIREMENTS	
Sieve Size	Percent Passing
4 inch	100
2 inch	40 – 90
No. 4	0 - 10
No. 200	0 – 5
This is the same gradation as required in Section 805.11 of the Standard Specifications except the requirement for the 2 inch sieve has been added.	
Size # 23 in the Standard Specifications falls within these gradation limits.	

(D) Internal Friction Angle Requirement:

The reinforced wall fill material shall exhibit an effective (drained) angle of internal friction of not less than 34 degrees, as determined by performing a Direct Shear Test in accordance with AASHTO T236 or ASTM D3080. A minimum of three (3) points (i.e. three normal stresses) is required to constitute a complete test.

The direct shear test shall be performed on the portion finer than the 1-inch sieve. In order to comply with the test method, a minimum 12-inch diameter circular box or minimum 12-inch square box is required. The sample shall be compacted directly in the shear device at the saturated surface dry (SSD) condition and in general accordance with the rodding procedure in AASHTO T-19.

(E) Electrochemical Requirements:

The reinforced wall fill material shall meet the electrochemical requirements of Table 3.

Table 3		
ELECTROCHEMICAL REQUIREMENTS FOR METALLIC REINFORCEMENTS		
Characteristic	Requirement	Test Method
Resistivity	> 3,000 ohm-cm	AASHTO T-288
pH	5.0 to 10.0	AASHTO T-289
Chlorides	< 200 ppm	ASTM D4327
Sulfates	< 1000 ppm	ASTM D4327
Organic Content	< 1.0 %	AASHTO T-267
* If the resistivity is greater or equal to 5,000 ohm-cm, the chloride and sulfate requirements may be waived.		

Table 4 – VACANT

(F) Saturated Surface Dry (SSD) Bulk Density:

The Bulk Density of the Reinforced Fill Material shall be obtained in accordance with AASHTO T19. The Bulk Density at the oven-dry condition shall then be corrected using the Absorption determined according to AASHTO T-85 to determine the SSD Bulk Density, which shall be within +/- 5.0 pcf of the

design total unit weight of MSE reinforced fill material or the design shall be adjusted. (See Table 1.)

(G) Limits of Reinforced Wall Fill Material:

The reinforced fill material shall extend to at least one (1) foot beyond the free end of the reinforcement. If applicable, back-to-back walls wherein the free ends of the reinforcement of the two walls are spaced apart less than or equal to one-half the design height of the taller wall, reinforced wall fill material shall be used for the space between the free ends of the reinforcements as well. The design height of the wall is defined as the difference in elevation between finished grade at top of wall and the top of leveling pad. The top of the leveling pad shall always be below the minimum embedment reference line as indicated on the plans for the location under consideration.

3.06 Granular Embankment for Foundation and Retained Backfill:

Provide granular foundation material and granular external retained backfill consisting of “Granular Embankment” meeting the material requirements of Section 805 in the current edition of the Standard Specifications and defined as “Non-Erodible” according to Section 805. If required by design, the extent of the granular foundation material and granular external retained backfill shall be shown in the Geotechnical Notes. Contrary to the Standard Specifications, no natural sand is permitted. Also contrary to the Standard Specifications, the maximum size limit for “Granular Embankment” is 4 inches where shown in the Geotechnical Sheets. Approval of the material source by the Department is required prior to beginning placement of this material.

3.07 Sampling & Testing of Reinforced Wall Fill and Granular Embankment Materials

(A) Reinforced Wall Fill:

To obtain source approval, the contractor shall furnish the Engineer with an 80-pound representative sample of the reinforced wall fill material and a Certificate of Analysis containing results of all tests referenced in Table 5 at least four weeks prior to beginning construction of the MSE wall.

During construction, the reinforced fill material shall be sampled and tested by the Engineer for acceptance and quality control testing. A new sample and Certificate of Analysis shall be provided any time the material and/or source changes.

Table 5 - Sampling Frequency for Reinforced Wall Fill Material

Function	Tests	Frequency
Source Approval Testing by Contractor and/or its Consultant(s)	Soundness (AASHTO T104)* % Shale (KM 64-604)* Gradation (AASHTO T27)* Direct Shear (AASHTO T236 or ASTM D3080)* Organic Content (AASHTO T267)* SSD Bulk Density (AASHTO T19 & T85)* Resistivity (AASHTO T288)** pH (AASHTO T289)** Chlorides and Sulfates (ASTM D4327)**	At least four (4) weeks prior to beginning MSE wall construction and once per material change and/or change in source. Except for Direct Shear, one test is valid for up to 10,000 ft ² of MSE wall area if there is no material change or change in source. ***** Generally, only one Direct Shear test is required unless there is a change in material, source, or gradation.
Acceptance and Quality Control Testing by Department	Gradation (AASHTO T27) % Shale (KM 64-304) At the discretion of the Engineer. Any other applicable requirements of Section 805 of the current Standard Specifications	One per 2,000 cubic yards at job site. (A change of more than +/- 5.0 percent passing any sieve size <u>will</u> require additional SSD Bulk Density testing and <u>may</u> require additional Direct Shear testing, both by the Contractor.) As required by the current Materials Field Sampling and Testing Manual, Standard Specifications, and/or other Department policy.
<p>* The laboratory performing these tests must be accredited by the AASHTO Materials Reference Laboratory (AMRL) for the tests they perform. AMRL accreditation for AASHTO T104 & T27 is required to perform KM 64-604.</p> <p>** Although accreditation for the specific test methods may not be available, the laboratory performing these tests must be accredited or certified by one of the organizations below. A laboratory's accreditation or certification status does not relieve the laboratory of its responsibility to perform the tests in accordance with the specified methods.</p> <ul style="list-style-type: none"> • AMRL - Soil and/or Aggregate (Resistivity and pH only) • American Association for Laboratory Accreditation (A2LA) - Chemical and/or Environmental • Kentucky Division of Water - Drinking Water Chemical Analyses <p>The Contractor may consult the Geotechnical Branch to ensure that a lab is accredited or certified.</p> <p>***** e.g. 1 to 10,000 ft² of wall requires 1 test, 10,001 to 20,000 ft² requires 2 tests, etc.</p>		

(B) Granular Embankment Material for Foundation and Retained Backfill:

To obtain source approval, the contractor shall furnish the Engineer with an 80-pound representative sample of the Granular Embankment material and a Certificate of Analysis at least four weeks prior to beginning Granular Embankment construction.

**Table 6
Sampling Frequency for Granular Embankment for Foundation and Retained Backfill**

Function	Frequency
Source Approval	At least four weeks prior to beginning granular embankment construction and once per material change and/or change in source.
Acceptance and Quality Control	In accordance with standard procedures for "Granular Embankment".

3.08 Cast-in-Place Concrete:

Cast-in-place concrete shall be Class A, except that the leveling pads shall be Class B, both in accordance with the current Standard Specifications.

3.09 Modular Block (Segmental) Facing Units:

This section covers dry-cast hollow and solid concrete masonry structural retaining wall units, machine made from Portland cement, water, and suitable mineral aggregates. The units are intended for use as facing units in the construction of mortarless, modular block walls (MBW) also known as segmental retaining walls (SRW). Metallic reinforcement specified in Section 3.02 shall be used as reinforcement in the reinforced (structure) wall fill zone.

(A) Casting:

Cementitious material in the modular block facing unit shall be Portland cement conforming to the requirements of ASTM C 150. If fly ash is used it shall not exceed 20% by weight of the total cement content and shall conform to ASTM C 618. Aggregates used in concrete blocks shall conform to ASTM C 33 for normal weight concrete aggregate. Efflorescence control agent shall be used in concrete mix design to prevent efflorescence on the block.

The contractor shall advise the Engineer of the starting date for concrete panel casting at least 14 calendar days prior to beginning the operation if the casting operation is within the State, or 21 calendar days if the casting operation is outside the State.

(B) Physical Requirements:

At the time of delivery to the work site, the modular block facing units shall conform to the following physical requirements:

- 1) Minimum required compressive strength of 4,000 psi (average 3 coupons)
- 2) Minimum required compressive strength of 3,500 psi (individual coupon)
- 3) Minimum oven dry unit weight of 125 pcf
- 4) Maximum water absorption of 5 % after 24 hours
- 5) Maximum number of blocks per lot of 2,000. Tests on blocks shall be submitted at the frequency of one set per lot.

Acceptance of the concrete block, with respect to compressive strength, water absorption and unit weight, will be determined on a lot basis. The lot shall be randomly sampled and tested in accordance with ASTM C140. As no additional expense to the Department, the manufacturer shall perform the tests at a Department approved laboratory and submit the results to the Engineer for approval. Compressive strength test specimens shall be cored or shall conform to the saw-cut coupon provisions of ASTM C 140. Block lots represented by test coupons that do not reach an average compressive strength of 4,000 psi will be rejected.

(C) Freeze-Thaw Durability:

In areas where repeated freezing and thawing under saturated conditions occur, the units shall be tested to demonstrate freeze-thaw durability in accordance with Test Method ASTM C1262. Freeze thaw durability shall be based on tests from five specimens made with the same materials, concrete mix design, manufacturing process, and curing method, conducted not more than 18 months prior to delivery. Specimens used for absorption testing shall not subsequently be used for freeze-thaw testing. Specimens shall comply with either or both of the following acceptance criteria depending on the severity of the project location as determined by the Department:

- 1) The weight loss of four out of five specimens at the conclusion of 150 cycles shall not exceed 1% of its initial weight when tested in water.
- 2) The weight loss of each of four out of the five test specimens at the conclusion of 50 cycles shall not exceed 1.5% of its initial mass when tested in a saline (3% sodium chloride by weight) solution.

(D) Tolerances for Modular Block Dimensions:

Modular blocks shall be manufactured within the following tolerances:

- 1) The length and width of each individual block shall be within $\pm 1/8$ inch of the specified dimension. Hollow units shall have a minimum wall thickness of $1\frac{1}{4}$ inches.
- 2) The height of each individual block shall be within $\pm 1/16$ inch of the specified dimension.
- 3) When a broken (split) face finish is required, the dimension of the front face shall be within ± 1.0 inch of the theoretical dimension of the unit.

(E) Finish and Appearance:

Units that indicate imperfect molding, honeycomb or open texture concrete and color variation on front face of block due to excess form oil or other reasons shall be rejected. All units shall be visually efflorescence free. All units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the construction. Minor cracks (e.g. no greater than $1/50$ inch in width and no longer than 25% of the unit height) incidental to the usual method of manufacture or minor chipping resulting from shipment and delivery, are not grounds for rejection.

The exposed faces shall be free of chips, cracks or other imperfections when viewed from a distance of 30 feet under diffused lighting. Up to five (5) percent of a shipment may contain slight cracks or small chips not larger than 1.0 inch.

Color and finish shall be as shown on the plans and shall be erected with a running bond configuration.

(F) Pins:

If pins are required to align modular block facing units, they shall consist of a non-degrading polymer or hot-dipped galvanized steel and be made for the express use with the modular block units supplied. Connecting pins supporting the reinforcement shall be hot-dipped galvanized steel and be capable of holding the reinforcement in the proper design position during backfilling.

(G) Cap Units and Adhesive:

The cap unit connection to the block unit immediately under it shall be of a positive interlocking type and not frictional. Cap units shall be cast to or attached to the top of modular block facing units in strict accordance with the requirements of the manufacturer of the blocks and the adhesive. The surface of the block units under the cap units shall be clear of all debris and standing water before the approved adhesive is placed. Contractor shall provide a written 10-year warranty, acceptable to Owner, that the integrity of the materials used to attach the cap blocks will preclude separation and displacement of the cap blocks for the warranty period.

(H) Unit (Core) Fill:

Unit (core) fill is defined as free-draining, coarse grained material that is placed within the empty cores of the modular block facing units. Unit (core) fill shall be a well graded crushed stone or granular fill meeting the gradation shown in Table 7. Gradation for unit fill shall be tested at the frequency of 1 test per 50 yd³

at the job site and for every change in the material source.

**Table 7
Gradation for Unit (Core) Fill**

U.S. Sieve Size	Percent Passing
1½-inch	100
1-inch	75-100
¾-inch	50-75
No. 4	0-60
No. 40	0-50
No. 200	0-5

3.10 Certificate of Analysis for Modular Block Connection:

For modular block facing units, a certification shall be provided with detailed calculations according to AASHTO and the results of laboratory test results performed in accordance with Section C.3 in Appendix B of FHWA NHI-10-025, dated 2009 (“Mechanically Stabilized Earth Walls and Reinforced Soil Slopes – Volume II”). Such certification shall demonstrate that all connections, including block-to-reinforcement and block-to-block connections, and all related components meet or exceed the current AASHTO 100 year design life requirements and are capable of resisting 100% of the maximum tension in the soil reinforcements at any level within the wall. Long-term connection testing for extensible reinforcements is also required. The effect of wall batter and normal pressures representative of the full range of wall configurations and heights shall be incorporated in the tests.

4.0 CONSTRUCTION REQUIREMENTS:

Construction of MSE walls may be subject to special requirements as specified in the Geotechnical Report and Geotechnical MSE Wall Note Sheets developed by the Design Build Team. These requirements may include but are not limited to: monitoring devices (refer to section 4.5), phased panel and reinforced fill construction, waiting period intervals and foundation modification.

4.01 Excavation:

The contractor shall ensure that temporary slopes are safe during the period of wall construction, and shall adhere to all applicable local, state and federal regulations. During construction of the MSE walls, the contractor shall design, construct, maintain and, when called for, remove temporary excavation support systems (shoring). Temporary excavation support systems may be left in place if approved by the Engineer. The back slope of the excavation shall be benched. Where shoring is required, the contractor shall submit the shoring design, and a plan outlining construction and removal procedures, to the Engineer for review and approval prior to proceeding with the work. Shoring plans shall be prepared and submitted as part of the working drawings and shall bear the seal and signature of a licensed Professional Engineer in the Commonwealth of Kentucky. All shoring design shall include appropriate input and review by a geotechnical engineer.

4.02 Foundation Preparation:

(A) General:

If required, specific ground improvement requirements shall be outlined in the Geotechnical Report and the Geotechnical Note Sheets.

In general the following applies:

The foundation for the reinforced wall fill and retained backfill shall be graded level for the entire area of the base of such backfills, plus an additional 12 inches on all sides, or to the limits shown in the plans.

If soil reinforcement components are to be positioned on native soil, the top one (1) foot of native soil shall meet the requirements of the reinforced backfill material specified in Subsection 3.05.

Foundation replacement material shall consist of "Granular Embankment" meeting the requirements of Section 3.06 herein. The material shall be compacted in accordance with Section 206 of the current Standard Specifications except that the maximum loose lift thickness (prior to compaction) is 12 inches. Type IV Geotextile Fabric shall be placed between the existing embankment material and the proposed "Granular Embankment" in accordance with Sections 214 and 843 of the Standard Specifications.

(B) Proof-Rolling:

The contractor shall perform proof-rolling to evaluate the stability and uniformity of the subgrades on which the MSE structure will be constructed. Proof rolling shall be performed on the entire areas at the following locations:

- 1) At the bottom of the overexcavation and recompaction zones.
- 2) At the bottom of the overexcavation and replacement zones.
- 3) At the base of all walls.
- 4) At the top of native soil layers and/or existing fill material that has been scarified, moisture-conditioned, and recompacted (if different from the bottom of the overexcavation and recompaction zones, or overexcavation and replacement zones).

Proof-rolling shall be done immediately after subgrade compaction while the moisture content of the subgrade soil is near optimum, or at the moisture content that was used to achieve the required compaction. Proof-rolling shall be performed again within one day prior to beginning MSE Wall construction.

If proof-rolling is performed after installation of pipe underdrains, the proof-roller shall not be used within 1½ feet of the underdrains.

Proof-rolling shall be performed with a pneumatic-tired tandem axle roller with at least three wheels on each axle, a gross weight of 25 tons (50,000 pounds), a minimum tire pressure of 75 pounds per square inch, and a minimum rolling width of 75 inches. A Caterpillar PS-300B (or PF-300B), Ingersoll-Rand PT-240R, BOMAG BW24R, Dynapac CP271, or equipment with equivalent capabilities shall be used for proof-rolling.

Proof-rolling equipment shall be operated at a speed between 1.5 and 3 miles per hour, or slower as required by the Engineer to permit measurements and/or observations of the deformations, ruts and/or pumping.

Proof-rolling shall be carried out in two directions at right angles to each other with no more than 24 inches between tire tracks of adjacent passes. The contractor shall operate the proof-roller in a pattern that readily allows for the recording of deformation data and complete coverage of the subgrade.

The following actions shall be taken based on the results of the proof-rolling activity:

- 1) Rutting (i.e. deformation that does not rebound) less than ¼-inch – The grade is acceptable.
- 2) Rutting greater than ¼-inch and less than 1½ inches – The grade shall be scarified and re-compacted.
- 3) Rutting greater than 1½ inches – The compacted area shall be removed and reconstructed.

- 4) Pumping (i.e. deformation that rebounds, or materials that are squeezed out of a wheel's path) greater than one (1) inch – The area shall be remediated as directed by the Engineer.

The contractor shall be responsible for maintaining the condition of the approved proof-rolled soils throughout the duration of the retaining wall construction. Wall construction shall not commence until the foundation subgrade has been approved by the Engineer.

4.03 Concrete Leveling Pad:

Leveling pads shall be constructed of unreinforced Class B concrete meeting the requirements of Section 601 of the current Standard Specifications as shown on the working drawings. Gravel leveling pads shall not be allowed. The elevation of the top of leveling pad shall be within $\frac{1}{8}$ inch from the design elevation when measured by a straightedge over any 10-foot run of the leveling pad.

The minimum width of the leveling pad shall be the width of the facing unit plus 8-inches. The centerline of the leveling pad shall be within 1 inch from design location. When the facing units are centered on the leveling pad, the leveling pad shall extend approximately 4-inches beyond the limits of the facing unit as measured in the direction perpendicular to the face of the wall.

Cast-in-place leveling pads shall be cured for a minimum of 48 hours before placement of wall facing units. A geotextile shall be applied over the back of the area of any openings greater than $\frac{1}{4}$ inch between the facing units and leveling pad steps. The geotextile shall extend a minimum of six (6) inches beyond the edges of the opening. The opening shall be filled with Class B concrete, or shall be concurrently backfilled on both sides with soil.

4.04 Subsurface Drainage:

Prior to wall erection, the contractor shall install a subsurface drainage system as shown on the working drawings.

4.05 Wall Erection:

(A) General:

Walls shall be erected in accordance with the approved manufacturer's written construction procedures. The contractor shall be responsible for ensuring that a field representative from the manufacturer is available at the site during construction of the initial 10-foot height of the full length of wall for each wall system. Additionally the representative shall be present for the initial 10-foot height of the full length of wall for each wall system as constructed by each additional contractor, and as called upon thereafter by the Engineer, to assist the contractor and Engineer at no additional cost to the Department. All temporary construction aids (e.g., wedges, clamps, etc.) shall be in accordance with the manufacturer's recommendations.

(B) Placement Tolerances for Walls with Precast Facing:

For walls with rigid facing, such as precast concrete panels, the panels shall be placed such that their final position is vertical or battered as shown on the working drawings. As wall fill material is placed, the panels shall be maintained in the correct vertical alignment by means of temporary wedges, clamps, or bracing as recommended by the manufacturer. A minimum of two, but not more than three, rows of panel wedges shall remain in place at all times during wall erection. Wedges shall be removed from lower rows as panel erection progresses, so as to prevent chipping or cracking of concrete panels. The contractor shall repair any damage to erected concrete panels as directed by the Engineer and to the Engineer's satisfaction. No external wedges in front of the wall shall remain in place when the wall is complete.

Erection of walls with panel facing shall be in accordance with the following tolerances:

- Vertical and horizontal alignment of the wall face shall not vary by more than 3/4 inch when measured along a 10-foot straightedge.
- The overall vertical tolerance (plumbness) of the finished wall shall not exceed 1/2 inch per 10 feet of wall height. Negative (outward leaning) batter is not acceptable.
- The maximum permissible out of plane offset at any panel joint shall not exceed 3/8 inch.
- The final horizontal and vertical joint gaps between adjacent facing panel units shall be within 1/8 inch and 1/4 inch, respectively, of the design final joint opening per the approved calculations required in Subsection 3.01(H).

Wall sections not conforming to these tolerances shall be reconstructed at no additional cost to the Department.

(C) Placement Tolerances for Permanent Walls with Flexible Facing:

Permanent Flexible Facing is not allowed.

(D) Placement Tolerances for Modular Block Units:

Erection of walls with Modular Block Units shall be as per the following requirements:

- Vertical and horizontal alignment of the wall face shall not vary by more than 3/4-inch when measured along a 10-foot straightedge.
- Overall vertical tolerance (plumbness) of the wall shall not exceed 1 1/4-inch per 10-ft of wall height from the final wall batter. Negative (outward leaning) batter is not acceptable.
- The first row of units shall be level from unit-to-unit and from front-to-back. Use the tail of the units for alignment and measurement.
- All units shall be laid snugly together and parallel to the straight or curved line of the wall face.
- Unless otherwise noted, all blocks shall be dry-stacked and placed with each block evenly spanning the joint in the row below (running bond). Shimming or grinding shall control the elevations of any two adjacent blocks within 1/16 inch.
- The top of blocks shall be checked with a minimum length of 3-foot long straight edge bubble level. Any high points identified by the straight edge shall be ground flat. Block front to back tilting shall be checked frequently, however correction by shimming shall be done no later than 3 completed courses.
- Wall sections not conforming to these tolerances shall be reconstructed at no additional cost to the Department.

(E) Placement of Metallic Reinforcement Elements:

Metallic reinforcement elements shall be placed normal (perpendicular) to the face of the wall, unless otherwise shown on the approved plans. All reinforcement shall be structurally connected to the wall face.

At each level of the reinforcement, the reinforced wall fill material shall be roughly leveled and compacted before placing the next layer of reinforcement. The reinforcement shall bear uniformly on the compacted reinforced fill from the connection to the wall to the free end of the reinforcing elements. The reinforcement placement elevation shall be at the connection elevation to two (2) inches higher than the connection elevation.

Where overlapping of reinforcing may occur, such as at corners, reinforcing connections to panels shall

be adjusted to maintain at least three (3) inches of vertical separation between overlapping reinforcement.

(F) Placement of Geotextile:

All joints between precast concrete panels shall be covered with geotextile on the backside of the wall. Adhesive shall be applied to panels only. Adhesive shall not be applied to geotextile fabric or within two (2) inches of a joint. The contractor shall provide geotextile having a minimum width of 12 inches, and shall overlap fabric a minimum of four (4) inches. If applicable, the placement of the geotextile fabric for modular block walls shall be in accordance with the plans.

(G) Joint Pads and Fillers:

The contractor shall install joint pads and fillers as shown on the working drawings.

(H) Placement of Geosynthetic Reinforcement:

Geosynthetic reinforcement is not allowed.

4.06 Reinforced Wall Fill Placement:

(A) General:

Reinforced wall fill material shall be compacted using a static-weighted or vibratory roller. Sheeps-foot or grid-type rollers shall not be used for compacting material within the limits of the fill reinforcement. Compaction within three (3) feet of the wall facing shall be achieved by a lightweight mechanical tamper or roller system.

Reinforced wall fill placement shall closely follow erection of each course of facing panels. Reinforced fill material shall be placed in such a manner to avoid damage or disturbance of the wall materials, misalignment of facing panels, or damage to fill reinforcement or facing members. The contractor shall place fill material to the level of the connection and in such a manner as to ensure that no voids exist directly beneath reinforcing elements.

If applicable, the fill material for walls with modular block facing units shall not be advanced more than the height of a modular block unit until the drainage fill, core fill and all fill in all openings within the blocks at that level have been placed. The filled units shall be swept clean of all debris before installing the next level of units and/or placing the geogrid materials

The maximum compacted lift thickness shall not exceed eight (8) inches. The contractor shall decrease this lift thickness, if necessary, to obtain the specified density.

For metallic reinforcements, the fill shall be spread by moving the machinery parallel to or away from the wall facing and in such a manner that the steel reinforcement remains normal to the face of the wall. Construction equipment shall not operate directly on the steel reinforcement. A minimum fill thickness of three (3) inches over the steel reinforcement shall be required prior to operation of vehicles. Sudden braking and sharp turning shall be avoided.

Wall materials which are damaged during reinforced fill material placement shall be removed and replaced by the contractor, at no additional cost to the Department. The contractor may submit alternative corrective procedures to the Engineer for consideration. Proposed alternative corrective procedures shall have the concurrence of the MSE wall supplier and designer, in writing, prior to submission to the Engineer for consideration. All corrective actions shall be at no additional cost to the Department.

(B) Compaction Criteria:

Trial fill sections shall be constructed with Department personnel present to determine appropriate criteria to achieve adequate compaction. The trial fill sections shall be performed as follows:

- One trial fill section is valid for up to 10,000 ft² of MSE wall area (e.g. 1 to 10,000 ft² of wall requires 1 trial fill section, 10,001 to 20,000 ft² requires 2, etc.) and for no more than one individual MSE wall.
- The minimum dimensions of the test pad shall be 15 ft. wide by 50 ft. long.
- The lift thickness shall not exceed eight (8) inches after compaction.
- Compaction shall be determined by using a level to measure the settlement of the trial section at a number of points after each pass (e.g., a minimum of 5 points measured at the center of a 1 ft square metal plate or other method approved by the Engineer).
- A thickness of approximately 2.5 feet shall be constructed to determine the appropriate number of passes, which will maximize compaction without excessively crushing the rock at the surface.
- The number of passes to achieve at least 80 percent of the maximum settlement will be required for production work.
- Only those methods used to establish compaction compliance in the trial fill section shall be used for production work.
- A material change, change in source, a difference of more than +/- 5.0 percent passing any sieve size, and/or change in the approved equipment shall require the contractor to conduct a new trial fill section and obtain re-approval by the Engineer of the minimum number of passes and rolling pattern.
- The Department reserves the right to use other test methods to evaluate the adequacy of the compaction criteria.
- The trial fill sections are incidental to the bid price for Retaining Wall.

Within three (3) feet of the wall facing, compaction criteria shall be determined using test pad sections with Department personnel present to determine appropriate criteria to achieve adequate compaction. The test pad sections shall be performed as follows:

- The minimum dimensions of the test pad shall be 5 ft. wide by 15 ft. long.
- The lift thickness shall not exceed eight (8) inches after compaction.
- Compaction shall be determined by using a level to measure the settlement of the test pad section at a number of points after each pass (e.g., a minimum of 3 points measured at the center of a 1 ft square plate or other method approved by the Engineer).
- A thickness of approximately 2.5 feet shall be constructed to determine the minimum number of passes of a lightweight mechanical tamper or roller system.
- The number of passes to achieve at least 80 percent of the maximum settlement will be required for production work.
- Only those methods used to establish compaction compliance in the test pad section shall be used for production work.
- A material change, change in source, a difference of more than +/- 5.0 percent passing any sieve size, and/or change in the approved equipment shall require the contractor to conduct a new test pad section.
- The test pad sections are incidental to the bid price for Retaining Wall.

(C) Moisture Control:

The free moisture content of the reinforced fill material, as determined by KM 64-306, shall not exceed 2.0% during compaction.

(D) Protection of the Work:

The contractor shall not allow surface runoff from adjacent areas to enter the wall construction site at any time during construction operations. In addition, at the end of each day's operation, the contractor shall slope the last lift of fill material away from the wall facing so that runoff is directed away from the structure. If the subgrade is damaged due to water or otherwise, such that it does not meet the requirements of Subsection 4.02, then as directed by the Engineer, the contractor shall rework and repair the damaged subgrade at no additional expense to the Department. The criteria in Subsection 4.02 shall be used to judge the adequacy of the repair. Rework and repair shall extend to a depth where undamaged work is encountered.

4.07 Retained Backfill Placement:

As required by the Geotechnical Report and plan notes the retained backfill (i.e. external backfill outside of the reinforced volume) may consist of either soil or "Granular Embankment" meeting the requirements of Section 3.06 herein. The material shall be compacted in accordance with Section 206 of the current Standard Specifications except that the maximum loose lift thickness (prior to compaction) is 12 inches. Type IV Geotextile Fabric shall be placed between the existing embankment material and the proposed "Granular Embankment" in accordance with Sections 214 and 843 of the Standard Specifications.

4.5 MONITORING:

4.51 Monitoring Devices:

The Geotechnical Report may require devices to monitor vertical and horizontal displacement both during and after construction. The Contractor will be responsible for providing labor and materials and for cooperating with, and providing, any required assistance to Department personnel with implementation of monitoring activities. The cost of all labor and materials required to support the monitoring program will be incidental to the cost of the.

The approximate locations of any monitoring devices shall be shown in the Working Drawings prepared by the MSE Wall Designer.

4.52 Monitoring Schedule:

The monitoring schedule for any required monitoring device shall be as agreed upon in the Geotechnical Report for the structure.

5.0 METHOD OF MEASUREMENT:

5.01 MSE Retaining Wall:

Mechanically Stabilized Earth (MSE) retaining walls will be measured by the square foot of Retaining Wall. The vertical height will be taken as the difference in elevation measured from the top of wall to the top of the leveling pad. No field measurement will be made. The final quantity will be the contract plan quantity increased or decreased by authorized changes.

The MSE Wall supplier's design may require additional excavation and MSE Wall materials to satisfy their design. The design MSE earth reinforcement lengths shall be equal to or greater than the length shown on the plans or as required by the AASHTO Specifications for the height of the wall plus live load surcharge. The lengths of the MSE Reinforcement shall be constant from the bottom to the top of the

section. Extension of the plan limits to accommodate the wall design, configuration of pre-fabricated concrete units, or lengths of earth reinforcement for MSE Walls shall not be cause for changing the plan pay quantities. Additional quantities of excavation, MSE Reinforcement, MSE volume, excavation for foundation replacement, granular embankment, and labor necessary to satisfy the MSE Wall supplier's design shall be incidental to the Retaining Wall.

The MSE volume that extends twelve inches, minimum, beyond the ends of the reinforced volume for MSE Walls shall be incidental to the Retaining Wall.

All work associated with providing the design, details and construction for the coping, moment slab, barrier and pre-cast aesthetic panel shall be incidental to the Retaining Wall.

All materials, equipment, and labor necessary to provide and install the geotextile fabric immediately surrounding the reinforced fill volume shall be incidental to the Retaining Wall.

5.02 Embankment:

The quantity of embankment for external retained backfill behind the MSE Walls and, if required, granular foundation beneath the walls shall be measured according to Section 206 of the current Standard Specifications. The final quantities shall be based on field measurements.

5.03 Geotextile Fabric:

All materials, equipment, and labor necessary to provide and install the geotextile fabric placed between existing fill material and Granular Embankment shall be measured according to Section 214 of the current Standard Specifications. The final quantities shall be based on field measurements.

| Appendix:

SPECIAL NOTE FOR CONCRETE SEALING

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.

DIVISION OF TRAFFIC OPERATIONS

**PROJECT MATERIALS RELEASE FORM
 FOR SIGNAL AND LIGHTING**

Note: Email form with signatures to KYTC's warehouse (kim.stamper@ky.gov) at least two (2) days prior to arrival for pickup. Ensure Contractor's delivery driver has a copy of form with signatures. Failure to do either may result in long delays or refusal to distribute materials upon arrival.

Item Number: 4/20/2001
 County: D4
 Description: 3 TRAFFIC SIGNALS KY 222 @ I-65 / 31W / OLD CONNECTOR

Cabinets	Master code	
3	T-01-0020	Base Mounted 332 Cabinet
3	T-01-0105	ATC Controller
3	T-01-0106	1C w/Maxtime (this should go with item ATC controller)
3	T-01-0501	Conflict Monitor, Model 2018
3	T-01-0510	Isolator, Model 242 (1 for 2070, plus for ped detector and railroad)
23	T-01-0700	Load Switches

Signals		
37	T-02-0009	Siemens 3 Section Signal
37	T-02-0032	Siemen 3 section backplate
3	T-02-0040	Siemen 5 section, 12 inch signal (poly)
3	T-02-0041	Siemen 5 section backplate
17	T-02-0300	LED Module 12" red arrow
21	T-02-0310	LED Module 12" yellow arrow
21	T-02-0320	LED Module 12" green arrow
23	T-02-0330	LED Module 12" red ball
23	T-02-0340	LED Module 12" yellow ball
23	T-02-0350	LED Module 12" green ball

Special items		
1		Radar Presense Detector Type A & B
3	T-02-0504	Router (this includes power supply/antenna/cabling)
3	T-09-0415	30 X 36 through 36 X 36 sign hanger (New)

Poles		
4	T-04-0051	Steel Strain Pole 36 foot
4	T-04-0054	Steel Strain Pole 38 foot
4	T-04-0055	Steel Strain Pole 40 foot

REQUIRED

Electrical Contractor Name _____
 Electrical Contractor Supervisor _____ Contact number for Supervisor _____
 Project Engineer _____ Contact number for Project Engineer _____
 Project Engineer attests that the mentioned contractor is the actual electrical contractor on this project
 Signature of Project Engineer or Designee _____

KENTUCKY TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS TRAFFIC MANAGEMENT PLAN

County: Hardin Item No.: 04-0020.01

Federal Project No.: NHPPIM 0654 (041)

Project Description:

Improve the safety and increase the capacity of the I-65/KY-222 Interchange at Glendale based on existing and future needs for the area.

Roadway Classification: Urban Rural
 Local Collector Arterial Interstate

ADT (current) 40,400 AM Peak Current * PM Peak Current * % Trucks 47%

Project Designation: Significant Other: _____

Traffic Control Plan Design:

Taper and Diversion Design Speeds 55 MPH

Minimum Lane Width 12' Minimum Shoulder Width 2'

Minimum Bridge Width N/A

Minimum Radius N/A Maximum Grade 2.5398%

Minimum Taper Length 840' Minimum Intersection Level of Service N/A

Existing Traffic Queue Lengths N/A Projected Traffic Queue Lengths N/A

Comments:

Temporary Traffic Control Plan attached.

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
TRAFFIC MANAGEMENT PLAN**

Item No. 04-0020.01

Discussion:

1) Public Information Plan			
a) Prepare with assistance from <input checked="" type="checkbox"/> KYTC or <input type="checkbox"/> N/A			
b) Identify Trip Generators	Referenced	f) Railroad Involvement	N/A
c) Identify Types of Road Users	Referenced	g) Address Pedestrians, Bikes Mass Transit	N/A
d) Public Information Message	Referenced	h) Address Timing, Frequency, Updates, Effectiveness of Plan	Referenced
e) Public Information Strategies to be used	Referenced	i) Police & Other Emergency Services	Referenced

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
TRAFFIC MANAGEMENT PLAN**

Item No. 04-0020.01

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase 1	
Exposure Control Measures	Positive Protection Measures
a) Is Road Closure Allowed No Type:	a) Address Drop Off Protection Criteria Referenced
b) Detour Conditions N/A	b) Temporary Barrier Requirements Referenced
c) Working Hour Restrictions Referenced	c) Evaluation of Existing Guardrail Conditions N/A
d) Holiday or Special Event Work Restrictions Referenced	d) Address Temporary Drainage Referenced
e) Evaluation of Intersection LOS N/A	Uniformed Law Enforcement Officers N/A
f) Evaluation of Queue Lengths N/A	Payment for Traffic Control*
g) Evaluation of User Costs and Incentives/Disincentives Referenced	a) Method of Project Bidding Lump Sum
h) Address Pedestrians, Bikes, Mass Transit Referenced	b) Special Notes N/A
Work Vehicles and Equipment N/A	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction
Comments: Reference I-65/KY-222 MOT (TTCP Sheets R97, R99, R100, R101).	
<p><u>Phase I</u> I-65 will be reduced to 2-lanes of traffic in each direction to allow construction of center pier of proposed KY222 bridge over I-65. KY-222, US 31W and approaches that do not conflict with existing routes or traffic operations will be constructed. Construction for Phase I will be to final base course. Access into the Glendale Mega-Site will be maintained via existing road as shown on the plans.</p> <p><u>Phase I Traffic Control</u> See referenced plans</p>	

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
TRAFFIC MANAGEMENT PLAN**

Item No. 04-0020.01

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase 2	
Exposure Control Measures	Positive Protection Measures
a) Is Road Closure Allowed No Type:	a) Address Drop Off Protection Criteria Referenced
b) Detour Conditions N/A	b) Temporary Barrier Requirements Referenced
c) Working Hour Restrictions Referenced	c) Evaluation of Existing Guardrail Conditions N/A
d) Holiday or Special Event Work Restrictions Referenced	d) Address Temporary Drainage Referenced
e) Evaluation of Intersection LOS N/A	Uniformed Law Enforcement Officers N/A
f) Evaluation of Queue Lengths N/A	Payment for Traffic Control*
g) Evaluation of User Costs and Incentives/Disincentives Referenced	a) Method of Project Bidding Lump Sum
h) Address Pedestrians, Bikes, Mass Transit Referenced	b) Special Notes N/A
Work Vehicles and Equipment Referenced	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction
Comments: Reference I-65/KY-222 MOT plan (TTCP Sheets R98, R99, R102-R104)	
<u>Phase 2</u> Phase 2 construction includes ramp construction on I-65, temporary ramp construction and channel change construction, construction for Phase 2 will be to final base course. I65 traffic will be shifted from outside lanes to inside lanes, maintaining 2 lanes in each direction and access to all ramps.	
<u>Phase 2 Traffic Control</u> See referenced plans	

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
TRAFFIC MANAGEMENT PLAN**

Item No. 04-0020.01

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase 3	
Exposure Control Measures	Positive Protection Measures
a) Is Road Closure Allowed Type: No	a) Address Drop Off Protection Criteria Referenced
b) Detour Conditions N/A	b) Temporary Barrier Requirements Referenced
c) Working Hour Restrictions N/A	c) Evaluation of Existing Guardrail Conditions N/A
d) Holiday or Special Event Work Restrictions Referenced	d) Address Temporary Drainage Referenced
e) Evaluation of Intersection LOS N/A	Uniformed Law Enforcement Officers N/A
f) Evaluation of Queue Lengths N/A	Payment for Traffic Control*
g) Evaluation of User Costs and Incentives/Disincentives Referenced	a) Method of Project Bidding Lump Sum
h) Address Pedestrians, Bikes, Mass Transit Referenced	b) Special Notes N/A
Work Vehicles and Equipment N/A	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction
Comments: Reference I-65/KY-222 MOT plan (TTCP Sheets R98, R105, and R106).	
Phase 3: Shift Ramp 5 and 7 traffic to temporary ramps. Construct remainder of KY222. Construct proposed Ramps. Construct KY222 bridge over I65, setting beams using rolling roadblocks.	

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
TRAFFIC MANAGEMENT PLAN**

Item No. 04-0020.01

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase 4	
Exposure Control Measures	Positive Protection Measures
a) Is Road Closure Allowed Type: N/A	a) Address Drop Off Protection Criteria Referenced
b) Detour Conditions N/A	b) Temporary Barrier Requirements Referenced
c) Working Hour Restrictions N/A	c) Evaluation of Existing Guardrail Conditions N/A
d) Holiday or Special Event Work Restrictions Referenced	d) Address Temporary Drainage Referenced
e) Evaluation of Intersection LOS N/A	Uniformed Law Enforcement Officers N/A
f) Evaluation of Queue Lengths N/A	Payment for Traffic Control*
g) Evaluation of User Costs and Incentives/Disincentives Referenced	a) Method of Project Bidding Lump Sum
h) Address Pedestrians, Bikes, Mass Transit Referenced	b) Special Notes N/A
Work Vehicles and Equipment N/A	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction
Comments: Reference I-65/KY-222 MOT plan (TTCP Sheets R98, R106 and R107).	
<u>Phase 4</u> Prior to Phase 4 construction, install maintenance of traffic signs for Phase 4 construction. Install signal at KY-222 and approach 3 and KY-222 and approach 2 intersections. Construct remainder of proposed ramps.	

DEPARTMENT OF HIGHWAYS TRAFFIC MANAGEMENT PLAN

Item No. 04-0020.01

2) Temporary Traffic Control Plan (For Each Phase of Construction)	
Phase 5	
Exposure Control Measures	Positive Protection Measures
a) Is Road Closure Allowed Type: No	a) Address Drop Off Protection Criteria Referenced
b) Detour Conditions N/A	b) Temporary Barrier Requirements Referenced
c) Working Hour Restrictions Referenced	c) Evaluation of Existing Guardrail Conditions N/A
d) Holiday or Special Event Work Restrictions Referenced	d) Address Temporary Drainage Referenced
e) Evaluation of Intersection LOS N/A	Uniformed Law Enforcement Officers N/A
f) Evaluation of Queue Lengths N/A	Payment for Traffic Control*
g) Evaluation of User Costs and Incentives/Disincentives Referenced	a) Method of Project Bidding Lump Sum
h) Address Pedestrians, Bikes, Mass Transit Referenced	b) Special Notes N/A
Work Vehicles and Equipment N/A	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction
Comments: Reference I-65/KY-222 MOT plan (TTCP Sheets R98).	
<u>Phase 5</u> Install Signal at Interchange, shift traffic to proposed alignments, Remove Temp Ramps 5 and 7, Remove existing KY222 bridge over I-65 under traffic using rolling roadblock. Place final surface course and final striping.	

DEPARTMENT OF HIGHWAYS
TRAFFIC MANAGEMENT PLAN
Item No. 04-0020.01

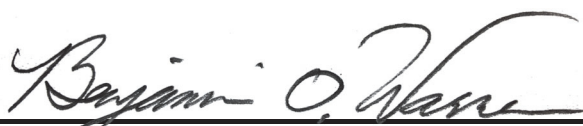
APPROVAL:



10/28/2021

Project Manager

Date



10/29/21

Project Delivery and Preservation Manager

Date



10/29/21

Engineering Support Manager

Date

EILEEN JOHANNEMAN VAUGHAN

Digitally signed by EILEEN JOHANNEMAN VAUGHAN
Date: 2021.11.04 16:28:39 -04'00'

FHWA Representative

Date

Revisions to the TMP require review/approval by the signatories.

INTERSTATE 65 @ KY 222 Interchange Reconstruction
I65 MP 84.5 to 86.7
ITEMS 4-20.01
PUBLIC INFORMATION PLAN

The primary goal of the Public Information Plan (PIP) is to inform the motoring public and area stakeholders of project information including Maintenance of Traffic (MOT). KYTC's District 4 Public Information Officer (PIO) will coordinate and disseminate appropriate information to stakeholders and media regarding construction plans.

This project is expected to impact traffic during construction seasons of 2022 and 2023. Work will be phased such that two lanes in each direction of I65 remain open at all times. Inside lanes will be closed first, followed by the outside lanes. Efforts will be made to minimize impacts during holiday traffic and other known heavy volume periods/events.

LOCAL STAKEHOLDERS

Due to the travel impact along the construction route and adjacent/alternate routes, the stakeholders for this project will include officials and agencies from mainly Hardin County. It should be noted that additional work continues in the southern Hardin County area with an active I65 widening project. KYTC will monitor both construction zones and coordinate traffic impacts should a major event take place.

- State Representative, Jim DuPlessis (Hardin) – 502.564.8100 / jim.duplessis@lrc.ky.gov
- State Senator, Dennis Parrett (Hardin) – 270.765.4565 / dennis.parrett@lrc.ky.gov
- Hardin County Judge Executive, Harry Berry – 270.765.2350 / hcgo@kcky.org
- Elizabethtown Mayor, Jeff Gregory – 270.765.6121 / jeff.gregory@elizabethtownky.gov
- Hardin County Sheriff, John Ward – 270.765.5133 / info.hcso@hcky.org
- Hardin County Schools Transportation Director, John Skaggs – 270.769.8800 / John.Skaggs@hardin.kyschools.us
- Hardin County Emergency Management Director, Bryce Shumate – 270.765.5978 / bshumate@hcky.org
- Kentucky State Police (Elizabethtown – Post 4) – 270.766.5078
- Kentucky Transportation Cabinet District-4 Incident Management Team
 - Multiple Contacts / Distribution List Available

UTILITY IMPACTS

Reference Utility Impact Note included in the Project Proposal

TRUCKING FIRMS AND OUT OF STATE STAKEHOLDERS

Information will be distributed electronically to trucking firms via SGT Jason Morris of the Kentucky State Police – Commercial Vehicle Enforcement (502.782.8583;

Jason.morris@ky.gov). TRIMARC (www.trimarc.org) will also be utilized on an as needed basis to help disseminate information. Construction travel impacts will also be posted on the goky.ky.gov system. KYTC will utilize overhead message boards along the interstate corridor through Kentucky from Tennessee to Indiana on an as needed basis.

EMERGENCY SITUATIONS

Western KY Parkway/I-165 is predetermined as best route to divert traffic in the event of a significant closure.

MEDIA RELATIONS

The District Public Information Officer (PIO) will prepare an initial news release regarding the contract award for the project. The PIO will provide updates to the media and other contacts outlined in this plan throughout the project duration to keep the public informed of construction progress. Traffic advisories will be submitted to the media when a change in the MOT occurs. The contractor must provide to the PIO via the Resident Engineer notification of any change in the MOT at least five (5) days prior to the change.

SPECIAL NOTE

For Tree Removal

**Hardin County
CONSTRUCT NEW INTERCHANGE ON I-65 TO ACCOMODATE
MAJOR DEVELOPMENT POSSIBILITIES SOUTH OF
ELIZABETHTOWN
Item No. 4-20**

NO CLEARING OF TREES 5 INCHES OR GREATER (DIAMETER BREAST
HEIGHT) FROM JUNE 1- JULY 31

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

SPECIAL NOTE FOR PIPELINE INSPECTION

1.0 DESCRIPTION. The Department will perform visual inspections on all pipe on the project. A video inspection will be required on projects having more than 250 linear feet of storm sewer and/or culvert pipe and on routes with an ADT of greater than 1,000 vehicles. Conduct video inspections on all pipe located under the roadway and 50 percent of the remaining pipe not under the roadway. Storm sewer runs and outfall pipes not under the roadway take precedence over rural entrance pipes. Contractors performing this item of work must be prequalified with the Department in the work type J51 (Video Pipe Inspection and Cleaning). Deflection testing shall be completed using a mandrel in accordance with the procedure outlined below or by physical measurement for pipes greater than 36 inches in diameter. Mandrel testing for deflection must be completed prior to the video inspection testing. Unless otherwise noted, Section references herein are to the Department's Standard Specifications for Road and Bridge Construction, current edition.

2.0 VIDEO INSPECTION. Ensure pipe is clear of water, debris or obstructions. Complete the video inspection and any necessary measurement prior to placing the final surface over any pipe. When paving will not be delayed, take measurements 30 days or more after the completion of earthwork to within 1 foot of the finished subgrade. Notify the Engineer a minimum of 24 hours in advance of inspection and notify the Engineer immediately if distresses or locations of improper installation are logged.

2.1 INSPECTION FOR DEFECTS AND DISTRESSES

A) Begin at the outlet end and proceed through to the inlet at a speed less than or equal to 30 ft/minute. Remove blockages that will prohibit a continuous operation.

B) Document locations of all observed defects and distresses including but not limited to: cracking, spalling, slabbing, exposed reinforcing steel, sags, joint offsets, joint separations, deflections, improper joints/connections, blockages, leaks, rips, tears, buckling, deviation from line and grade, damaged coatings/paved inverts, and other anomalies not consistent with a properly installed pipe.

C) During the video inspection provide a continuous 360 degree pan of every pipe joint.

D) Identify and measure all cracks greater than 0.1" and joint separations greater than 0.5".

E) Video Inspections are conducted from junction to junction which defines a pipe run. A junction is defined as a headwall, drop box inlet, curb box inlet, manhole, buried junction, or other structure that disturbs the continuity of the pipe. Multiple pipe inspections may be conducted from a single set up location, but each pipe run must be on a separate video file and all locations are to be referenced from nearest junction relative to that pipe run.

F) Record and submit all data on the TC 64-765 and TC 64-766 forms.

3.0 MANDREL TESTING. Mandrel testing will be used for deflection testing. For use on Corrugated Metal Pipe, High Density Polyethylene Pipe, and Polyvinyl Chloride Pipe, use a mandrel device with an odd number of legs (9 minimum) having a length not less than the outside diameter of the mandrel. The diameter of the mandrel at any point shall not be less than the diameter specified in Section 3.6. Mandrels can be a fixed size or a variable size.

3.1 Use a proving ring or other method recommended by the mandrel manufacturer to verify mandrel diameter prior to inspection. Provide verification documentation for each size mandrel to the Engineer.

3.2 All deflection measurements are to be based off of the AASHTO Nominal Diameters. Refer to the chart in section 3.6.

3.3 Begin by using a mandrel set to the 5.0% deflection limit. Place the mandrel in the inlet end of the pipe and pull through to the outlet end. If resistance is met prior to completing the entire run, record the maximum distance achieved from the inlet side, then remove the mandrel and continue the inspection from the outlet end of the pipe toward the inlet end. Record the maximum distance achieved from the outlet side.

3.4 If no resistance is met at 5.0% then the inspection is complete. If resistance occurred at 5.0% then repeat 3.1 and 3.2 with the mandrel set to the 10.0% deflection limit. If the deflection of entire pipe run cannot be verified with the mandrel then immediately notify the Engineer.

3.5 Care must be taken when using a mandrel in all pipe material types and lining/coating scenarios. Pipe damaged during the mandrel inspection will be video inspected to determine the extent of the damage. If the damaged pipe was video inspected prior to mandrel inspection then a new video inspection is warranted and supersedes the first video inspection. Immediately notify the Engineer of any damages incurred during the mandrel inspection and submit a revised video inspection report.

3.6 AASHTO Nominal Diameters and Maximum Deflection Limits.

Base Pipe Diameter (inches)	AASHTO Nominal Diameter (inches)	Max. Deflection Limit (inches)	
		5.0%	10.0%
15	14.76	14.02	13.28
18	17.72	16.83	15.95
24	23.62	22.44	21.26
30	29.53	28.05	26.58
36	35.43	33.66	31.89
42	41.34	39.27	37.21
48	47.24	44.88	42.52
54	53.15	50.49	47.84
60	59.06	56.11	53.15

4.0 PHYSICAL MEASUREMENT OF PIPE DEFLECTION. Alternate method for deflection testing when there is available access or the pipe is greater than 36 inches in diameter, as per 4.1. Use a contact or non-contact distance instrument. A leveling device is recommended for establishing or verifying vertical and horizontal control.

4.1 Physical measurements may be taken after installation and compared to the AASHTO Nominal Diameter of the pipe as per Section 3.6. When this method is used, determine the smallest interior diameter of the pipe as measured through the center point of the pipe (D2). All measurements are to be taken from the inside crest of the corrugation. Take the D2 measurements at the most deflected portion of the pipe run in question and at intervals no greater than ten (10) feet through the run. Calculate the deflection as follows:

$$\% \text{ Deflection} = [(AASHTO \text{ Nominal Diameter} - D2) / AASHTO \text{ Nominal Diameter}] \times 100\%$$

Note: The Engineer may require that preset monitoring points be established in the culvert prior to backfilling. For these points the pre-installation measured diameter (D1) is measured and recorded. Deflection may then be calculated from the following formula:

$$\% \text{ Deflection} = [(D1 - D2) / D1] (100\%)$$

4.2 Record and submit all data.

5.0 DEDUCTION SCHEDULE. All pipe deductions shall be handled in accordance with the tables shown below.

FLEXIBLE PIPE DEFLECTION	
Amount of Deflection (%)	Payment
0.0 to 5.0	100% of the Unit Bid Price
5.1 to 9.9	50% of the Unit Bid Price ⁽¹⁾
10 or greater	Remove and Replace ⁽²⁾

⁽¹⁾ Provide Structural Analysis for HDPE and metal pipe. Based on the structural analysis, pipe may be allowed to remain in place at the reduced unit price. ⁽²⁾ The Department may allow the pipe to remain in place with no pay to the Contractor in instances where it is in the best interest to the public and where the structural analysis demonstrates that the pipe should function adequately.

RIGID PIPE REMEDIATION TABLE PIPE	
Crack Width (inches)	Payment
≤ 0.1	100% of the Unit Bid Price
Greater than 0.1	Remediate or Replace ⁽¹⁾

(1) Provide the Department in writing a method for repairing the observed cracking. Do not begin work until the method has been approved.

6.0 PAYMENT. The Department will measure the quantity in linear feet of pipe to inspect. The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24814EC	Pipeline Inspection	Linear Foot
10065NS	Pipe Deflection Deduction	Dollars

Rev 8/2021

Special Note for Portable Queue Warning Alert System

1.0 Description

This item shall consist of furnishing, installing, relocating, operating, servicing, and removing various components of a portable, quickly deployable, real-time automated ITS queue warning alert system (PQWAS), in accordance with the standard specifications and this special provision. The Contractor shall also provide the maintenance of the complete system for the duration of the project or as directed by the Project Engineer. The Department is willing to look at different technologies (i.e. allow the use of crowd sourcing data to be used in lieu of the portable radar sensors). Any changes to the below requirements must be submitted and approved by the Engineer.

2.0 Materials

Materials shall be in accordance as follows:

All materials used shall meet the manufacturer's specifications and recommendations.

All PQWAS materials installed on the project shall be provided by the Contractor in excellent quality condition, shall be corrosion resistant and in strict accordance with all of the details shown within Contractor's Plans approved by KYTC. The Contractor shall maintain an adequate inventory of parts and replacement units to support maintenance and repair of the PQWAS. Pre-deployment is a condition of the system's acceptance and is based on the successful performance demonstration for a (5) day continuous period in accordance to this specification and as set forth in the plans. Ensure compliance to all FCC and Department specifications.

The Contractor shall maintain this system and shall be locally available to service and maintain system components, move portable devices as necessary and respond to emergency situations. The Contractor has oversight responsibility for directing placement of devices in the project area. The Contractor is to be accessible seven (7) days a week and twenty-four (24) hours a day while the system is deployed. The Contractor shall provide contact information for the system's coordinator and others responsible for maintenance of the system prior to installation of the system. Furnish a System Coordinator for monitoring the PQWAS throughout all periods of deployment.

A. General Capabilities and Performance Requirements

1. Overall PQWAS capabilities and performance requirements include the following:
 - a. Furnish a system capable of providing advance traffic information to motorists when there is a queueing of traffic due to congestion resulting from lane reductions, emergency events or other conditions. The condition-responsive notification to the motorist occurs with the use of Portable Changeable Message Signs (PCMS) in accordance to the below capabilities and performance requirements, activated through real-time traffic data collected downstream of the PCMS locations. This equipment must

be a packaged system, pre-programmed and operates as a stand-alone PQWAS meeting this specification. Conditions might exist that require relocation of the portable sensors at any given time, the sensors shall be portable and shall not require re-calibration in the field for fast deployments. Due to the potential need to replace damaged sensors or to change the position of one or more sensors at any given time, sensors must be interchangeable and relocatable by an unskilled laborer. The system must continue to function if as many as half the sensors fail to function.

- b. Provide a PQWAS that consists of the following field equipment: portable radar sensors and portable changeable message signs (PCMS). Provide a system capable of withstanding inclement weather conditions while continuing to provide adequate battery power. The portable radar sensor battery, in a stand-alone state and without a solar panel for recharging, shall be capable of keeping power and capable of sending data for (10) consecutive days or longer. The system shall notify drivers of real-time queue events via specifically placed PCMS units up stream of the work zone. All predetermined/preprogrammed messages are to be approved by KYTC. The number and location of portable radar sensors and PCMS units shall be as directed by the Project Engineer. The decision to deploy or relocate field equipment is made by the Project Engineer and instrumented through the System Coordinator. The decision for equipment removal is made by the Project Engineer after work is complete. The sensors and PCMS units shall be identifiable via global positioning system (GPS) and shall contain an accelerometer to detect and alert of unauthorized movement.
- c. The portable radar sensor shall be capable of collecting traffic speed data. The processed data is used to remotely control PCMS units to display user definable, Engineer approved and locally stored messages. The message trigger state thresholds for slow and stopped speeds shall be user configurable and revisable in less than {1} hour from the Project Engineer's request. Weekly Traffic Data Reports shall be presented to the Project Engineer and shall include speed data per sensor location, travel times, and queue lengths in graphical and numerical formats. In the event the Project Engineer requires a report, other than a weekly report, for any reason; then the Contractor shall provide report within (48) hours of request. Unlimited data reports shall be included within price of system. Sensors shall require no calibration adjustments in the field. Sensor should begin transmitting data within (30) seconds of being turned on. Satellite (SAT) communications will be required when cellular service does not provide continuous communications. Contractor shall identify the most trustworthy cellular provider within the project area.
- d. Data shall be accessible through a website and the Contractor shall provide a username and password for protection. The website shall be accessible seven (7) days a week and twenty - four (24) hours a day. The website shall provide historical & real-time data in graphical and numerical formats and shall have the capability of being integrated within the Department's Traffic Management Center (if requested). The website should be compatible to most hand held devices. Data shall be saved on the manufacturer's network for up to (5) years from the deployment date of system and shall be provided at the request

of the Department at any time within the (5) year window. The use of the website shall be included within the price of system.

- e. Warning Alerts: queue events, low battery voltage warnings, sensor movement alerts, high and low speed alerts shall be provided via cellular text messaging and/or via email messaging at the request of select Contractor personnel and KYTC officials.
- f. The PQWAS system shall have the capabilities to provide alternate route messaging on specifically placed portable changeable message units and/or fixed Variable Message Systems (VMS). The intent of this service is to provide alternate route messaging to motorists before entering the project limits from all directions and giving them appropriate time to adjust their routes. Alternative routes shall be predefined and approved by KYTC. Additional PCMS units may be required for alternate route messaging and will be as per Section 5.0 of this note. KYTC's Traffic Management Center will provide detour messages via fixed VMS units during the term of the project.

B. Portable Radar Sensor Capabilities and Performance Requirements

The PQWAS shall include portable radar sensors (PRD) to monitor and detect queue events.

1. The Radar Sensor shall be FHWA accepted to meet NCHRP 350 test requirements
2. The Radar Sensor shall be locatable at all times via an internal Global Positioning System (GPS) and shall be capable of Cellular or SAT Communications.
3. The Radar Sensor shall have a dry-cell battery capable of powering the system for (10) consecutive days or longer
4. The Radar sensor shall be K-Band technology and have a line of sight up to 200 linear feet without obstruction
5. The Radar sensor shall have the ability to be charged in the field through adaptable solar recharging technology in the case the sensor is utilized for more than 10 consecutive days

C. PCMS Capabilities and Performance Requirements

The PQWAS shall include portable changeable message signs (PCMS) designated to relay automated messaging of queue events, alternate route messages, and caution for the work area defined by the project limits. PCMS placements shall meet the requirements set forth by the Cabinet in each direction of the National Highway System (NHS).

1. The PCMS unit shall be a Full Matrix 24 rows x 50 columns and shall be capable of 1 line, 2line or 3 line messages
2. The PCMS unit shall be legible from a distance over twelve hundred feet (1200')
3. The height and size of characters shall be 18" to 58"
4. The PCMS shall be capable of storing up to 199 pre-programmed messages and up to 199 user-defined messages
5. The PCMS shall have a weather tight control cabinet with back lit LCD handheld controller.
6. The PCMS shall utilize a hydraulic lift to raise the unit to display height
7. The PCMS unit shall include solar recharging ports to allow for recharging of the portable radar sensors when they are not deployed.
8. The PCMS shall be NTCIP compliant and shall have an active Modem with active cellular service.

9. The user shall have the ability to communicate and override the PCMS remotely in the event of an emergency, Amber Alert, etc.
10. The PCMS unit shall have a docking station to include safety rails that allow a commercial safety strap to tie down the portable radar sensors while in transport. The docking station shall hold-up to (4) sensors safely and securely at all times

3.0 Construction Requirements

All communication costs include cellular telephone services, FCC licensing, wireless data networks, satellite and internet subscription charges, and battery charging and maintenance. Additional to these requirements, the Contractor shall assume all responsibility for any and all damaged equipment due to crashes, vandalism, and adverse weather that may occur during the contract period.

The PQWAS shall operate continuously (24 hours/ 7 Days) when deployed on the project. The system is in a constant "data collection" mode when deployed. The Contractor shall provide technical support for the PQWAS for all periods of operation.

In the event communication is lost with any component of the PQWAS, provide a means and staff to manually program a PCMS message. If communication is lost for more the 10 consecutive minutes, the system shall revert to a fail-safe ROADWORK/# MILES/AHEAD message displayed on the PCMS units until communication is restored.

System Operator, local control function and remote management operation must be password protected.

The PQWAS shall be capable of acquiring traffic information and selecting messages automatically without operator intervention after system utilization. The lag time between changes in threshold ranges and the posting of the appropriate PCMS message(s) shall be no greater than (60) seconds. The system operation and accuracy must not be appreciably degraded by inclement weather or degraded visibility conditions including precipitation, fog, darkness, excessive dust, and road debris.

The system shall be capable of storing ad-hoc messages created by the System Coordinator and logging this action when overriding any default or automatic advisory message.

The PQWAS communication system shall incorporate an error detection/correction mechanism to insure the integrity of all traffic conditions data and motorists information messages. Any required configuration of the PQWAS communication system shall be performed automatically during system initialization.

The system's acceptance is based on the successful performance demonstration of PQWAS for a (5) day continuous period in accordance to this specification and as set forth in the plans. Ensure compliance to all FCC and Department specifications.

4.0 Equipment Maintenance.

Maintain system components in good working condition at all times. Repair or replace damaged or malfunctioning components, at no cost to the Department, as soon as possible and within (12) hours of notification by the Engineer. Periodically clean PCMS units if necessary.

5.0 Measurement. The Department will measure each item below in Months. For partial months the Department will pay in 0.25 increments based on the number of calendar days in the below table.

Partial Month Payment Schedule

Days	Increment
0-7 days	0.25
8-14 days	0.50
15-21 days	0.75
22-31 days	1.00

5.1 Portable Queue Warning Alert System includes cellular (SAT communications will be required if cellular is not available), all supporting field equipment, website, and unlimited data reports accessible by the Engineer. It will be measured by the number of months authorized by the Engineer for use on the project.

5.2 Queue Warning PCMS will be measured by each individual unit multiplied by the number of months authorized by the Engineer for use on the project.

5.3 Queue Warning Portable Radar Sensors will be measured by each individual unit multiplied by the number of months authorized by the Engineer for use on the project. Queue Warning Portable Radar Sensors will not be measured for payment if the Contractor utilizes a system operating on crowd sourcing data. Crowd sourcing data systems will only be allowed as approved by the engineer and will be considered incidental to Portable Queue Warning Alert System.

6.0 Payment.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
26136EC	Portable Queue Warning Alert System	Month
26137EC	Queue Warning PCMS	Month
26138EC	Queue Warning Portable Radar Sensors	Month

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SPECIAL NOTE FOR NON-TRACKING TACK COAT

1. DESCRIPTION AND USEAGE. This specification covers the requirements and practices for applying a non-tracking tack asphalt coating. Place this material on the existing pavement course, prior to placement of a new asphalt pavement layer. Use when expedited paving is necessary or when asphalt tracking would negatively impact the surrounding area. This material is not suitable for other uses. Ensure material can “break” within 15 minutes under conditions listed in 3.2.

2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Non-Tracking Tack. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide a tack conforming to the following material requirements:

Property	Specification	Test Procedure
Viscosity, SFS, 77 ° F	20 – 100	AASHTO T 72
Sieve, %	0.3 max.	AASHTO T 59
Asphalt Residue ¹ , %	50 min.	AASHTO T 59
Oil Distillate, %	1.0 max.	AASHTO T 59
Residue Penetration, 77 ° F	20 max.	AASHTO T 49
Original Dynamic Shear (G*/sin δ), 82 ° C	1.0 min.	AASHTO T 315
Softening Point, ° F	149 min.	AASHTO T 53
Solubility, %	97.5 min.	AASHTO T 44

¹ Bring sample to 212 °F over a 10-15 minute period. Maintain 212 °F for 15-20 minutes or until 30-40 mL of water has distilled. Continue distillation as specified in T59.

2.2. Equipment. Provide a distributor truck capable of heating, circulating, and spraying the tack between 170 °F and 180 °F. Do not exceed 180 °F. Circulate the material while heating. Provide the correct nozzles that is recommend by the producer to ensure proper coverage of tack is obtained. Ensure the bar can be raised to between 14” and 18” from the roadway.

2.3. Personnel. Ensure the tack supplier has provided training to the contractor on the installation procedures for this product. Make a technical representative from the supplier available at the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the non-tracking tack, ensure the pavement surface is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the surface by scraping, sweeping, and the use of compressed air. Ensure this preparation process occurs shortly before application to prevent the return of debris on to the pavement. If rain is expected within one hour after application, do not apply material. Apply material only when the surface is dry, and no precipitation is expected.

October 2021

- 3.2 Non-tracking Tack Application. Placement of non-tracking tack is not permitted from October 1st to May 15th. When applying material, ensure the roadway temperature is a minimum of 40°F and rising. Prior to application, demonstrate competence in applying the tack according to this note to the satisfaction of the Engineer. Heat the tack in the distributor to between 170 – 180 °F. After the initial heating, between 170 – 180 °F, the material may be sprayed between 165 °F and 180 °F. Do not apply outside this temperature range. Apply material at a minimum rate of 0.70 pounds (0.08 gallons) per square yard. Ensure full coverage of the material on the pavement surface. Full coverage of this material is critical. Increase material application rate if needed to achieve full coverage. Schedule the work so that, at the end of the day's production, all non-tracking tack is covered with the asphalt mixture. If for some reason the non-tracking tack cannot be covered by an asphalt mixture, ensure the non-tracking tack material is clean and reapply the non-tracking tack prior to placing the asphalt mixture. Do not heat material more than twice in one day.
- 3.3 Non-tracking Tack Certification. Furnish the tack certification to the Engineer stating the material conforms to all requirements herein prior to use.
- 3.4 Sampling and Testing. The Department will require a sample of non-tracking tack be taken from the distributor at a rate of one sample per 15,000 tons of mix. Take two 1 gallon samples of the heated material and forward the sample to the Division of Materials for testing within 7 days. Ensure the product temperature is between 170 and 180 °F at the time of sampling.
4. MEASUREMENT. The Department will measure the quantity of non-tracking tack in tons. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of non-tracking tack, the cleaning of the pavement surface, or furnishing and placing the non-tracking tack. The Department will consider all such items incidental to the non-tracking tack.
5. PAYMENT. The Department will pay for the non-tracking tack at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. Non-tracking tack will not be permitted for use from October 1st to May 15th. From September 1st to June 1st, the department will allow the use of an approved asphalt emulsion in lieu of a non-tracking tack product but will not adjust the unit bid price of the material. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

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Non-Tracking Tack Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Viscosity, SFS, 77 ° F	20 – 100	19 - 102	17 - 18	15 - 16	14	≤13
			103 - 105	106 - 107	108 - 109	≥ 110
Sieve, %	0.30 max.	≤ 0.40	0.41 - 0.50	0.51 - 0.60	0.61 - 0.70	≥ 0.71
Asphalt Residue, %	50 min.	≥49.0	48.5 – 48.9	48.0 – 48.4	47.5-47.9	≤ 47.4
Oil Distillate, %	1.0 max.	≤1.0	1.1-1.5	1.6 - 1.7	1.8-1.9	>2.0
Residue Penetration, 77 ° F	20 max.	≤ 21	22 - 23	24 - 25	26 - 27	≥ 28
Original Dynamic Shear (G*/sin δ), 82 ° C	1.0 min.	≥0.95	0.92 – 0.94	0.90 – 0.91	0.85 - 0.89	≤ 0.84
Softening Point, ° F	149 min.	≥145	142 - 144	140 - 141	138 - 139	≤ 137
Solubility, %	97.5 min.	≥ 97.0	96.8 – 96.9	96.6 – 96.7	96.4 – 96.5	≤ 96.3

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24970EC	Asphalt Material for Tack Non-Tracking	Ton

SPECIAL NOTE FOR EXPERIMENTAL KYCT AND HAMBURG TESTING

1.0 General

1.1 Description. The KYCT (Kentucky Method for Cracking Test) and the Hamburg test results will help determine if the mixture is susceptible to cracking and rutting. During the experimental phase, data will be gathered and analyzed by the Department to determine the durability of the bituminous mixes. Additionally, the data will help the Department to create future performance based specifications which will include the KYCT and Hamburg test methods.

2.0 Equipment

2.1 KYCT Testing Equipment. The Department will require a Marshall Test Press with digital recordation capabilities. Other CT testing equipment may be used for testing with prior approval by the Department.

2.2 Water Baths. One or more water baths will be required that can maintain a temperature of 77° +/- 1.8° F with a digital thermometer showing the water bath temperature. Also, one water bath shall have the ability to suspend gyratory specimen fully submerged in water in accordance with AASHTO T-166, current edition.

2.3 Hamburg Wheel Track Testing. The department encourages the use of the PTI APA/Hamburg Jr. test equipment to perform the loaded wheel testing. The Department will allow different equipment for the Hamburg testing, but the testing device must be approved by the Department prior to testing.

2.4 Gyratory Molds. Gyratory molds will be required to assist in the production of gyratory specimens in accordance with AASHTO T-312, current edition.

2.5 Ovens. Adequate (minimum of two ovens) will be required to accommodate the additional molds and asphalt mixture necessary to perform the acceptance testing as outlined in Section 402 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

2.6 Department Equipment. The Department will provide gyratory molds, PINE 850 Test Press with digital recordation, and CT testing equipment to assist during this experimental phase so data can be gathered. Hamburg test specimens will be submitted to the Division of Materials for testing on the PTI APA/Hamburg Jr if the asphalt contractor or district materials office does not have an approved Hamburg testing device.

3.0 Testing Requirements

3.1 Acceptance Testing. Perform all acceptance testing and aggregate gradation as according with Section 402 and Section 403 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

3.2 KYCT Testing. Perform crack resistance analysis (KYCT) in accordance with the current Kentucky Method for KYCT Index Testing during the mix design phase and during the plant production of all surface mixtures. For mix design approvals, submit KYCT results on the Department MixPack. For Class 4 mixtures, submit ingredient materials to the Division of Materials for informational verification.

3.2.1 KYCT Frequency. Obtain an adequate sample of hot mix asphalt to insure the acceptance testing, gradation, and KYCT gyratory samples can be fabricated and is representative of the bituminous mixture. Acceptance specimens shall be fabricated first, then immediately after, fabricate the KYCT samples with the gyratory compactor in accordance with Section 2.4 of this Special Note. Analysis of the KYCT specimens and gradation will be required one per subplot produced from the same asphalt material and at the same time as the acceptance specimen is sampled and tested.

3.2.2 Number of Specimens and Conditioning. Fabricate specimens in accordance with the Kentucky Method for KYCT Index Testing. Contrary to the method, fabricate a minimum of 3 and up to 6 test specimens. The specimens shall be compacted at the temperature in accordance to KM 64-411. KYCT mix design specimens shall be short-term conditioned for four hours at compaction temperature in accordance to KM 64-411. Contrary to the Kentucky Method, plant produced bituminous material shall be short-term conditioned immediately after sampling for two hours at compaction temperature in accordance to KM 64-411. Additionally, fabricated specimens shall be allowed to cool in air (fan is permissible) for 30 minutes +/- 5 minutes and conditioned in a 77 °F water bath for 30 minutes +/- 5 minutes. To insure confidence and reliability of the test results provided by KYCT testing and Hamburg testing, reheating of the asphalt mixture is prohibited.

3.2.3 Record Times. For each subplot, record the time required between drying aggregates in the plant to KYCT specimen fabrication. The production time may vary due to the time that the bituminous material is held in the silo. Record the preconditioning time when the time exceeds the one hour specimen cool down time as required in accordance to The Kentucky Method for KYCT Index Testing. The preconditioning time may exceed an hour if the technician is unable to complete the test on the same day or within the specified times as outlined in The Kentucky Method for KYCT Index Testing. The production time and the preconditioning time shall be recorded on the AMAW.

3.2.4 File Name. As according to section 7.12 of The Kentucky Method for KYCT Index Testing, save the filename with the following format; "CID_Approved Mix Number_Lot Number_Sublot Number_Date"

3.3 Hamburg Testing. Perform the rut resistance analysis (Hamburg) in accordance to AASTHO T-324, not to exceed 20,000 passes for all bituminous mixtures during the mix design phase and production. For mix design approvals, submit Hamburg results on the Department MixPack. For Class 4 mixtures, submit ingredient materials to the Division of Materials for informational verification.

3.3.1 Hamburg Testing Frequency. Perform testing and analysis per lot of material. The plant produced bituminous material sampled for the Hamburg test does not have to be obtained at the same time as the acceptance and KYCT sample. If the Hamburg test sample is not obtained at the same time as the KYCT sample, determine the Maximum Specific Gravity of the KYCT sample in accordance with AASTHO T-209 coinciding with the Hamburg specimens.

3.3.2 Record Times. Record the production time as according to section 3.2.3 in this special note. Also record the time that the specimens were fabricated and the time the Hamburg testing was started. All times shall be recorded on the AMAW.

3.3.3 File Name. Save the Excel spreadsheet with the following file name; “Hamburg_CID_Approved Mix Number_Lot Number_Sublot Number_Date” and upload the file into the AMAW.

4.0 Data

Submit the AMAW and all test data that was obtained for acceptance, gradation, KYCT, and Hamburg testing within five working days once all testing has been completed for a lot to Central Materials Lab and the District Materials Engineer. Also, any data and or comments that the asphalt contractor or district personnel deem informational during this experimental phase, shall also be submitted to the Central Materials Lab and the District Materials Engineer. Any questions or comments regarding any item in this Special Note can be directed to the Central Office, Division of Materials, Asphalt Branch.

5.0 KYCT Video Demonstration

<https://youtu.be/84j0bM45-hg>

6.0 Payment

Any additional labor and testing equipment that is required to fabricate and test the KYCT and Hamburg specimens shall be considered to be incidental to the asphalt surface line item. The Department will perform the testing for the KYCT and Hamburg specimens if a producer does not possess the proper equipment.

October 8, 2020

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

Notice of Intent (NOI) to Division of Air Quality

The roadway contractor is required to file a Notice of Intent (NOI) to the Frankfort Regional Office of the Division of Air Quality ten (10) business days (M-F) prior to the start of any demolition or rehabilitation work on the bridge superstructure (047B000047N). Please use the attached form and also submit the attached Asbestos Containing Material Inspection Report. This form may be submitted electronically.

Division of Air Quality
Frankfort Regional Office
200 Fair Oaks Ln 3rd Floor
Frankfort, KY 40601-1134
Jarrod.Bell@ky.gov

**NOTIFICATION OF ASBESTOS
ABATEMENT/DEMOLITION/RENOVATION**
(Instructions for completing form on back)

PAGE 1 OF _____
INITIAL SUBMITTAL DATE _____
REVISION DATE _____
NOTIFICATION # _____

OFFICE USE ONLY
ID # _____
LOG # _____

File this form with Regional Office where project will be performed

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

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 _____

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: _____

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 _____

Transporter _____
Address _____
City _____ State _____ Zip _____
Phone _____

Amount of ACM to be Removed:

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

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 (FACM, 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.



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
transportation.ky.gov

Andy Beshear
GOVERNOR

Jim Gray
SECRETARY

Asbestos Inspection Report

To: Joe Ferguson

District: 4

Date: November 4, 2021

Conducted By: O'Dail Lawson

Report Prepared By: O'Dail Lawson

Project and Structure Identification

Project Number: Hardin 04-0020.00

Structure ID: 047B00047N

Structure Location: KY-222 over Interstate 65

Sample Description: Any suspect materials collected were negative for asbestos.

Inspection Date: November 2, 2021

Results and Recommendations

The results of the samples collected were negative for the presence of asbestos above 1%.
No abatement is required at this time.

It is recommended that this report accompany the 10-Day Notice of Intent for Demolition ([Notification Form DEP 7036](#)) which is to be submitted to the Kentucky Division of Air Quality prior to abatement, demolition, or renovation of any building or structure in the Commonwealth.



CHC Training
Environmental Compliance Certification Experts

Colorado State Approval No. 22651

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855.60.CERTIFY

1775 W. 55th Avenue
Denver, Colorado 80221
United States of America

CERTIFICATE OF ACHIEVEMENT

This certificate is awarded to:

O'DAIL LAWSON

In recognition of satisfactory completion of the EPA-approved annual asbestos refresher training in accordance with the Model Accreditation Plan (MAP) (40 CFR Part 763, Subpart E, Appendix C), AHERA of the Toxic Substances Control Act (TSCA), and Colorado Regulation No. 8 entitled:

BUILDING INSPECTOR

COURSE COMPLETION: FEBRUARY 11, 2021
EXAMINATION DATE: FEBRUARY 11, 2021
EXPIRATION DATE: FEBRUARY 11, 2022
COURSE HOURS: 4.0

Danaya N. Wilson
CEO & Training Program Manager

Matthew Valdez
Instructor

Credential License ID:
28699399

CHC Training Certificate No.:
R21-0204-AI



Verify this Certificate



Renew this Certificate



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

RIGHT OF WAY CERTIFICATION

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

<input checked="" type="checkbox"/>	Original	<input type="checkbox"/>	Re-Certification	RIGHT OF WAY CERTIFICATION			
ITEM #		COUNTY		PROJECT # (STATE)		PROJECT # (FEDERAL)	
4-20.01		Hardin		FD52 047 0065 084-086		NH 0645(041)	
PROJECT DESCRIPTION							
IMPROVE THE SAFETY AND INCREASE THE CAPACITY OF THE I-65/KY-222 INTERCHANGE BASED ON EXISTING AND FUTURE NEEDS OF THE AREA.							
<input type="checkbox"/> 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.							
<input checked="" type="checkbox"/> 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.							
<input type="checkbox"/> 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							
<input type="checkbox"/> 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		28	EXCEPTION (S) Parcel #		ANTICIPATED DATE OF POSSESSION WITH EXPLANATION		
Number of Parcels That Have Been Acquired		26					
Signed Deed		26					
Condemnation							
Signed ROE		2					
Notes/ Comments (Use Additional Sheet if necessary)							
LPA RW Project Manager				Right of Way Supervisor			
Printed Name				Printed Name		Michaelh.Price	
Signature				Signature		2021.08.31	
Date				Date		<i>Michael H Price</i> 08:14:54 -04'00'	
Right of Way Director				FHWA			
Printed Name				Printed Name		David Whitworth	
Signature		<i>Kelly R. Divine</i>		Signature		DAVID R WHITWORTH	
Date		Digitally signed by Kelly R. Divine Date: 2021.10.08 09:27:44 -05'00'		Date		10/12/21	
				Digitally signed by DAVID R WHITWORTH Date: 2021.10.12 15:37:04 -04'00'			

UTILITIES AND RAIL CERTIFICATION NOTE

Hardin County
000NH0654041
FD52 047 7698301U
Mile point: 85.313 TO 86.064
IMPROVE THE SAFETY AND INCREASE THE CAPACITY OF THE I-65/KY-222 INTERCHANGE BASED ON EXISTING AND FUTURE NEEDS OF THE AREA. (2006BOPC)(08CCR)(10CCR)(14CCR) (2020CCR)
ITEM NUMBER: 04-20.01

PROJECT NOTES ON UTILITIES

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.

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

Kentucky Wired - Communication
East Kentucky Power Cooperative, Inc. - Electric
Brandenburg Telephone Co. - Telephone
Comcast Communications - CATV
Windstream Holdings II, LLC - Telephone
Nolin RECC – Electric
AT&T Legacy – Communication
Hardin County Water District # 2 – Water & Sanitary Sewer
LG&E - Gas

UTILITIES AND RAIL CERTIFICATION NOTE

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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

Nolin RECC –Relocation & As-built plans available via Supplemental information files. Coordinate with Nolin RECC & KYTC D4 Traffic Engineer (Justin Wallace – 270-505-5837) for removal of existing caution light at US 31W & Ky 222.

Hardin Co Water District # 2 – Water - Relocation Plans Available via Supplemental information files. Sanitary Sewer Plans available via supplemental information files.

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

AT&T Legacy – Relocation Plans Available via Supplemental information files. Phase 1 complete. Partial Phase 2 underground complete along detour ramp 5 from approx. Sta 1000+00 – 1010+00 rt. . AT&T Legacy underground facilities located along the east side of I65 throughout project corridor. Temporary overhead along proposed KY 222 approx. Sta 175+00 – 181+50 Rt., crossing proposed KY 222 at approx. Sta 181+50 continuing north along the west side of connector to Pilot Travel Center. Use extreme caution when working under temporary overhead facilities. Remaining Phase 2 to relocate temporary overhead to underground planned for completion post-roadway-construction.

Windstream – Existing Overhead & Underground Located along existing KY 222 corridor from Mud Splash Rd to West side of I65 Interchange. Existing Overhead Located along existing US 31W west side from approx. Proposed Ky 222 Sta 197+00 – 185+00 and east side of US 31W South of existing Ky 222 from approx. Sta. 9000+00 – 9012+00. **Anticipated relocation completion 6/1/2022.**

Brandenburg Telecom – Existing Overhead & Underground Located along existing KY 222 corridor from Mud Splash Rd to West side of I65 Interchange. Existing underground located along existing US 31W

UTILITIES AND RAIL CERTIFICATION NOTE

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**IMPROVE THE SAFETY AND INCREASE THE CAPACITY OF THE I-65/KY-222 INTERCHANGE BASED ON
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 ITEM NUMBER: 04-20.01**

west side from approx. Proposed Ky 222 Sta 197+00 – 185+00 and east side of US 31W South of existing Ky 222 from approx. Sta. 9000+00 – 9012+00. **Anticipated relocation completion 6/1/2022.**

Comcast – Existing Overhead & Underground Located along existing KY 222 corridor from Mud Splash Rd to West side of I65 Interchange. Overhead Located along existing US 31W east & west side from approx. Proposed Ky 222 Sta 197+00 – 185+00 and east side of US 31W South of existing Ky 222 from approx. Sta. 9000+00 – 9012+00. . **Anticipated relocation completion 6/1/2022.**

East Kentucky Power Cooperative – Transmission poles located at ramp 5a approx. Sta 5+60 Lt., detour ramp 5 approx. Sta 1008+50 Rt., ramp 7a approx. Sta 16+60 rt , and detour ramp 7 approx. Sta 2012+00 Lt. **Anticipated relocation completion 8/1/2022**

KY Wired – Located along the east side of existing US 31W from northern tie in approx. Proposed KY 222 Sta 197+00 Rt extending south along existing east side of US 31W throughout the project corridor. **Anticipated relocation completion 6/1/2022**

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

Not Applicable

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

No Rail Involvement **Rail Involved** **Rail Adjacent**

UTILITIES AND RAIL CERTIFICATION NOTE

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ITEM NUMBER: 04-20.01

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T Legacy - Communication	4500 Johnston Pkwy Cleveland, OH 44128	Don Garr	5027418374	DRGarr@Hughes.net
Brandenburg Telephone Co. - Telephone	502 West Dixie Ave Elizabethtown KY 42702	Kyle Dalton	2709824466	kyle.dalton@brandenburgtel.com
Comcast Communications - CATV	2919 Ring Rd. Elizabethtown KY 42701	Steve Gaddie	2704011543	stephen_gaddie@comcast.com
East Kentucky Power Cooperative, Inc. - Electric	P.O. Box 707 Winchester KY 40392	Rob Young	8597459601	Rob.young@ekpc.coop
Hardin County Water District #2 - Water	360 Ring Road Elizabethtown KY 42701	Forrest Pollock	2703079744	fpollock@hcwd2.org
Kentucky Wired - Communication	200 Mercer Rd. 2nd Floor Lexington KY 40511	Roger Castle	8592295403	roger.castle@ledcor.com
Nolin Rural Electric Cooperative Corp - Electric	411 Ring Road Elizabethtown KY 42701	Jeremy Jones	2702680505	jjones@nolinrecc.com
Windstream Holdings II, LLC - Telephone	130 W New Circle Rd Lexington KY 40505	Steve Johnson	8593576209	steve.johnson@windstream.com
LG&E - Gas	10300 Ballardsville Rd Louisville KY 40241	Caroline Justice	5026273708	Caroline.justice@lge-ku.com

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



Kentucky Transportation Cabinet

Highway District __ (1)

And

_____ (2), Construction

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

Groundwater protection plan

For Highway Construction Activities

For

**IMPROVE THE SAFETY AND INCREASE THE CAPACITY
OF THE I-65/KY-222 INTERCHANGE BASED ON
EXISTING AND FUTURE NEEDS OF THE AREA**

Project: CID ## - #####

KyTC BMP Plan for Project CID ## -

Project information

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

1. Owner – Kentucky Transportation Cabinet, District __ (1)
2. Resident Engineer: (2)
3. Contractor name: (2)
Address: (2)

Phone number: (2)
Contact: (2)
Contractors agent responsible for compliance with the KPDES permit requirements (3):
4. Project Control Number (2)
5. Route (Address) (1)
KY 222 @ I-65
6. Latitude/Longitude (project mid-point) dd/mm/ss, dd/mm/ss (1)
37.594722
-85.868611
7. County (project mid-point) (1)
Hardin
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

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

A. Site description:

1. Nature of Construction Activity (from letting project description) (1)

IMPROVE THE SAFETY AND INCREASE THE CAPACITY OF THE I-65/KY-222 INTERCHANGE BASED ON EXISTING AND FUTURE NEEDS OF THE AREA
2. Order of major soil disturbing activities (2) and (3)
3. Projected volume of material to be moved (1)
296,026 CY
4. Estimate of total project area (acres) (1)
98 Acres
5. Estimate of area to be disturbed (acres) (1)
98 Acres
6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.(1)
7. Data describing existing soil condition (1) & (2)

Soil Name	Soil Symbol	Hydrologic Group	Eroision Hazard
Bedford Silt Loam	Br	C/D	Moderate
Crider Silt Loam	Cr	B	Slight
Gatton Silt Loam	Gn	B	Moderate
Melvin Silt Loam	Mv	B	Severe
Newark Silt Loam	Nb	D	Severe
Nolin Silt Loam	No	B	Severe
Otwood Silt Loam	Ot	C	Severe
Sonora Silt Loam	Sn	B	Severe
Waynesboro Loam	Wb	B	Severe
Waynesboro Clay Loam	Wc	B	Severe

8. Data describing existing discharge water quality (if any) (1) & (2)
None exists
9. Receiving water name (1)

U

KyTC BMP Plan for Project CID ## -

10. TMDLs and Pollutants of Concern in Receiving Waters: (1 DEA)

No TMDLS have been developed for these receiving waters

11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.

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

KyTC BMP Plan for Project CID ## -

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.
 - 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 & 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

KyTC BMP Plan for Project CID ## -

- Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
- Non-standard or innovative methods
- Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
 - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
 - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
 - Additional Channel Lining and/or Erosion Control Blanket.
 - Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
 - Special BMP's such as Karst Policy
- Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably 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 Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are : No permanent BMPs are being proposed.

C. Other Control Measures

1. 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

KyTC BMP Plan for Project CID ## -

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:**

KyTC BMP Plan for Project CID ## -

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

The following product-specific practices will be followed onsite:

➤ **Petroleum Products:**

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

KyTC BMP Plan for Project CID ## -

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 contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean up will be disposed in accordance with appropriate regulations.

D. Other State and Local Plans

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

KyTC BMP Plan for Project CID ## -

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.
- 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.
 - Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance. (1)

F. Inspections

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

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have successfully completed the 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.

KyTC BMP Plan for Project CID ## -

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

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

H. Groundwater Protection Plan (3)

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

- Contractors statement: (3)

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

KyTC BMP Plan for Project CID ## -

_____ 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, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);

_____ 2. (g) Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

_____ 2. (j) Storing or related handling of road oils, dust suppressants,, at a central location;

_____ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

_____ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this 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

KyTC BMP Plan for Project CID ## -

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 provide 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.)

SPECIAL NOTE

Filing of eNOI for KPDES Construction Stormwater Permit

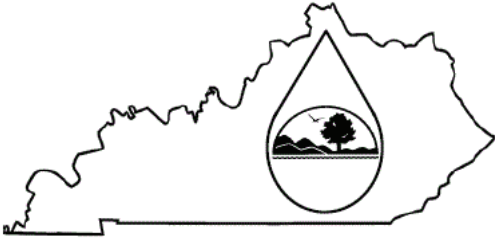
County: Hardin **Route: KY 222/ I-65**
Item No.: 4-20 **KDOW Submittal ID: 253182**

0815ce44-9b9a-4011-97ad-cc5d347b6be5

Project Description: IMPROVE THE SAFETY AND INCREASE THE CAPACITY OF THE I-65/KY-222 INTERCHANGE BASED ON EXISTING AND FUTURE NEEDS OF THE AREA

A Notice of Intent for obtaining coverage under the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) has been drafted, copy of which is attached. Upon award, the Contractor will be identified in Section III of the form as the “Building Contractor” and it will be submitted for approval to the Kentucky Division of Water. The Contractor shall be responsible for advancing the work in a manner that is compliant with all applicable and appropriate KYTC specifications for sediment and erosion control as well as meeting the requirements of the KYR10 permit and the KDOW.

If there are any questions regarding this note, please contact David Waldner, Director, Division of Environmental Analysis, TCOB, 200 Mero Street, Frankfort, KY 40622, Phone: (502) 564-7250.

	<h2 style="margin: 0;">KENTUCKY POLLUTION DISCHARGE</h2> <h3 style="margin: 0;">ELIMINATION SYSTEM (KPDES)</h3> <p style="margin: 0;">Notice of Intent (NOI) for coverage of Storm Water Discharge Associated with Construction Activities Under the KPDES Storm Water General Permit KYR100000</p> <p style="margin: 0; text-align: center;"> Click here for Instructions (Controls/KPDES_FormKYR10_Instructions.htm) </p> <p style="margin: 0; text-align: center;"> Click here to obtain information and a copy of the KPDES General Permit. (http://dep.ky.gov/formslibrary/Documents/KYR10PermitPage.pdf) </p> <p style="margin: 0; text-align: center;"> <small>(*) indicates a required field; (✓) indicates a field may be required based on user input or is an optionally required field</small> </p>
---	--

Reason for Submittal:(*) <input type="text" value="Application for New Permit Coverage"/>	Agency Interest ID: <input type="text" value="Agency Interest ID"/>	Permit Number:(✓) <input type="text" value="KPDES Permit Number"/>
--	--	---

If change to existing permit coverage is requested, describe the changes for which modification of coverage is being sought:(✓)

ELIGIBILITY:
 Stormwater discharges associated with construction activities disturbing individually one (1) acre or more, including, in the case of a common plan of development, contiguous construction activities that cumulatively equal one (1) acre or more of disturbance.

EXCLUSIONS:
 The following are excluded from coverage under this general permit:
 1) Are conducted at or on properties that have obtained an individual KPDES permit for the discharge of other wastewaters which requires the development and implementation of a Best Management Practices (BMP) plan;
 2) Any operation that the DOW determines an individual permit would better address the discharges from that operation;
 3) Any project that discharges to an Impaired Water listed in the most recent Integrated Report, §305(b) as impaired for sediment and for which an approved TMDL has been developed.

SECTION I -- FACILITY OPERATOR INFORMATION (PERMITTEE)

Company Name:(✓) <input type="text" value="KYTC Department of Highways - District 4"/>	First Name:(✓) <input type="text" value="Paul"/>	M.I.: <input type="text" value="MI"/>	Last Name:(✓) <input type="text" value="Sanders"/>
Mailing Address:(*) <input type="text" value="634 East Dixie Ave"/>	City:(*) <input type="text" value="Elizabethtown"/>	State:(*) <input type="text" value="Kentucky"/>	Zip:(*) <input type="text" value="42701"/>
eMail Address:(*) <input type="text" value="paul.sanders@ky.gov"/>	Business Phone:(*) <input type="text" value="2707665066"/>	Alternate Phone: <input type="text" value="Phone"/>	

SECTION II -- GENERAL SITE LOCATION INFORMATION

Project Name:(*) <input type="text" value="CID 21- KY 222/I-65 Interchange Relocation"/>	Status of Owner/Operator(*) <input type="text" value="State Government"/>	SIC Code(*) <input type="text" value="1611 Highway and Street Const"/>	
Company Name:(✓) <input type="text" value="KYTC Department of Highways - District 4"/>	First Name:(✓) <input type="text" value="Paul"/>	M.I.: <input type="text" value="MI"/>	Last Name:(✓) <input type="text" value="Sanders"/>
Site Physical Address:(*) <input type="text" value="KY 222 @ I-65"/>			
City:(*) <input type="text" value="Glendale"/>	State:(*) <input type="text" value="Kentucky"/>	Zip:(*) <input type="text" value="42740"/>	
County:(*) <input type="text" value="Hardin"/>	Latitude(decimal degrees)(*)DMS to DD Converter <small>(https://www.fcc.gov/media/radio/dms-decimal)</small> <input type="text" value="37.594722"/>	Longitude(decimal degrees)(*) <input type="text" value="-85.868611"/>	

SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION

Project Description:(*)

a. For single projects provide the following information

Total Number of Acres in Project:(✓) 98	Total Number of Acres Disturbed:(✓) 98
Anticipated Start Date:(✓) <input type="text"/>	Anticipated Completion Date:(✓) <input type="text"/>

b. For common plans of development provide the following information

Total Number of Acres in Project:(✓) # Acre(s)	Total Number of Acres Disturbed:(✓) # Acre(s)
Number of individual lots in development, if applicable:(✓) # lot(s)	Number of lots in development:(✓) # lot(s)
Total acreage of lots intended to be developed:(✓) Project Acres	Number of acres intended to be disturbed at any one time:(✓) Disturbed Acres
Anticipated Start Date:(✓) <input type="text"/>	Anticipated Completion Date:(✓) <input type="text"/>

List Building Contractor(s) at the time of Application:(*)

+	Company Name		

SECTION IV -- IF THE PERMITTED SITE DISCHARGES TO A WATER BODY THE FOLLOWING INFORMATION IS REQUIRED ?

Discharge Point(s):

	Unnamed Tributary?	Latitude	Longitude	Receiving Water Name		Delete
1	Yes	37.594076	-85.594076	Nolin River		Delete
2	Yes	37.59158	-85.864721	Jackson Branch		Delete
3	Yes	37.591307	-85.864795	Jackson Branch		Delete
4	Yes	37.591178	-85.864913	Jackson Branch		Delete
5	Yes	37.594582	-85.864924	Nolin River		Delete
6	Yes	37.593926	-85.864938	Nolin River		Delete
7	Yes	37.591247	-85.865125	Jackson Branch		Delete
8	Yes	37.594403	-85.865376	Nolin River		Delete
9	Yes	37.594204	-85.866702	Nolin River		Delete
10	Yes	37.599966	-85.867456	Nolin River		Delete

SECTION V -- IF THE PERMITTED SITE DISCHARGES TO A MS4 THE FOLLOWING INFORMATION IS REQUIRED ?

Name of MS4: <input type="text"/>											
Date of application/notification to the MS4 for construction site permit coverage: Date	Discharge Point(s):(*) <table border="1" style="width:100%"> <thead> <tr> <th style="width:5%">+</th> <th style="width:15%">Latitude</th> <th style="width:15%">Longitude</th> <th style="width:15%"> </th> <th style="width:15%"> </th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	+	Latitude	Longitude							
+	Latitude	Longitude									

SECTION VI -- WILL THE PROJECT REQUIRE CONSTRUCTION ACTIVITIES IN A WATER BODY OR THE RIPARIAN ZONE?

Will the project require construction activities in a water body or the riparian zone?: (*)	Yes
If Yes, describe scope of activity: (✓)	Highway Construction
Is a Clean Water Act 404 permit required?:(*)	Yes

Is a Clean Water Act 401 Water Quality Certification required?:(*)	Yes <input type="button" value="v"/>
--	--------------------------------------

SECTION VII -- NOI PREPARER INFORMATION			
First Name:(*) Joseph	M.I.: MI	Last Name:(*) Ferguson	Company Name:(*) KYTC Department of Highways - District 4
Mailing Address:(*) 634 East Dixie Ave	City:(*) Elizabethtown	State:(*) Kentucky <input type="button" value="v"/>	Zip:(*) 42701
eMail Address:(*) joseph.ferguson@ky.gov	Business Phone:(*) 2707665066	Alternate Phone: Phone	

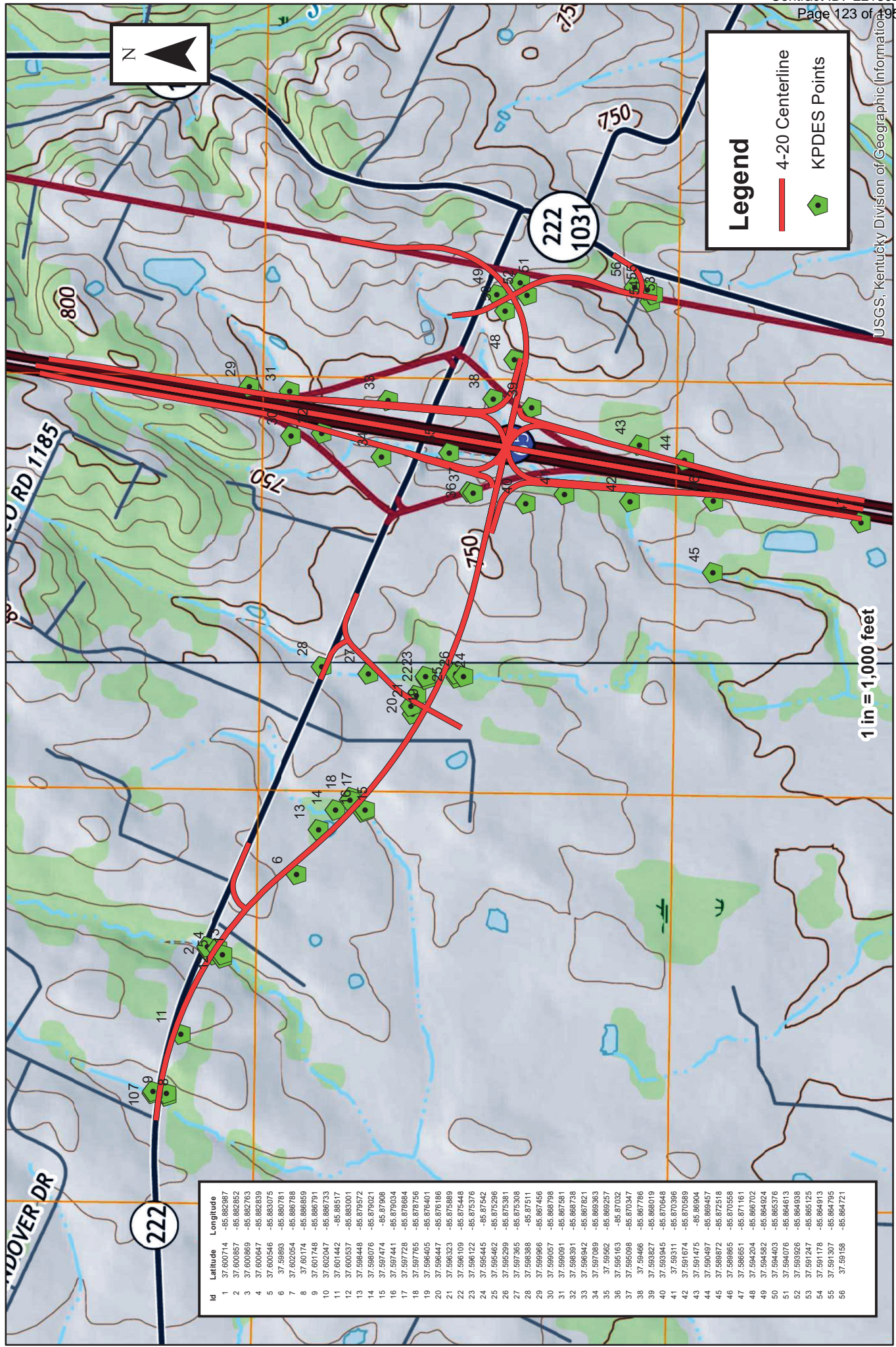
SECTION VIII -- ATTACHMENTS	
Facility Location Map:(*)	<input type="button" value="Upload file"/>
Supplemental Information:	<input type="button" value="Upload file"/>

SECTION IX -- CERTIFICATION

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 gather and evaluate 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 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.

Signature:(*) Paul Sanders	Title:(*) Chief District Engineer		
First Name:(*) Paul	M.I.: MI	Last Name:(*) Sanders	
eMail Address:(*) paul.sanders@ky.gov	Business Phone:(*) 2707665066	Alternate Phone: Phone	Signature Date:(*) Date

4-20 - I-65 Glendale Interchange Relocation



Id	Latitude	Longitude
1	37.600714	-85.892987
2	37.600857	-85.892852
3	37.600869	-85.892763
4	37.600847	-85.892839
5	37.600546	-85.893075
6	37.600693	-85.890781
7	37.602654	-85.888788
8	37.601174	-85.888659
9	37.601748	-85.888191
10	37.602047	-85.888733
11	37.601442	-85.885517
12	37.600537	-85.893001
13	37.598448	-85.879572
14	37.598076	-85.879021
15	37.597474	-85.879008
16	37.597441	-85.879034
17	37.597728	-85.878684
18	37.597765	-85.878756
19	37.596405	-85.876401
20	37.596447	-85.876186
21	37.596323	-85.875989
22	37.596109	-85.875448
23	37.596122	-85.875376
24	37.595445	-85.875242
25	37.595462	-85.875296
26	37.595299	-85.875381
27	37.597365	-85.875308
28	37.598388	-85.875111
29	37.599966	-85.867456
30	37.599057	-85.868798
31	37.599091	-85.867581
32	37.598391	-85.868738
33	37.596942	-85.867821
34	37.597089	-85.869363
35	37.595662	-85.869257
36	37.595163	-85.870232
37	37.595098	-85.870347
38	37.594666	-85.867786
39	37.593827	-85.868019
40	37.593945	-85.870648
41	37.593311	-85.870396
42	37.591674	-85.870589
43	37.591475	-85.869604
44	37.590497	-85.869457
45	37.589872	-85.872518
46	37.589865	-85.870558
47	37.586651	-85.871161
48	37.594204	-85.866702
49	37.594582	-85.864924
50	37.594403	-85.865376
51	37.594076	-85.864613
52	37.593526	-85.864938
53	37.591247	-85.865125
54	37.591178	-85.864913
55	37.591307	-85.864795
56	37.591598	-85.864721



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059
FAX: (502) 315-6677
<http://www.lrl.usace.army.mil/>

December 19, 2019

Regulatory Division
South Branch (RDS)
ID No. LRL-2019-284-ncc

Mr. Greg Preece
Kentucky Transportation Cabinet, DEA
200 Mero Street
Frankfort, Kentucky 40622

Dear Mr. Preece:

This is in regard to your application for a Department of the Army (DA) permit concerning a proposal to reconstruct the I-65 and KY 222 interchange, and the realignment of a portion of KY 222 in Glendale, Hardin County, Kentucky. The project would include the construction of 13 culverts and 10 channel changes. We have reviewed your application and have made the following determinations: the work is minor in nature, will not have a significant impact on the environment, and should encounter no opposition.

Based on these determinations, your proposed work satisfies the Letter of Permission (LOP) criteria, as specified in our regulations. Therefore, you are authorized, in accordance with 33 USC 403, to place fill material into approximately 3,579 linear feet of unnamed perennial tributaries, 799 linear feet of unnamed intermittent tributaries, and 1,029 linear feet of unnamed ephemeral tributaries of the Nolin River, respectively. In addition, the proposed project would impact 1.06 acre of adjacent wetlands and 0.03 acre of open water ponds. This permission is granted with the following Special Conditions:

- a. The project shall be constructed in accordance with the plans included in the March 28, 2019 application for KYTC Item No. 4-2.0 and all subsequent information received regarding changes to the original submittal.
- b. To compensate for stream and wetland impacts, KYTC shall provide a receipt from the Kentucky Department of Fish and Wildlife Resources (KDFWR) Stream and Wetland Mitigation In-Lieu Fee Program for the purchase of 7,056 stream AMUs and 2.5 wetland AMUs. AMUs must be purchased prior to the discharge of fill into "waters of the U.S." The Corps ID number LRL-2019-284-ncc must accompany the payment. Inquiries regarding credit purchase may be made directly to KDFWR by calling Mr. Clifford Scott (502) 564-5101, by email at Clifford.scott@ky.gov, or in writing at Kentucky Department of Fish and Wildlife Resources, Division of Fisheries, #1 Sportsman's Lane, Frankfort, Kentucky 40601.
- c. To minimize potential adverse effects on gray bat foraging habitat, the permittee shall comply


with the sediment and erosion control measures provided within pages 9-10 of the Biological Assessment for the project.

- d. The permittee shall comply with the enclosed transmittal of the General WQC for the Letter of Permission Authorizing Transportation Projects for the Kentucky Transportation Cabinet, dated May 29, 2019.
- e. The time limit for completing the work authorized ends on **December 19, 2024**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.
- f. Upon completion of construction you are to notify the District Engineer. The enclosed Completion Report form must be completed and returned to this office.
- g. You must agree to comply with the enclosed General Conditions.

This authorization will be effective as soon as we receive your signed acceptance of these conditions. Please sign and date the duplicate copy of this letter in the space provided and return the scanned signed copy via email to norma.c.condra@usace.army.mil. Note that we also perform periodic inspections to ensure compliance with our permit conditions and appropriate Federal laws.

Copies of this letter will be sent to the appropriate coordinating agencies (see enclosure for addresses).

FOR THE DISTRICT ENGINEER:


David Baldrige
Chief, South Branch
Regulatory Division

Enclosures

(I accept the conditions of this authorization):



Kentucky Transportation Cabinet

11-24-2020

Date

AUTHORIZED AGENT

Mr. Richard Clausen
Redwing Ecological Services, Inc.
1139 South Fourth Street
Louisville, Kentucky 40203

COORDINATING AGENCIES

Mr. Duncan Powell
USEPA, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-8960

Mr. Lee Andrews
U.S. Fish & Wildlife Service
JC Watts Federal Building
330 West Broadway, Room 265
Frankfort, KY 40601

Ms. Stephanie Hayes
Kentucky Energy & Environment Cabinet
Division of Water
300 Sower Boulevard, 3rd Floor
Frankfort, KY 40601

Mr. Craig Potts
Executive Director
State Historic Preservation Officer
Kentucky Heritage Council
300 Washington Street
Frankfort, KY 40601

Mr. Gregory Johnson, Commissioner
Kentucky Department of Fish and Wildlife Resources
#1 Sportsman's Lane
Frankfort, KY 40601

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
REGULATORY DIVISION
P. O. BOX 59
LOUISVILLE, KY 40201-0059
(502) 315-6733
COMPLETION REPORT

COE ID No. _____ LRL- _____ Date. _____
Permittee Name: _____ Corporate Name: _____ Address: _____ _____ _____ City _____ State _____ Zip Code _____ Telephone No. _____
Agent Name: _____ Corporate Name: _____ Address: _____ _____ _____ City _____ State _____ Zip Code _____ Telephone No. _____
Location Description: _____ _____ _____ County _____ State _____
Linear Feet of Stream Impact: _____ Acres of Wetland Impact: _____
Has all the work on this project been completed according to plans, specifications, and conditions of the permit? Yes _____ No _____
If not, explain: _____ _____ _____ _____ _____ _____
_____ Permittee Signature

PART II
SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

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>

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.

- 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/=>=>=>/	/MIN/SPEED/**MPH/
/KEEP/LEFT/<=<=</	/ICY/BRIDGE/AHEAD/ /ONE
/LOOSE/GRAVEL/AHEAD/	LANE/BRIDGE/AHEAD/
/RD WORK/NEXT/**MILES/	/ROUGH/ROAD/AHEAD/
/TWO WAY/TRAFFIC/AHEAD/	/MERGING/TRAFFIC/AHEAD/
/PAINT/CREW/AHEAD/	/NEXT/**/MILES/
/REDUCE/SPEED/**MPH/	/HEAVY/TRAFFIC/AHEAD/
/BRIDGE/WORK/**0 FT/	/SPEED/LIMIT/**MPH/
/MAX/SPEED/**MPH/	/BUMP/AHEAD/
/SURVEY/PARTY/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

11

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:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

SPECIAL NOTE FOR TURF REINFORCING MAT

1.0 DESCRIPTION. Install turf reinforcement mat at locations specified in the Contract or as the Engineer directs. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction, current edition.

2.0 MATERIALS.

2.1 Turf Reinforcement Mat (TRM). Use a Turf Reinforcement Mat defined as permanent rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh and/or other elements, processed into a three-dimensional matrix of sufficient thickness and from the Department's List of Approved Materials. Mats must be 100% UV stabilized materials. For TRMs containing degradable components, all physical property values must be obtained on the non-degradable portion of the matting exclusively. Ensure product labels clearly show the manufacturer or supplier name, style name, and roll number. Ensure labeling, shipment and storage follows ASTM D-4873. The Department will require manufacturer to provide TRMs that are machine constructed web of mechanically or melt bonded nondegradable fibers entangled to form a three dimensional matrix. The Department will require all long term performance property values in table below to be based on non degradable portion of the matting alone. Approved methods include polymer welding, thermal or polymer fusion, or placement of fibers between two high strength biaxially oriented nets mechanically bound by parallel stitching with polyolefin thread. Ensure that mats designated in the plans as Type 4 mats, are not to be manufactured from discontinuous or loosely held together by stitching or glued netting or composites. Type 4 mats shall be composed of geosynthetic matrix that exhibits a very high interlock and reinforcement capacities with both soil and root systems and with high tensile modulus. The Department will require manufacturer to use materials chemically and biologically inert to the natural soil environments conditions. Ensure the blanket is smolder resistant without the use of chemical additives. When stored, maintain the protective wrapping and elevate the mats off the ground to protect them from damage. The Department will not specify these materials for use in heavily acidic coal seam areas or other areas with soil problems that would severally limit vegetation growth.

- A) Dimensions. Ensure TRMs are furnished in strips with a minimum width of 4 feet and length of 50 feet.
- B) Weight. Ensure that all mat types have a minimum mass per unit area of 7 ounces per square yard according to ASTM D 6566.
- C) Performance Testing: The Department will require AASHTO's NTPEP index testing. The Department will also require the manufacturer to perform internal MARV testing at a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory for tensile strength, tensile elongation, mass per unit area, and thickness once every 24,000 yds of production or whatever rate is required to ensure 97.7% confidence under ASTM D4439& 4354. The Department will require Full scale testing for slope and channel applications shear stress shall be done under ASTM D 6459, ASTM D 6460-07 procedures.

2.2 Classifications

The basis for selection of the type of mat required will be based on the long term shear stress level of the mat of the channel in question or the degree of slope to protect and will be designated in the contract. The Type 4 mats are to be used at structural backfills protecting critical

structures, utility cuts, areas where vehicles may be expected to traverse the mat, channels with large heavy drift, and where higher factors of safety, very steep slopes and/or durability concerns are needed as determined by project team and designer and will be specified in the plans by designer.

Turf Reinforcement Matting					
Properties ¹	Type 1	Type 2	Type 3	Type 4	Test Method
Minimum tensile Strength lbs/ft	125	150	175	3000 by 1500	ASTM D6818 ²
UV stability (minimum % tensile retention)	80	80	80	90	ASTM D4355 ³ (1000-hr exposure)
Minimum thickness (inches)	0.25	0.25	0.25	0.40	ASTM D6525
Slopes applications	2H:1V or flatter	1.5H:1V or flatter	1H:1V or flatter	1 H: 1V or greater	
Shear stress lbs/ft ² Channel applications	6.0 ⁴	8.0 ⁴	10.0 ⁴	12.0 ⁴	ASTM D6459 ASTM D6460-07

¹ For TRMs containing degradable components, all physical property values must be obtained on the non-degradable portion of the matting alone.

²Minimum Average Roll Values for tensile strength of sample material machine direction.

³Tensile Strength percentage retained after stated 1000 hr duration of exposure under ASTM D4355 testing. Based on nondegradable components exclusively.

⁴Maximum permissible shear design values based on short-term (0.5 hr) vegetated data obtained by full scale flume testing ASTM D6459, D6460-07. Based on nondegradable components exclusively. Testing will be done at Independent Hydraulics Facility such as Colorado State University hydraulics laboratory, Utah State University hydraulics laboratory, Texas Transportation Institute (TTI) hydraulics and erosion control laboratory.

2.3 Quality Assurance Sampling, Testing, and Acceptance

- A) Provide TRM listed on the Department’s List of Approved Materials. Prior to inclusion on the LAM, the manufacturer of TRM must meet the physical and performance criteria as outlined in the specification and submit a Letter Certifying compliance of the product under the above ASTM testing procedures and including a copy of report from Full Scale Independent Hydraulics Facility that Fully Vegetated Shear Stress meets shear stress requirements tested under D6459 and D6460-07.
- B) Contractors will provide a Letter of Certification from Manufacturer stating the product name, manufacturer, and that the product MARV product unit testing results meets Department criteria. Provide Letters once per project and for each product.
- C) Acceptance shall be in accordance with ASTM D-4759 based on testing performed by a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory using Procedure A of ASTM D-4354.

Current mats meeting the above criteria are shown on the Department's List of Approved Materials.

2.4 Fasteners. When the mat manufacturer does not specify a specific fastener, use steel wire U-shaped staples with a minimum diameter of 0.09 inches (11 gauge), a minimum width of one inch and a minimum length of 12 inches. Use a heavier gauge when working in rocky or clay soils and longer lengths in sandy soils as directed by Engineer or Manufacturer's Representative. Provide staples with colored tops when requested by the Engineer.

3.0 CONSTRUCTION. When requested by the Engineer, provide a Manufacturer's Representative on-site to oversee and approve the initial installation of the mat. When requested by the Engineer, provide a letter from the Manufacturer approving the installation. When there is a conflict between the Department's criteria and the Manufacturer's criteria, construct using the more restrictive. The Engineer and Manufacturer's Representative must approve all alternate installation methods prior to execution. Construct according to the Manufacturer's recommendations and the following as minimum installation technique:

3.1 Site Preparation. Grade areas to be treated with matting and compact. Remove large rocks, soil clods, vegetation, roots, and other sharp objects that could keep the mat from intimate contact with subgrade. Prepare seedbed by loosening the top 2 to 3 inch of soil.

3.2 Installation. Install mats according to Standard Drawing Sepias "Turf Mat Channel Installation" and "Turf Mat Slope Installation." Install mats at the specified elevation and alignment. Anchor the mats with staples with a minimum length of 12 inches. Use longer anchors for installations in sandy, loose, or wet soils as directed by the Engineer or Manufacturer's Representative. The mat should be in direct contact with the soil surface.

4.0 MEASUREMENT. The Department will measure the quantity of Turf Reinforcement Mat by the square yard of surface covered. The Department will not measure preparation of the bed, providing a Manufacturer's Representative, topsoil, or seeding for payment and will consider them incidental to the Turf Reinforcement Mat. The Department will not measure any reworking of slopes or channels for payment as it is considered corrective work and incidental to the Turf Reinforcement Mat. Seeding and protection will be an incidental item.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
23274EN11F	Turf Reinforcement Mat 1	Square Yard
23275EN11F	Turf Reinforcement Mat 2	Square Yard
23276EN11F	Turf Reinforcement Mat 3	Square Yard
23277EN11F	Turf Reinforcement Mat 4	Square Yard

June 15, 2012

SPECIAL NOTE FOR BARCODE LABEL ON PERMANENT SIGNS

1.0 DESCRIPTION. Install barcode label on sheeting signs. Section references herein are to the Department’s Standard Specifications for Road and Bridge Construction, current edition.

2.0 MATERIALS. The Department will provide the Contractor with a 2 inch x 1 inch foil barcode label for each permanent sheeting sign. A unique number will be assigned to each barcode label.

The Contractor shall contact the Operations and Pavement Management Branch in the Division of Maintenance at (502) 564-4556 to obtain the barcode labels.

3.0 CONSTRUCTION. Apply foil barcode label in the lower right quadrant of the sign back. Signs where the bottom edge is not parallel to the ground, the lowest corner of the sign shall serve as the location to place the barcode label. The barcode label shall be placed no less than one-inch and no more than three inches from any edge of the sign. The barcode must be placed so that the sign post does not cover the barcode label.

Barcodes shall be applied in an indoor setting with a minimum air temperature of 50°F or higher. Prior to application of the barcode label, the back of the sign must be clean and free of dust, oil, etc. If the sign is not clean, an alcohol swab shall be used to clean the area. The area must be allowed to dry prior to placement of the barcode label.

Data for each sign shall include the barcode number, MUTCD reference number, sheeting manufacturer, sheeting type, manufacture date, color of primary reflective surface, installation date, latitude and longitude using the North American Datum of 1983 (NAD83) or the State Plane Coordinates using an x and y ordinate of the installed location.

Data should be provided electronically on the TC 71-229 Sign Details Information and TC 71-230 Sign Assembly Information forms. The Contractor may choose to present the data in a different format provided that the information submitted to the Department is equivalent to the information required on the Department TC forms. The forms must be submitted in electronic format regardless of which type of form is used. The Department will not accept PDF or handwritten forms. These completed forms must be submitted to the Department prior to final inspection of the signs. The Department will not issue formal acceptance for the project until the TC 71-229 and TC-230 electronic forms are completed for all signs and sign assemblies on the project.

4.0 MEASUREMENT. The Department will measure all work required for the installation of the barcode label and all work associated with completion and submission of the sign inventory data (TC 71-229 and TC 71-230).

The installation of the permanent sign will be measured in accordance to Section 715.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

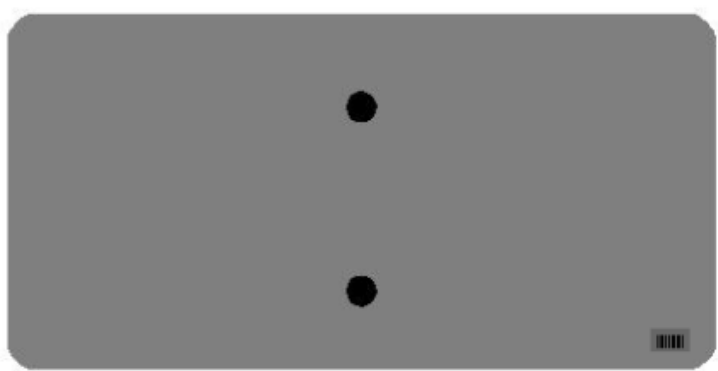
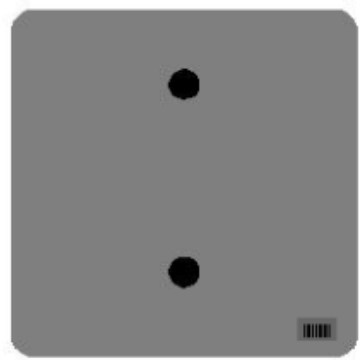
<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24631EC	Barcode Sign Inventory	Each

The Department will not make payment for this item until all barcodes are installed and sign inventory is complete on every permanent sign installed on the project. The Department will make payment for installation of the permanent sign in accordance to Section 715. The Department will consider payment as full compensation for all work required under this special note.

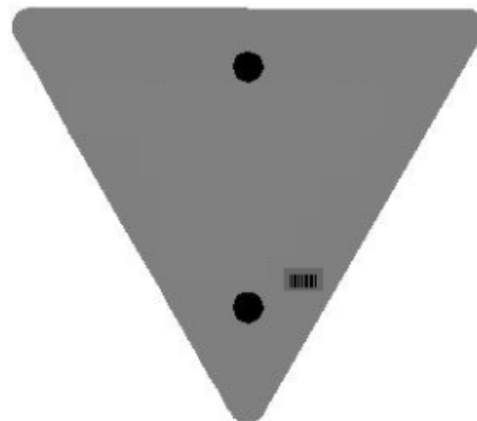
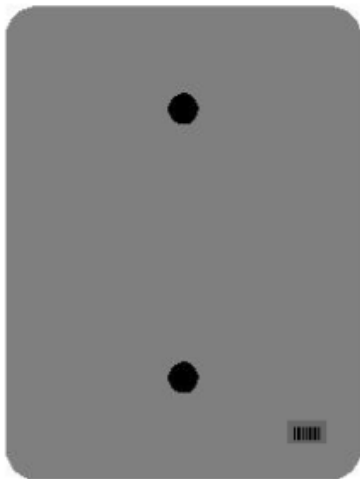
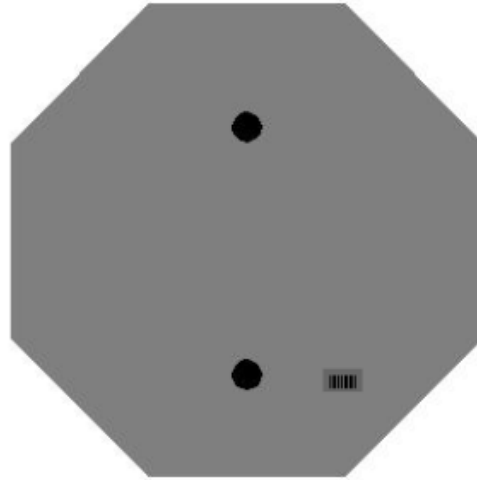
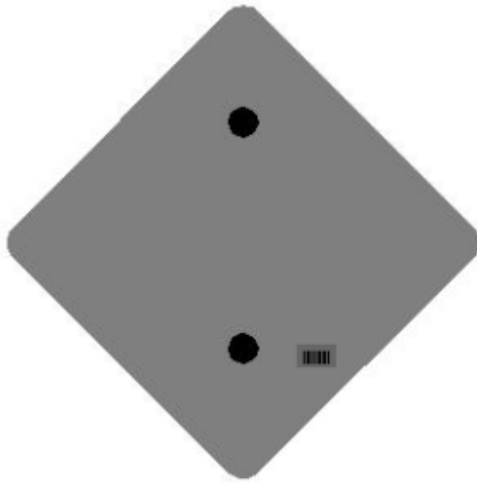
One Sign Post



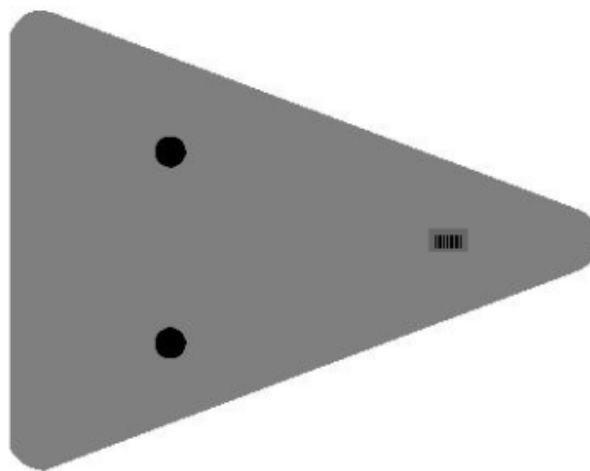
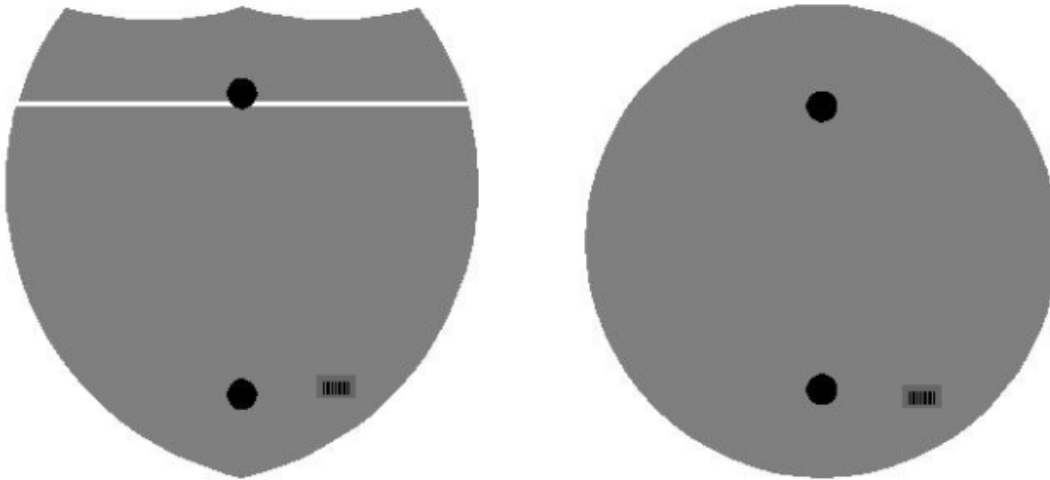
↑
2" Wide Post



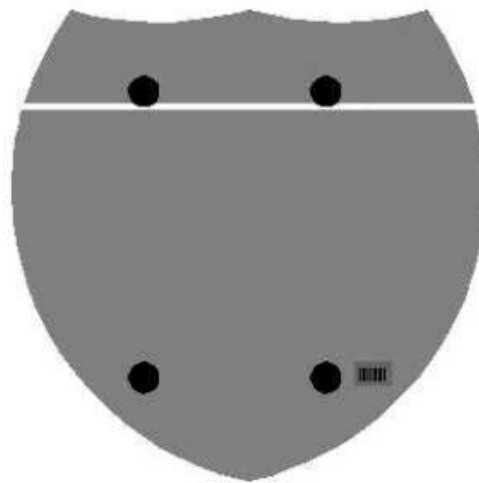
One Sign Post



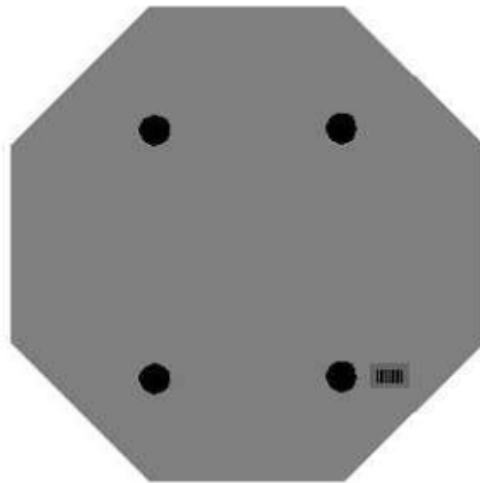
One Sign Post



Double Sign Post



Interstate
Shield

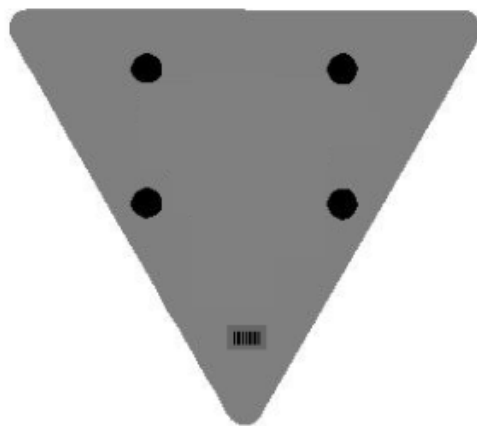


48" Stop

2 Post Signs



↑
2" Wide Post



SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE

1. DESCRIPTION. This specification covers the requirements and practices for applying an asphalt adhesive material to the longitudinal joint of the surface course of an asphalt pavement. Apply the adhesive to the face of longitudinal joint between driving lanes for the first lane paved. Then, place and compact the adjacent lane against the treated face to produce a strong, durable, waterproof longitudinal joint.
2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

Property	Specification	Test Procedure
Viscosity, 400 ° F (Pa·s)	4.0 – 10.0	ASTM D 4402
Cone Penetration, 77 ° F	60 – 100	ASTM D 5329
Flow, 140 ° F (mm)	5.0 max.	ASTM D 5329
Resilience, 77 ° F (%)	30 min.	ASTM D 5329
Ductility, 77 ° F (cm)	30.0 min.	ASTM D 113
Ductility, 39 ° F (cm)	30.0 min.	ASTM D 113
Tensile Adhesion, 77 ° F (%)	500 min.	ASTM D 5329, Type II
Softening Point, ° F	171 min.	AASHTO T 53
Asphalt Compatibility	Pass	ASTM D 5329

Ensure the temperature of the pavement joint adhesive is between 380 and 410 °F when the material is extruded in a 0.125-inch-thick band over the entire face of the longitudinal joint.

2.2. Equipment.

2.2.1 Melter Kettle. Provide an oil-jacketed, double-boiler, melter kettle equipped with any needed agitation and recirculating systems.

2.2.2 Applicator System. Provide a pressure-feed-wand applicator system with an applicator shoe attached.

2.3 Personnel. Ensure a technical representative from the manufacturer of the pavement joint adhesive is present during the initial construction activities and available upon the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the pavement joint adhesive, ensure the face of the longitudinal joint is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the joint face by the use of compressed air.

Ensure this preparation process occurs shortly before application to prevent the return of debris on the joint face.

3.2 Pavement Joint Adhesive Application. Ensure the ambient temperature is a minimum of 40 ° F during the application of the pavement joint adhesive. Prior to applying the adhesive, demonstrate competence in applying the adhesive according to this note to the satisfaction of the Engineer. Heat the adhesive in the melter kettle to the specified temperature range. Pump the adhesive from the melter kettle through the wand onto the vertical face of the cold joint. Apply the adhesive in a continuous band over the entire face of the longitudinal joint. Do not use excessive material in either thickness or location. Ensure the edge of the extruded adhesive material is flush with the surface of the pavement. Then, place and compact the adjacent lane against the joint face. Remove any excessive material extruded from the joint after compaction (a small line of material may remain).

3.3 Pavement Joint Adhesive Certification. Furnish the joint adhesive's certification to the Engineer stating the material conforms to all requirements herein prior to use.

3.4 Sampling and Testing. The Department will require a random sample of pavement joint adhesive from each manufacturer's lot of material. Extrude two 5 lb. samples of the heated material and forward the sample to the Division of Materials for testing. Reynolds oven bags, turkey size, placed inside small cardboard boxes or cement cylinder molds have been found suitable. Ensure the product temperature is 400°F or below at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.
5. PAYMENT. The Department will pay for the Pavement Joint Adhesive at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

Pavement Joint Adhesive Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Joint Adhesive Referenced in Subsection 2.1.1						
Viscosity, 400 ° F (Pa•s) ASTM D 3236	4.0-10.0	3.5-10.5	3.0-3.4 10.6-11.0	2.5-2.9 11.1-11.5	2.0-2.4 11.6-12.0	≤1.9 ≥ 12.1
Cone Penetration, 77 ° F ASTM D 5329	60-100	57-103	54-56 104-106	51-53 107-109	48-50 110-112	≤ 47 ≥ 113
Flow, 140 ° F (mm) ASTM D 5329	≤ 5.0	≤ 5.5	5.6-6.0	6.1-6.5	6.6-7.0	≥ 7.1
Resilience, 77 ° F (%) ASTM D 5329	≥ 30	≥ 28	26-27	24-25	22-23	≤ 21
Tensile Adhesion, 77 ° F (%) ASTM D 5329	≥ 500	≥ 490	480-489	470-479	460-469	≤ 459
Softening Point, ° F AASHTO T 53	≥ 171	≥ 169	166-168	163-165	160-162	≤ 159
Ductility, 77 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9
Ductility, 39 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9

Code
20071EC

Pay Item
Joint Adhesive

Pay Unit
Linear Foot

May 7, 2014

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:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
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 May 1, 2012

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

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. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 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.

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (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).

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

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.

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.

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). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

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 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal 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).

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

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.

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 (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 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 35 and 29 CFR 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.

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, 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 who 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.

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, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure 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. 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, 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, 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 there under. 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, 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 and 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. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 contracting agency deems appropriate.

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 \$10,000 or more.

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, 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). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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

a. All laborers and mechanics employed or working upon the site of the work, 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 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.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. 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 shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). 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 classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall 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.(1) The contracting officer shall 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 shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore 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 utilized 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) 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 shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. 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.

(3) 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 shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall 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.

c. 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 shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. 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, 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.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, 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.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, 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 section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) 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 section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall 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. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed 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 Regulations, 29 CFR part 3;

(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 of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, 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 may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed 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 Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall 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 the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall 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, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. 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. 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 journeymen 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.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 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.

9. Disputes concerning labor standards. 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 he or she) 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 section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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 watchmen 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.

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. 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 watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 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.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or 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, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

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" 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:

- (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.

2. 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. 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.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

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 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.

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 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).

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 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 1, 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

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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.

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.

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.

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.

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 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee 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 grantee or subgrantee 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.

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.

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. 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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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. 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) 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;

(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; 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.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. 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)

a. By signing and submitting this proposal, the prospective lower tier 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.

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 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 grantee or subgrantee 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 grantee or subgrantee 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.

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.

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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

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.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

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 administering 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, 3 Fountain Place, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: January 27, 2017

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," (Attachment 1), and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

The number of trainees to be trained under these special provisions and in this contract is shown in "Special Notes Applicable to Project" in the bid proposal.

In the event that a contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction the contractor shall submit to the Kentucky Transportation Cabinet, Department of Highways for its approval, an acceptable training program on forms provided by the Cabinet indicating the number of trainees to be trained in each selected classification. Failure to provide the Cabinet with the proper documentation evidencing an acceptable training program prior to commencing construction shall cause the Cabinet to suspend the operations of the contractor with (if applicable) working days being charged as usual against the contract time or (if applicable), no additional contract time being granted for the suspension period. The Cabinet will not be liable for the payment of any work performed during the suspension period due to the failure of the contractor to provide an acceptable training program. Said suspension period shall be terminated when an acceptable training program is received by the Cabinet. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeymen status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case. The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Kentucky Transportation Cabinet, Department of Highways and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs

registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed for each hour of training given an employee on this contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

General Decision Number: KY20220038 01/07/2022

Superseded General Decision Number: KY20210038

State: Kentucky

Construction Type: Highway

Counties: Anderson, Bath, Bourbon, Boyd, Boyle, Bracken, Breckinridge, Bullitt, Carroll, Carter, Clark, Elliott, Fayette, Fleming, Franklin, Gallatin, Grant, Grayson, Greenup, Hardin, Harrison, Henry, Jefferson, Jessamine, Larue, Lewis, Madison, Marion, Mason, Meade, Mercer, Montgomery, Nelson, Nicholas, Oldham, Owen, Robertson, Rowan, Scott, Shelby, Spencer, Trimble, Washington and Woodford 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 \$15.00 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 2022.

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 \$11.25 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 2022.

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 www.dol.gov/whd/govcontracts.

Modification Number

0

Publication Date

01/07/2022

KY20220038 Mod 0 - 01/07/2022

BRIN0004-003 06/01/2021

BRECKENRIDGE COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 29.57	15.10

BRKY0001-005 06/01/2021

BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE,
MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, & TRIMBLE
COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 29.57	15.10

BRKY0002-006 06/01/2021

BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 30.87	15.87

BRKY0007-004 06/01/2021

BOYD, CARTER, ELLIOT, FLEMING, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 32.03	20.05

BRKY0017-004 06/01/2021

ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN,
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,
OWEN, SCOTT, WASHINGTON & WOODFORD COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 30.87	15.87

CARP0064-001 04/01/2020

	Rates	Fringes
CARPENTER.....	\$ 29.81	19.96
Diver.....	\$ 45.09	19.96
PILEDRIVERMAN.....	\$ 30.06	19.96

ELEC0212-008 06/07/2021

BRACKEN, GALLATIN and GRANT COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 32.32	19.85

ELEC0212-014 11/25/2019

BRACKEN, GALLATIN & GRANT COUNTIES:

	Rates	Fringes
Sound & Communication Technician.....	\$ 24.35	12.09

ELEC0317-012 06/01/2021

BOYD, CARTER, ELLIOT & ROWAN COUNTIES:

	Rates	Fringes
ELECTRICIAN (Wiremen).....	\$ 35.10	27.47

ELEC0369-007 05/31/2021

ANDERSON, BATH, BOURBON, BOYLE, BRECKINRIDGE, BULLITT, CARROLL,
CLARK, FAYETTE, FRAONKLIN, GRAYSON, HARDIN, HARRISON, HENRY,
JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER,
MONTGOMERY, NELSON, NICHOLAS, OLDHAM, OWEN, ROBERTSON, SCOTT,
SHELBY, SPENCER, TRIMBLE, WASHINGTON, & WOODFORD COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 33.85	18.72

* **ELEC0575-002** 11/29/2021

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 35.00	19.76

ENGI0181-018 07/01/2021

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 34.80	17.85
GROUP 2.....	\$ 31.94	17.85
GROUP 3.....	\$ 32.39	17.85
GROUP 4.....	\$ 31.62	17.85

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 Concrete 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 leads equals or exceeds 150 ft. - \$1.00 over 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.

IRON0044-009 06/01/2021

BRACKEN, GALLATIN, GRANT, HARRISON, ROBERTSON,
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);
CARROLL (Eastern third, including the Township of Ghent);
FLEMING (Western part, excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);
NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);
SCOTT (Northern two-thirds, including Townships of Biddle, Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall)

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 29.75	21.60
Structural.....	\$ 31.32	21.60

IRON0070-006 06/01/2021

ANDERSON, BOYLE, BRECKINRIDGE, BULLITT, FAYETTE, FRANKLIN,
 GRAYSON, HARDIN, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON,
 MARION, MEADE, MERCER, NELSON, OLDHAM, SHELBY, SPENCER,
 TRIMBLE, WASHINGTON & WOODFORD
 BOURBON (Southern two-thirds, including Townships of Austerlity,
 Centerville, Clintonville, Elizabeth, Hutchison, Littlerock,
 North Middletown & Paris);
 CARROLL (Western two-thirds, including Townships of Carrollton,
 Easterday, English, Locust, Louis, Prestonville & Worthville);
 CLARK (Western two-thirds, including Townships of Becknerville,
 Flanagan, Ford, Pine Grove, Winchester & Wyandotte);
 OWEN (Eastern eighth, including Townships of Glenmary, Gratz,
 Monterey, Perry Park & Tacketts Mill);
 SCOTT (Southern third, including Townships of Georgetown, Great
 Crossing, Newtown, Stamplng Ground & Woodlake);

	Rates	Fringes
IRONWORKER.....	\$ 31.09	23.75

IRON0769-007 06/01/2021

BATH, BOYD, CARTER, ELLIOTT, GREENUP, LEWIS, MONTGOMERY & ROWAN
CLARK (Eastern third, including townships of Bloomingdale,
Hunt, Indian Fields, Kiddville, Loglick, Rightangele & Thomson);
FLEMING (Townships of Beechburg, Colfax, Elizaville,
Flemingsburg, Flemingsburg Junction, Foxport, Grange City,
Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton,
Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains,
Ringos Mills, Tilton & Wallingford);
MASON (Eastern third, including Townships of Helena, Marshall,
Orangeburg, Plumville & Springdale);
NICHOLAS (Eastern eighth, including the Township of Moorefield
Sprout)

	Rates	Fringes
IRONWORKER		
ZONE 1.....	\$ 33.00	27.29
ZONE 2.....	\$ 33.40	27.29
ZONE 3.....	\$ 35.00	27.29

ZONE 1 - (no base rate increase) Up to 10 mile radius of
Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 2 - (add \$0.40 per hour to base rate) 10 to 50 mile
radius of Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 3 - (add \$2.00 per hour to base rate) 50 mile radius &
over of Union Hall, 1643 Greenup Ave, Ashland, KY.

LABO0189-003 07/01/2021

BATH, BOURBON, BOYD, BOYLE, BRACKEN, CARTER, CLARK, ELLIOTT,
FAYETTE, FLEMING, FRANKLIN, GALLATIN, GRANT, GREENUP, HARRISON,
JESSAMINE, LEWIS, MADISON, MASON, MERCER, MONTGOMERY, NICHOLAS,
OWEN, ROBERTSON, ROWAN, SCOTT, & WOOLFORD COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.51	16.22
GROUP 2.....	\$ 23.76	16.22
GROUP 3.....	\$ 23.81	16.22
GROUP 4.....	\$ 24.41	16.22

LABORERS 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; Bushhammer; 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; 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

LABO0189-008 07/01/2021

ANDERSON, BULLITT, CARROLL, HARDIN, HENRY, JEFFERSON, LARUE,
MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE &
WASHINGTON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.51	16.22
GROUP 2.....	\$ 23.76	16.22
GROUP 3.....	\$ 23.81	16.22
GROUP 4.....	\$ 24.41	16.22

LABORERS 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; Bushhammer; 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; 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

LABO0189-009 07/01/2021

BRECKINRIDGE & GRAYSON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.51	16.22
GROUP 2.....	\$ 23.76	16.22
GROUP 3.....	\$ 23.81	16.22
GROUP 4.....	\$ 24.41	16.22

LABORERS 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; Bushhammer; 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; 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

PAIN0012-005 06/11/2005

BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN,
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,
ROBERTSON, SCOTT & WOODFORD COUNTIES:

	Rates	Fringes
PAINTER		
Bridge/Equipment Tender and/or Containment Builder..\$	18.90	5.90
Brush & Roller.....\$	21.30	5.90
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement.....\$	22.30	5.90
Sandblasting & Waterblasting.....\$	22.05	5.90
Spray.....\$	21.80	5.90

PAIN0012-017 05/01/2015

BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:

	Rates	Fringes
PAINTER (Heavy & Highway Bridges - Guardrails - Lightpoles - Striping)		
Bridge Equipment Tender and Containment Builder.....\$	20.73	9.06
Brush & Roller.....\$	23.39	9.06
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement.....\$	24.39	9.06
Sandblasting & Water Blasting.....\$	24.14	9.06
Spray.....\$	23.89	9.06

PAIN0118-004 06/01/2018

ANDERSON, BRECKINRIDGE, BULLITT, CARROLL, GRAYSON, HARDIN,
HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY,
SPENCER, TRIMBLE & WASHINGTON COUNTIES:

	Rates	Fringes
PAINTER		
Brush & Roller.....\$	22.00	12.52
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning.....\$	23.00	12.52

PAIN1072-003 12/01/2018

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS and ROWAN COUNTIES

Rates Fringes

Painters:

Bridges; Locks; Dams;		
Tension Towers & Energized		
Substations.....	\$ 33.33	18.50
Power Generating Facilities.	\$ 30.09	18.50

PLUM0248-003 06/01/2021

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:

Rates Fringes

Plumber and Steamfitter.....	\$ 38.00	21.60
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PLUM0392-007 06/01/2018

BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN & ROBERTSON COUNTIES:

Rates Fringes

Plumbers and Pipefitters.....	\$ 32.01	19.67
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PLUM0502-003 08/01/2021

BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN (Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES

Rates Fringes

PLUMBER.....	\$ 38.07	20.78
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SUKY2010-160 10/08/2001

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 16.57	7.34
GROUP 2.....	\$ 16.68	7.34
GROUP 3.....	\$ 16.86	7.34
GROUP 4.....	\$ 16.96	7.34

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Mobile Batch Truck Tender

GROUP 2 - Greaser; Tire Changer; & Mechanic Tender

GROUP 3 - Single Axle Dump; Flatbed; Semi-trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Distributor; Mixer; & Truck Mechanic

GROUP 4 - Euclid & Other Heavy Earthmoving Equipment & Lowboy; Articulator Cat; 5-Axle Vehicle; Winch & A-Frame when used in transporting materials; Ross Carrier; Forklift when used to transport building materials; & Pavement Breaker

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 www.dol.gov/whd/govcontracts.

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 Division National Office Branch of Wage Surveys. 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 DECISION

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

Overtime is to be paid to an employee at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek. Wage violations or questions should be directed to the designated Engineer or the undersigned.

Director
Division of Construction Procurement
Frankfort, Kentucky 40622
502-564-3500

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(Executive Order 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
9.6%	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 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 shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. The notification shall be mailed to:

**Evelyn Teague, Regional Director
Office of Federal Contract Compliance Programs
61 Forsyth Street, SW, Suite 7B75
Atlanta, Georgia 30303-8609**

4. As used in this Notice, and in the contract resulting from this solicitation, the "**covered area**" is Hardin County.

PART IV
INSURANCE

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

PART V
BID ITEMS

PROPOSAL BID ITEMS

221302

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Report Date 1/4/22

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	4,251.00	TON		\$	
0020	00003		CRUSHED STONE BASE	81,176.00	TON		\$	
0030	00003		CRUSHED STONE BASE FOR STAMPED CONCRETE MEDIAN	1,170.00	TON		\$	
0040	00008		CEMENT STABILIZED ROADBED	11,292.00	SQYD		\$	
0050	00013		LIME STABILIZED ROADBED	117,356.00	SQYD		\$	
0060	00014		LIME	2,247.00	TON		\$	
0070	00018		DRAINAGE BLANKET-TYPE II-ASPH	6,557.00	TON		\$	
0080	00100		ASPHALT SEAL AGGREGATE	318.00	TON		\$	
0090	00103		ASPHALT SEAL COAT	56.00	TON		\$	
0100	00212		CL2 ASPH BASE 1.00D PG64-22	4,501.00	TON		\$	
0110	00214		CL3 ASPH BASE 1.00D PG64-22	1,553.00	TON		\$	
0120	00217		CL4 ASPH BASE 1.00D PG64-22	40,864.00	TON		\$	
0130	00219		CL4 ASPH BASE 1.00D PG76-22	20,047.00	TON		\$	
0140	00301		CL2 ASPH SURF 0.38D PG64-22	1,241.00	TON		\$	
0150	00339		CL3 ASPH SURF 0.38D PG64-22	592.00	TON		\$	
0160	00342		CL4 ASPH SURF 0.38A PG76-22	8,872.00	TON		\$	
0170	00358		ASPHALT CURING SEAL	212.00	TON		\$	
0180	02101		CEM CONC ENT PAVEMENT-8 IN	637.00	SQYD		\$	
0190	02542		CEMENT	220.00	TON		\$	
0200	02702		SAND FOR BLOTTER	325.00	TON		\$	
0210	20071EC		JOINT ADHESIVE	42,506.00	LF		\$	
0220	24970EC		ASPHALT MATERIAL FOR TACK NON- TRACKING	152.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0230	00078		CRUSHED AGGREGATE SIZE NO 2	38,360.00	TON		\$	
0240	01000		PERFORATED PIPE-4 IN	7,580.00	LF		\$	
0250	01010		NON-PERFORATED PIPE-4 IN	360.00	LF		\$	
0260	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS		\$	
0270	01024		PERF PIPE HEADWALL TY 2-4 IN	3.00	EACH		\$	
0280	01028		PERF PIPE HEADWALL TY 3-4 IN	30.00	EACH		\$	
0290	01032		PERF PIPE HEADWALL TY 4-4 IN	5.00	EACH		\$	
0300	01310		REMOVE PIPE	72.00	LF		\$	
0310	01762		MANHOLE TYPE B MOD	1.00	EACH		\$	
0320	01810		STANDARD CURB AND GUTTER	2,937.00	LF		\$	
0330	01875		STANDARD HEADER CURB	182.00	LF		\$	
0340	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	94.00	EACH		\$	
0350	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	4.00	EACH		\$	
0360	01984		DELINEATOR FOR BARRIER - WHITE	40.00	EACH		\$	
0370	01985		DELINEATOR FOR BARRIER - YELLOW	8.00	EACH		\$	
0380	01986		DELINEATOR FOR BARRIER WALL-B/Y	4.00	EACH		\$	
0390	02002		REMOVE TEMP CONC BARRIER WALL	18,140.00	LF		\$	

PROPOSAL BID ITEMS

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Report Date 1/4/22

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0400	02003		RELOCATE TEMP CONC BARRIER	2,350.00	LF		\$	
0410	02081		JPC PAVEMENT-8 IN SHLD	88.00	SQYD		\$	
0420	02091		REMOVE PAVEMENT	49,098.00	SQYD		\$	
0430	02159		TEMP DITCH	29,211.00	LF		\$	
0440	02160		CLEAN TEMP DITCH	26,048.00	LF		\$	
0450	02220		FLOWABLE FILL	102.00	CUYD		\$	
0460	02223		GRANULAR EMBANKMENT	3,567.00	CUYD		\$	
0470	02230		EMBANKMENT IN PLACE	387,830.00	CUYD		\$	
0480	02237		DITCHING	1,000.00	LF		\$	
0490	02242		WATER	479.00	MGAL		\$	
0500	02262		FENCE-WOVEN WIRE TYPE 1	15,090.00	LF		\$	
0510	02265		REMOVE FENCE	6,353.00	LF		\$	
0520	02367		GUARDRAIL END TREATMENT TYPE 1	5.00	EACH		\$	
0530	02369		GUARDRAIL END TREATMENT TYPE 2A	11.00	EACH		\$	
0540	02373		GUARDRAIL END TREATMENT TYPE 3	1.00	EACH		\$	
0550	02381		REMOVE GUARDRAIL	6,409.00	LF		\$	
0560	02391		GUARDRAIL END TREATMENT TYPE 4A	7.00	EACH		\$	
0570	02397		TEMP GUARDRAIL	3,200.00	LF		\$	
0580	02429		RIGHT-OF-WAY MONUMENT TYPE 1	67.00	EACH		\$	
0590	02432		WITNESS POST	9.00	EACH		\$	
0600	02483		CHANNEL LINING CLASS II	4,263.00	TON		\$	
0610	02484		CHANNEL LINING CLASS III	266.00	TON		\$	
0620	02545		CLEARING AND GRUBBING (80 ACRES)	1.00	LS		\$	
0630	02555		CONCRETE-CLASS B	15.00	CUYD		\$	
0640	02562		TEMPORARY SIGNS	1,494.00	SQFT		\$	
0650	02570		PROJECT CPM SCHEDULE	1.00	LS		\$	
0660	02585		EDGE KEY	571.00	LF		\$	
0670	02602		FABRIC-GEOTEXTILE CLASS 1	2,638.00	SQYD		\$	
0680	02603		FABRIC-GEOTEXTILE CLASS 2	127,000.00	SQYD		\$	
0690	02607		FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	10,150.00	SQYD	\$2.00	\$	\$20,300.00
0700	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0710	02651		DIVERSIONS (BY-PASS DETOURS) M.O.T. TEMP RAMP 5 DIVERSION	1.00	LS		\$	
0720	02651		DIVERSIONS (BY-PASS DETOURS) M.O.T. TEMP RAMP 7 DIVERSION	1.00	LS		\$	
0730	02651		DIVERSIONS (BY-PASS DETOURS) M.O.T. TEMP RAMP 7A DIVERSION	1.00	LS		\$	
0740	02653		LANE CLOSURE	4.00	EACH		\$	
0750	02671		PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH		\$	
0760	02690		SAFELOADING	86.00	CUYD		\$	
0770	02692		SETTLEMENT PLATFORM	2.00	EACH		\$	
0780	02696		SHOULDER RUMBLE STRIPS	34,494.00	LF		\$	
0790	02701		TEMP SILT FENCE	29,211.00	LF		\$	
0800	02703		SILT TRAP TYPE A	120.00	EACH		\$	
0810	02704		SILT TRAP TYPE B	120.00	EACH		\$	
0820	02705		SILT TRAP TYPE C	69.00	EACH		\$	
0830	02706		CLEAN SILT TRAP TYPE A	465.00	EACH		\$	
0840	02707		CLEAN SILT TRAP TYPE B	465.00	EACH		\$	
0850	02708		CLEAN SILT TRAP TYPE C	159.00	EACH		\$	
0860	02726		STAKING	1.00	LS		\$	

PROPOSAL BID ITEMS

221302

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0870	02731		REMOVE STRUCTURE EX. 6' X 5' RCBC @ I-65 STA. 664+84, 142' LT.	1.00	LS		\$	
0880	02731		REMOVE STRUCTURE EX. 6' X 6' RCBC @ I-65 STA. 665+07, 122+50 LT.	1.00	LS		\$	
0890	02731		REMOVE STRUCTURE EX. 8' X 5' RCBC @ I-65 STA. 665+07, 148' LT.	1.00	LS		\$	
0900	02731		REMOVE STRUCTURE EX. KY 222 BRIDGE @ I-65 (STA. 664+60)	1.00	LS		\$	
0910	02775		ARROW PANEL	2.00	EACH		\$	
0920	02898		RELOCATE CRASH CUSHION	2.00	EACH		\$	
0930	02900		INSTALL TEMP CRASH CUSHION	6.00	EACH		\$	
0940	02929		CRASH CUSHION TYPE IX	2.00	EACH		\$	
0950	03171		CONCRETE BARRIER WALL TYPE 9T	18,140.00	LF		\$	
0960	05950		EROSION CONTROL BLANKET	23,178.00	SQYD		\$	
0970	05952		TEMP MULCH	494,339.00	SQYD		\$	
0980	05953		TEMP SEEDING AND PROTECTION	381,976.00	SQYD		\$	
0990	05963		INITIAL FERTILIZER	26.00	TON		\$	
1000	05964		MAINTENANCE FERTILIZER	15.90	TON		\$	
1010	05985		SEEDING AND PROTECTION	465,675.00	SQYD		\$	
1020	05989		SPECIAL SEEDING CROWN VETCH	35,266.00	SQYD		\$	
1030	05992		AGRICULTURAL LIMESTONE	167.00	TON		\$	
1040	06401		FLEXIBLE DELINEATOR POST-M/W	80.00	EACH		\$	
1050	06404		FLEXIBLE DELINEATOR POST-M/Y	40.00	EACH		\$	
1060	06412		STEEL POST MILE MARKERS	4.00	EACH		\$	
1070	06511		PAVE STRIPING-TEMP PAINT-6 IN	8,000.00	LF		\$	
1080	06514		PAVE STRIPING-PERM PAINT-4 IN	2,486.00	LF		\$	
1090	06541		PAVE STRIPING-THERMO-4 IN Y	5,688.00	LF		\$	
1100	06542		PAVE STRIPING-THERMO-6 IN W	39,065.00	LF		\$	
1110	06543		PAVE STRIPING-THERMO-6 IN Y	30,491.00	LF		\$	
1120	06546		PAVE STRIPING-THERMO-12 IN W	5,216.00	LF		\$	
1130	06568		PAVE MARKING-THERMO STOP BAR-24IN	463.00	LF		\$	
1140	06572		PAVE MARKING-DOTTED LANE EXTEN	3,498.00	LF		\$	
1150	06573		PAVE MARKING-THERMO STR ARROW	7.00	EACH		\$	
1160	06574		PAVE MARKING-THERMO CURV ARROW	75.00	EACH		\$	
1170	06575		PAVE MARKING-THERMO COMB ARROW	10.00	EACH		\$	
1180	06585		PAVEMENT MARKER TY IVA-MW TEMP	251.00	EACH		\$	
1190	06586		PAVEMENT MARKER TY IVA-MY TEMP	1,004.00	EACH		\$	
1200	06588		PAVEMENT MARKER TY IVA-BY TEMP	110.00	EACH		\$	
1210	06610		INLAID PAVEMENT MARKER-MW	256.00	EACH		\$	
1220	06612		INLAID PAVEMENT MARKER-BY	76.00	EACH		\$	
1230	06613		INLAID PAVEMENT MARKER-B W/R	229.00	EACH		\$	
1240	06614		INLAID PAVEMENT MARKER-B Y/R	116.00	EACH		\$	
1250	10020NS		FUEL ADJUSTMENT	250,479.00	DOLL	\$1.00	\$	\$250,479.00
1260	10030NS		ASPHALT ADJUSTMENT	297,478.00	DOLL	\$1.00	\$	\$297,478.00
1270	20072ES805		GRANULAR EMBANKMENT FOR POND STABILIZATION	135.00	TON		\$	
1280	20099ES842		PAVE MARK TEMP PAINT STOP BAR	30.00	LF		\$	
1290	20191ED		OBJECT MARKER TY 3	11.00	EACH		\$	
1300	21289ED		LONGITUDINAL EDGE KEY	3,600.00	LF		\$	
1310	21370ED		LONGITUDINAL SAW CUT- 6 IN	7,665.00	LF		\$	

PROPOSAL BID ITEMS

221302

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1320	21430ES508		CONC MEDIAN BARRIER TYPE 12C(50)	145.00	LF		\$	
1330	21597EN		REMOVE PERF PIPE HEADWALL	19.00	EACH		\$	
1340	21802EN		G/R STEEL W BEAM-S FACE (7 FT POST)	5,675.00	LF		\$	
1350	21935EN		REMOVE CONC MEDIAN BARRIER	321.00	LF		\$	
1360	22692NS714		PAVEMENT MARKING-THERMO LETTERS FOR CAR	19.00	EACH		\$	
1370	22692NS714		PAVEMENT MARKING-THERMO LETTERS FOR TRUCK	15.00	EACH		\$	
1380	23274EN11F		TURF REINFORCEMENT MAT 1	26,977.00	SQYD		\$	
1390	23276EN11F		TURF REINFORCEMENT MAT 3	59.00	SQYD		\$	
1400	23379EC		STAMPED CONCRETE RED	2,543.00	SQYD		\$	
1410	23649EC		DRAIN POND	1.00	LS		\$	
1420	24679ED		PAVE MARK THERMO CHEVRON	7,902.00	SQFT		\$	
1430	24814EC		PIPELINE INSPECTION	5,817.00	LF		\$	
1440	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	4.00	EACH		\$	
1450	25116EC		BORE AND JACK PIPE-54 IN	175.00	LF		\$	
1460	26136EC		PORTABLE QUEUE WARNING ALERT SYSTEM	27.00	MONT		\$	
1470	26137EC		QUEUE WARNING PCMS	108.00	MONT		\$	
1480	26138EC		QUEUE WARNING PORTABLE RADAR SENSORS	108.00	MONT		\$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1490	00440		ENTRANCE PIPE-15 IN	896.00	LF		\$	
1500	00441		ENTRANCE PIPE-18 IN	68.00	LF		\$	
1510	00460		CULVERT PIPE-12 IN	56.00	LF		\$	
1520	00461		CULVERT PIPE-15 IN	50.00	LF		\$	
1530	00462		CULVERT PIPE-18 IN	1,099.00	LF		\$	
1540	00464		CULVERT PIPE-24 IN	349.00	LF		\$	
1550	00466		CULVERT PIPE-30 IN	150.00	LF		\$	
1560	00468		CULVERT PIPE-36 IN	105.00	LF		\$	
1570	00469		CULVERT PIPE-42 IN	135.00	LF		\$	
1580	00470		CULVERT PIPE-48 IN	248.00	LF		\$	
1590	00471		CULVERT PIPE-54 IN	550.00	LF		\$	
1600	00474		CULVERT PIPE-72 IN	319.00	LF		\$	
1610	00521		STORM SEWER PIPE-15 IN	229.00	LF		\$	
1620	00522		STORM SEWER PIPE-18 IN	1,212.00	LF		\$	
1630	00528		STORM SEWER PIPE-36 IN	134.00	LF		\$	
1640	00531		STORM SEWER PIPE-54 IN	269.00	LF		\$	
1650	00982		SLOTTED DRAIN PIPE-18 IN	532.00	LF		\$	
1660	01204		PIPE CULVERT HEADWALL-18 IN	2.00	EACH		\$	
1670	01210		PIPE CULVERT HEADWALL-30 IN	1.00	EACH		\$	
1680	01214		PIPE CULVERT HEADWALL-42 IN	1.00	EACH		\$	
1690	01216		PIPE CULVERT HEADWALL-48 IN	2.00	EACH		\$	
1700	01220		PIPE CULVERT HEADWALL-60 IN	1.00	EACH		\$	
1710	01390		METAL END SECTION TY 3-15 IN	24.00	EACH		\$	
1720	01391		METAL END SECTION TY 3-18 IN	7.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1730	01433		SLOPED BOX OUTLET TYPE 1-18 IN	4.00	EACH		\$	
1740	01450		S & F BOX INLET-OUTLET-18 IN SLOPED & FLARED HEADWALL -18"	8.00	EACH		\$	
1750	01451		S & F BOX INLET-OUTLET-24 IN SLOPED & FLARED HEADWALL - 24"	8.00	EACH		\$	
1760	01480		CURB BOX INLET TYPE B	6.00	EACH		\$	
1770	01487		CURB BOX INLET TYPE F	1.00	EACH		\$	
1780	01490		DROP BOX INLET TYPE 1	3.00	EACH		\$	
1790	01493		DROP BOX INLET TYPE 2	1.00	EACH		\$	
1800	01496		DROP BOX INLET TYPE 3	3.00	EACH		\$	
1810	01517		DROP BOX INLET TYPE 5F	4.00	EACH		\$	
1820	01538		DROP BOX INLET TYPE 7	2.00	EACH		\$	
1830	01643		JUNCTION BOX-24 IN	1.00	EACH		\$	
1840	01644		JUNCTION BOX-30 IN	1.00	EACH		\$	
1850	01645		JUNCTION BOX-36 IN	2.00	EACH		\$	
1860	01648		JUNCTION BOX-54 IN	1.00	EACH		\$	
1870	02607		FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	4,673.00	SQYD	\$2.00	\$	\$9,346.00
1880	02625		REMOVE HEADWALL	8.00	EACH		\$	
1890	02690		SAFELOADING	5.00	CUYD		\$	
1900	20211ES706		BORE & JACK PIPE	169.00	LF		\$	
1910	24026EC		PIPE CULVERT HEADWALL-54 IN	3.00	EACH		\$	

Section: 0004 - BRIDGE - #26569

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1920	02223		GRANULAR EMBANKMENT	12,770.00	CUYD		\$	
1930	02231		STRUCTURE GRANULAR BACKFILL	827.00	CUYD		\$	
1940	03299		ARMORED EDGE FOR CONCRETE	367.60	LF		\$	
1950	08003		FOUNDATION PREPARATION BRIDGE OVER I-65	1.00	LS		\$	
1960	08018		RETAINING WALL	16,223.00	SQFT		\$	
1970	08033		TEST PILES	207.00	LF		\$	
1980	08039		PRE-DRILLING FOR PILES	9,796.00	LF		\$	
1990	08046		PILES-STEEL HP12X53	3,908.00	LF		\$	
2000	08051		PILES-STEEL HP14X89	5,682.00	LF		\$	
2010	08094		PILE POINTS-12 IN	90.00	EACH		\$	
2020	08095		PILE POINTS-14 IN	80.00	EACH		\$	
2030	08100		CONCRETE-CLASS A	921.50	CUYD		\$	
2040	08104		CONCRETE-CLASS AA	1,244.50	CUYD		\$	
2050	08150		STEEL REINFORCEMENT	103,424.00	LB		\$	
2060	08151		STEEL REINFORCEMENT-EPOXY COATED	426,291.00	LB		\$	
2070	08634		PRECAST PC I BEAM TYPE 4	3,826.00	LF		\$	
2080	23378EC		CONCRETE SEALING	56,479.00	SQFT		\$	
2090	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	388.00	LF		\$	
2100	26160EC		INTERMEDIATE FOUNDATION IMPROVEMENTS	1.00	LS		\$	
2110	26161EC		INT FDN IMPROVEMENT VERIFICATION TESTING	1.00	LS		\$	

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Section: 0005 - BRIDGE - CULVERT #27218

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2120	02403		REMOVE CONCRETE MASONRY	5.20	CUYD		\$	
2130	08003		FOUNDATION PREPARATION (27218)	1.00	LS		\$	
2140	08100		CONCRETE-CLASS A	46.60	CUYD		\$	
2150	08150		STEEL REINFORCEMENT	3,076.00	LB		\$	

Section: 0006 - BRIDGE - CULVERT #27219

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2160	08003		FOUNDATION PREPARATION (27219)	1.00	LS		\$	
2170	08100		CONCRETE-CLASS A	89.60	CUYD		\$	
2180	08150		STEEL REINFORCEMENT	7,485.00	LB		\$	

Section: 0007 - BRIDGE - CULVERT #27220

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2190	08003		FOUNDATION PREPARATION (27220)	1.00	LS		\$	
2200	08100		CONCRETE-CLASS A	82.30	CUYD		\$	
2210	08150		STEEL REINFORCEMENT	7,412.00	LB		\$	

Section: 0008 - BRIDGE - CULVERT #27221

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2220	08003		FOUNDATION PREPARATION (27221)	1.00	LS		\$	
2230	08100		CONCRETE-CLASS A	163.10	CUYD		\$	
2240	08150		STEEL REINFORCEMENT	13,881.00	LB		\$	

Section: 0009 - BRIDGE - CULVERT #27222

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2250	02403		REMOVE CONCRETE MASONRY	3.10	CUYD		\$	
2260	08003		FOUNDATION PREPARATION (27223)	1.00	LS		\$	
2270	08100		CONCRETE-CLASS A	58.60	CUYD		\$	
2280	08150		STEEL REINFORCEMENT	4,305.00	LB		\$	

Section: 0010 - BRIDGE - CULVERT #27223

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2290	08003		FOUNDATION PREPARATION (27223)	1.00	LS		\$	
2300	08100		CONCRETE-CLASS A	134.20	CUYD		\$	
2310	08150		STEEL REINFORCEMENT	9,514.00	LB		\$	

Section: 0011 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2320	04903		REFERENCE MARKER	4.00	EACH		\$	
2330	06405		SBM ALUMINUM PANEL SIGNS	180.00	SQFT		\$	
2340	06406		SBM ALUM SHEET SIGNS .080 IN	686.00	SQFT		\$	
2350	06407		SBM ALUM SHEET SIGNS .125 IN	412.00	SQFT		\$	
2360	06410		STEEL POST TYPE 1	1,632.00	LF		\$	
2370	06441		GMSS GALV STEEL TYPE C	3,820.00	LB		\$	
2380	06451		REMOVE SIGN SUPPORT BEAM	14.00	EACH		\$	
2390	06490		CLASS A CONCRETE FOR SIGNS	12.00	CUYD		\$	
2400	06491		STEEL REINFORCEMENT FOR SIGNS	904.00	LB		\$	
2410	20418ED		REMOVE & RELOCATE SIGNS	6.00	EACH		\$	
2420	20419ND		ROADWAY CROSS SECTION	7.00	EACH		\$	
2430	21373ND		REMOVE SIGN	1.00	EACH		\$	
2440	21596ND		GMSS TYPE D	4.00	EACH		\$	
2450	24631EC		BARCODE SIGN INVENTORY	198.00	EACH		\$	

Section: 0012 - SIGNALIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2460	04820		TRENCHING AND BACKFILLING	240.00	LF		\$	
2470	04845		CABLE-NO. 14/7C	7,700.00	LF		\$	
2480	04886		MESSENGER-15400 LB	1,910.00	LF		\$	
2490	04932		INSTALL STEEL STRAIN POLE	12.00	EACH		\$	
2500	06472		INSTALL SPAN MOUNTED SIGN	3.00	EACH		\$	
2510	20188NS835		INSTALL LED SIGNAL-3 SECTION	37.00	EACH		\$	
2520	20189NS835		INSTALL LED SIGNAL-5 SECTION	3.00	EACH		\$	
2530	20390NS835		INSTALL COORDINATING UNIT	3.00	EACH		\$	
2540	23157EN		TRAFFIC SIGNAL POLE BASE	48.00	CUYD		\$	
2550	24901EC		PVC CONDUIT-2 IN-SCHEDULE 80	240.00	LF		\$	
2560	24908EC		INSTALL SIGNAL CONTROLLER-TY ATC	3.00	EACH		\$	
2570	26119EC		INSTALL RADAR PRESENCE DETECTOR TYPE A	12.00	EACH		\$	
2580	26120EC		INSTALL RADAR ADVANCE DETECTOR TYPE B	2.00	EACH		\$	

Section: 0013 - LIGHTING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2590	04714		POLE 120 FT MTG HT HIGH MAST	10.00	EACH		\$	
2600	04761		LIGHTING CONTROL EQUIPMENT	2.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2610	04797		CONDUIT-3 IN	1,100.00	LF		\$	
2620	04800		MARKER	18.00	EACH		\$	
2630	04820		TRENCHING AND BACKFILLING	5,600.00	LF		\$	
2640	04860		CABLE-NO. 8/3C DUCTED	3,900.00	LF		\$	
2650	04873		POLE 45 FT WOODEN	2.00	EACH		\$	
2660	04940		REMOVE LIGHTING	1.00	LS		\$	
2670	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	2.00	EACH		\$	
2680	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	2.00	EACH		\$	
2690	20410ED		MAINTAIN LIGHTING	1.00	LS		\$	
2700	21543EN		BORE AND JACK CONDUIT	1,100.00	LF		\$	
2710	23161EN		POLE BASE-HIGH MAST	100.00	CUYD		\$	
2720	24749EC		HIGH MAST LED LUMINAIRE	46.00	EACH		\$	
2730	24851EC		CABLE-NO. 10/3C DUCTED	6,000.00	LF		\$	

Section: 0014 - TRAINEES

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2740	02742		TRAINEE PAYMENT REIMBURSEMENT 1-GROUP 2, 3 OR 4 OPERATOR	1,400.00	HOUR		\$	

Section: 0015 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2750	02568		MOBILIZATION	1.00	LS		\$	
2760	02569		DEMOBILIZATION	1.00	LS		\$	