CALL NO. 104

CONTRACT ID. 191062

GREENUP COUNTY

FED/STATE PROJECT NUMBER STP BRZ 0903 (190)

DESCRIPTION BELLEFONTE STREET(KY-244)

WORK TYPE BRIDGE WITH GRADE, DRAIN & SURFACE

PRIMARY COMPLETION DATE 315 WORKING DAYS

LETTING DATE: October 25,2019

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME October 25,2019. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

DBE CERTIFICATION REQUIRED - 5%

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

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PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 09

CONTRACT ID - 191062

STP BRZ 0903 (190)

COUNTY - GREENUP

PCN - DE04502441962
STP BRZ 0903 (190)

BELLEFONTE STREET(KY-244) (MP 0.000) ADDRESS DEFICIENCIES OF BRIDGE ON KY-244(MP 0.103) OVER CSX RAILROAD .05 MILE NORTHEAST OF JCT US-23 (MP 0.207), A DISTANCE OF 0.80 MILES.BRIDGE WITH GRADE, DRAIN & SURFACE SYP NO. 09-01073.00.

GEOGRAPHIC COORDINATES LATITUDE 38:31:35.00 LONGITUDE 84:40:20.00

COMPLETION DATE(S):

315 WORKING Days	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.

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 on federally assisted projects shall be permitted. However, in the case of DBE’s, second tier subcontracts will only be permitted where the other subcontractor is also a DBE. All second tier subcontracts shall have the consent of both the Contractor and the Engineer.

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 certainly whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the Disadvantaged Enterprise Business Liaison Officer (DEBLO) in the Office 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:

- 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 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.

7/19/2019

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.

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.

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.

SPECIAL NOTE FOR ARCHITECTURAL TREATMENT

1.0 DESCRIPTION. This work consists of constructing textured surfaces simulating natural cut stone masonry as designated in the Plans or Contract Documents to receive Architectural Treatment. The work shall be performed in accordance with the applicable provisions of the Standard Specifications, the Plans, and as described herein.

2.0 FORMED TEXTURED SURFACES. Where Architectural Treatment is designated, concrete surfaces shall be formed using a form lining system made of high-strength urethane elastomer, or thermoformed rigid polymer materials capable of withstanding anticipated concrete pore pressures without leakage or causing physical defects. Formliners shall attach easily to forms and be removable without causing concrete surface damage. The liners shall be designed to form surfaces conforming to the design intent including the shape, lines and dimensions described herein and in the Plans.

Formliners shall be a Rustic Ashlar Pattern with simulated stone sizes shown in the Plans and shall produce the textured effect of a realistic, cut stone masonry surface. Simulated stone surfaces should exhibit the rough, natural finish of real stone laid in place and have a maximum surface relief of no more than 2 inches. Stone surfaces will be set in different surface elevations as detailed in the drawings. Simulated stone surfaces having a smooth, slick or shiny surface will be rejected. Individual stones shall be formed with crisp, sharp edges and have a rough natural relief to the shape and dimensions described herein and shown on approved shop drawings.

4.0 SUBMITTALS. The Contractor shall submit the following to the Engineer for approval:

1. Product data including manufacturer's technical information and use instructions for formliner placement and release.
2. Actual samples of form ties that will be used with work requiring architectural treatment.
3. Qualification data for firms and person specified below under Quality Assurance to demonstrate their capabilities and experience. Include a list of completed projects with project names, addresses, and names of architects, engineers and owners, plus any other pertinent information.
4. Shop drawings indicating formliner layout and termination details. Indicate backup, rustication, reveal, and chamfer strip locations. Include jointing, form tie location, pattern placement, pattern match details, and end, edge and other special conditions. Indicate tolerances and procedure of installation and separation.

After approval of shop drawings by the Engineer and prior to commencement of production, the Contractor shall submit the following to the Engineer for approval:

1. Test Panel Mock-ups as specified below under Quality Assurance.

5.0 QUALITY ASSURANCE.

1. Manufacturer's Qualifications: The formliner manufacturer must have a minimum of five year's experience making liners used to create formed concrete surfaces matching natural stone shapes and textures.
2. Installer Qualifications: The formliner installer shall have had a minimum of three consecutive years of experience in textured formed concrete construction.
3. Test Panel Mock-up: Provide a full-scale mock-up (5'x5' minimum panel size) using actual job specific materials, methods and workmanship. These include concrete mix [cement type, aggregate gradation, slump, water/cement ratios, plasticizers, and additives], forming system [ties, liner, and formwork], form release agents, placement rate, form pressures, joint sealing, vibrating and stripping practices. In addition, demonstrate patching and repair procedures for spalled concrete, and voids caused by honeycombing or bugholes. Incorporate formwork accessories, a minimum one vertical and one horizontal form liner joint, form liner corner matching technique, and coping details. Accepted mock-up will be the standard by which remaining work will be evaluated for technical and aesthetic merit. Accepted mock-up is a prerequisite to beginning job formwork. Submit variations from mock-up materials or techniques for approval prior to use.
4. Coordination: Coordinate and combine mock-up with related technique mock-up requirements insofar as practical.

Following completion of the structure, remove and dispose of the test panels in accordance with the Specifications.

Test panels shall be considered incidental to the work and no direct compensation will be made theretofore.

6.0 CONSTRUCTION REQUIREMENTS. Match pattern features at formliner joints to make the formed concrete surface appear uniform and continuous without grout leakage at the joints. When concrete vertical and horizontal construction joints are required, place formliner joints in the valley of the grooves, or as approved by the Engineer. Pour concrete at a rate and lift depth such that the pressure exerted by the wet concrete on the formwork, as determined using ACI 347R-14 "Guide to Formwork for Concrete", does not exceed formliner manufacturer's recommendations and in no case exceeds 1000 psi. Following removal of forms, finish improperly formed joints to achieve a smooth and uniform cast concrete surface. No visible vertical and horizontal seams or conspicuous form marks created by butt-joining formliners will be allowed. Where it is not possible to locate a vertical or horizontal groove at a construction joint, the concrete surface shall be finished to reduce visibility of the construction joints.

Strip formwork in accordance with the formliner manufacturer's recommendations to avoid concrete surface deterioration or weakness planes in the substrate. Finish form tie holes in accordance with the Specifications using approved patching materials.

Clean and repair surfaces of formliners to be re-used. Split, frayed, delaminated or otherwise damaged formliner material will not be acceptable for exposed surfaces. Formliners shall be cleaned and free of concrete buildup prior to each pour. Do not use "patched" forms for exposed concrete surfaces unless they are acceptable to the Engineer.

6.0 MEASUREMENT. The Department will measure the quantity of Architectural Treatment by the square yard of surface in the plane of the nominal dimensions shown on the Plans and within the limits shown in the Contract Documents for areas receiving Architectural Treatment.

7.0 PAYMENT. Payment at the contract unit price per square yard is full compensation for furnishing all labor, equipment, materials, and incidental items necessary to construct the Architectural Treatment in accordance with the Plans, Specifications, other Contract Documents, and this Special Note.

Code	Pay Item	Pay Unit
23026ED	Architectural Treatment	Square Yard

SPECIAL NOTE FOR DISC BEARINGS

1.0 DESCRIPTION. This work consists of furnishing High Load, Multi-Rotational, Disc Bearings and installing disc bearing assemblies at the locations shown on the plans, in accordance with these specifications and the AASHTO LRFD Bridge Design and Construction Specifications. Bearing assemblies shall include bearing device, distribution plates, distribution pads, and connection hardware as shown in the plans.

Disc bearings shall consist of a polyether urethane structural element (disc) confined by upper and lower steel bearing plates. The bearings shall be designed for the loads and movements shown in the plans occurring simultaneously. Maximum vertical loads shown are due to the full dead and live load with dynamic load allowance included. The bearings shall be designed to accommodate a maximum rotation of 0.02 radians. All bearings shall be fully removable. For guided expansion bearings, stainless steel surfaces shall extend a minimum of 1" each direction beyond the specified movement range.

2.0 EXPERIENCE REQUIREMENTS.

2.1 QUALIFIED SUPPLIERS

The D.S. Brown Company
300 East Cherry Street
North Baltimore, Ohio 45872

R.J. Watson, Inc.
11035 Walden Ave.
Alden, NY 14004

The Contractor should note that he/she is not limited to sourcing the disc bearings from the above suppliers. Alternate suppliers shall submit, to the Engineer, documented previous projects, which at a minimum, meet the qualification requirements of Section 2.2. The Engineer shall determine if the submitted documentation is satisfactory for qualification.

2.2 QUALIFICATION REQUIREMENTS. Disc bearings and the bearing supplier shall be subject to the qualification requirements for acceptance listed below.

A. Disc bearings shall be designed and constructed in accordance with AASHTO LRFD Bridge Design Specifications 7th Edition, Section 14, and AASHTO LRFD Bridge Construction Specifications 4th Edition, Section 18.
B. The supplier shall show previous history in the design and fabrication of disc bearings. Documentation showing a minimum of five years' experience and bridge installations shall be provided to the Engineer.
C. Sliding bearings shall be stiff in shear, i.e. negligible shear displacements shall occur within the vertical load support element.

2.3 SHOP DRAWINGS. The Contractor shall submit shop drawings to the Engineer for approval, and shall have received said approval prior to construction of the substructure units. These drawings shall include, but not be limited to, the following information.

A. Plan and elevation of each disc bearing size
B. Complete details and sections showing all materials (with ASTM or other designations)
C. Vertical and horizontal load capacities and movement ratings.
D. All bearing connection details.
E. Design calculation verifying compliance with AASHTO standards.

The shop drawings and design calculations shall be sealed by a Professional Engineer employed by the bearing designer with at least five years of documented history of disc bearing design experience.

2.4 CERTIFICATE OF COMPLIANCE. In addition to records test results, the Contractor's disc bearing supplier shall submit Certificates of Compliance for the disc bearings indicating the materials, fabrication, testing, and installation are as specified herein.

3.0 DISC BEARING FUNCTION AND CONSTRUCTION.

3.1 FUNCTION

A. Bearing capacity shall satisfy the capacities as designated by the contract documents.

3.2 CONSTRUCTION

A. Bearings delivered to the bridge site shall be stored under cover on a platform above the ground surface. Bearings shall be protected at all times from damage. When placed, bearings shall be dry, clean, and free from dirt, oil, grease, and other foreign substances.
B. Bearing devices shall not be disassembled unless otherwise permitted by the Engineer or Manufacturer.
C. Bearings shall be installed in accordance with the alignment plan and installation scheme as shown in the contract plans. Upon final installation of the bearings, the Engineer shall inspect the bearing components to assure that they are level and parallel to within +/- 0.03125 in/ft. Any deviations in excess of the allowed tolerances shall be corrected at no additional cost to the Department.

D. Bearing assemblies shall be handled and installed in accordance with the Manufacturer's instructions as approved by the design Engineer.
E. Caution shall be taken to ensure that the steel temperature directly adjacent to the polyether urethane rotational element does not exceed 225°F. The polyether urethane disc must not be exposed to direct flame or sparks.
F. Field welding, where indicated, shall meet the requirements of the American Welding Society (AWS) D1.5. Magnetic particle inspection of welds, in accordance with the Standard Specifications, will be required.

4.0 TESTING, MATERIALS, AND EQUIPMENT.

4.1 TESTING

A. Production bearing sampling and testing shall be performed in accordance with AASHTO LRFD Bridge Construction Specifications, Sections 18.3.4 and 18.1.5.
B. The Long-Term Deterioration Test per AASHTO LRFD Bridge Construction Specification, Section 18.1.5.2.7 shall be satisfied by pre-qualification unless otherwise specified in the contract plans.
C. Each bearing shall be visually examined both during and after testing. Any resultant defects, which include, but are not limited to, bond failure, physical destruction or cold flow of PTFE to the point of debonding, shall be cause for rejection. Defects such as permanently extruded or severely deformed elastomer or cracked steel shall also be cause for rejection.

4.2 MATERIALS AND EQUIPMENT.

A. All materials shall be new and unused, with no reclaimed material incorporated in the finished bearing.
B. The physical properties of the polyether urethane elements shall conform to AASHTO LRFD Bridge Construction Specifications, Table 18.3.2.8-1.
C. All steel plates, except stainless steel components of the bearing, shall be ASTM A709 Grade 50W.
D. Stainless steel shall conform to the requirements of ASTM A240 – Type 304. Higher grades of stainless are permissible. Stainless steel in contact with PTFE shall be polished to a No. 8 bright mirror finish. The minimum thickness of stainless steel sheet shall be 12 gauge.
E.. Polytetrafluorethylene (PTFE) sheet shall be manufactured from pure virgin (not reprocessed) PTFE resin. PTFE sheet shall meet the applicable material requirements of AASHTO LRFD Bridge Construction Specifications, Section 18.8.2. Alternative low coefficient of friction materials shall be considered for use on both the guide bars and horizontal sliding surface. Materials used on the horizontal sliding surfaces shall be more durable than PTFE with a coefficient of friction similar to PTFE.

F. The elastomeric materials of the compounds for anchor blocks and sealing membrane shall be virgin polychloroprene ASTM D 2000, line call-outs 2BC, 515, A14, B14, C12, K11, 21, 22; or ethylene propylene diene monomer (EPDM) AST SQ M 000, line call-outs 3BA, 515, A14, B13, F17, C12, K21, 22 having the following properties

	ASTM STANDARD	REQUIREMENT
Durometer - Shore A	D 2240	50 min
Tensile Strength	D 412	1500 psi min.
Ultimate Elongation	D 412	200% min.
Compression Set 22 Hours @ 212°F (Method "B") for Polychloroprene @ 158°F (Method "B") for EPDM	D 395	35% max. 25% max.
Low Temperature Brittleness (Method "A")	D 2137	Pass
Non-brittle after 3 min. @ 34°F		
Ozone Resistance Procedure "B" - D 518 10 PPHM Ozone for 70 Hours @ 100°F	D 1149	No Cracks
Sample Under 20 % Strain Bond During Vulcanization (Method B)	D 429	80% R

When test specimens are cut from the finished product, a ten percent variation in “Physical Properties” will be allowed.

5.0 FABRICATION.

5.1 FABRICATION DETAILS

A. Elastomeric rotational elements shall be molded as a single piece, separate layers are not allowed.
B. The Contractor shall provide the Engineer with written notification prior to the start of bearing fabrication. This notification shall include all of the information required by Section 2. The bearing fabricator shall be certified by the American Institute of Steel Construction (AISC) for Simple Steel Bridge Category.
C. All steel surfaces exposed to the atmosphere, except stainless steel surfaces and metal surfaces to be welded, shall be painted in accordance with the Specifications.
D. Stainless steel sheet shall be attached to its steel substrate with a continuous seal weld.
E. All welding shall conform to, and all welders shall be qualified in accordance with, the requirements of the American Welding Society (AWS).

F. Except as noted, all bearing fabrication tolerances shall be in accordance with AASHTO LRFD Bridge Construction Specifications, Table 18.1.4.2-1.
G. Each bearing shall be stamped with the Manufacturer's name, bearing type or model number, bearing number, installation location, and a direction arrow that indicates up-station. The stamp shall be on a surface visible after installation.
H. After assembly, including sole plates, load plates, and masonry plates as applicable, bearing components shall be held together with steel strapping or other means to prevent disassembly until the time of installation, unless otherwise permitted by the Engineer.

6.0 MEASUREMENT. The Department will measure the quantity of Disc Bearings by the actual number of individual bearings furnished and placed during the project. The Department will not measure bearings replaced due to damage or rejection.

7.0 PAYMENT. Payment at the contract unit price of each is full compensation for furnishing all labor, equipment, materials, and incidental items necessary to install, operate, move, repair, and maintain or replace the disc bearings in accordance with the Plans, Specifications, other Contract Documents, and this Special Note. Neoprene sheets under the bearings shall be considered incidental to the disk expansion bearing item. All prescribed work shall be done in a workmanlike and acceptable manner including all incidentals necessary for completion.

Code	Pay Item	Pay Unit
	Disc Bearing	Each

SPECIAL NOTE

For Tree Removal

Greenup County
REPLACE BRIDGE ON KY-244 (MP 0.103) OVER CSX RAILROAD; .05 MI N.E. OF JCT US 23
Item No. 9-1073

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 David Waldner, Director, Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone: (502) 564-7250.

SPECIAL NOTE FOR CONCRETE SLURRY

If diamond grinding, grooving or any other process which produces slurry is required on roadways or bridges, the contractor shall ensure that all concrete slurry associated with these processes is collected, managed, and disposed of appropriately. The waste material shall be disposed of at a permitted disposal facility, in accordance with the Kentucky Standard Specifications for Road and Bridge Construction and the Environmental Performance Standards outlined in 401 KAR 47:030, or managed as a material for beneficial reuse. Any fines or remediation related to improper disposal shall be the sole responsibility of the contractor.

Disposal of concrete slurry will not be paid separately and shall be considered incidental to other bid items.

8/20/2019

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 36inches 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	AASHTO Nominal Diameter	Max. Deflection Limit	
		5.0%	10.0%
(inches)	(inches)	(inches)	
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:

% Deflection = [(AASHTO Nominal Diameter - D2) / AASHTO Nominal Diameter] x 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:

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

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 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.

Matthew G. Bevin
Governor

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.transportation.ky.gov/

Greg Thomas
Secretary

Asbestos Inspection Report

To: Karen Mynhier

District: 9

Date: June 19, 2017

Conducted By: O'Dail Lawson

Report Prepared By: O'Dail Lawson

Project and Structure Identification

Project Number: Greenup 09-1073.00

Structure ID: 45B00039N

Structure Location: Bellefonte Street (KY-244) over CSX Railroad

Sample Description: The samples collected were negative for asbestos.

Inspection Date: May 24, 2017

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 (DEP7036 Form) 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.

MRS, INC. *MRS, Inc. Analytical Laboratory Division*

332 West Broadway / Suite # 902
Louisville, Kentucky - 40202 - 2133

(502) 495-1212
Fax: (502) 491-7111

BULK SAMPLE ASBESTOS ANALYSIS

Analysis N # # 06165 Address: Greenup 9 - 1073 045B00039N
Client Name: KYTC
Sampled By: O'Dail Lawson

				% FIBROUS ASBESTOS				% NON-ASBESTOS FIBERS			
Sample ID	Color	Layered	Fibrous	Chrysotile	Amosite	crocidolite	Others	Cellulose	Fiberglass	Syn. Fiber	Other/Mat.
G - 1	Black	Yes	No				None				100%

Methodology : EPA Method 600/R-93-116
Date Analyzed : 16-Jun-17
Analyst : Winterford Mensah

Reviewed By: Winterford Mensah
Signature

AIHA # 102459

AJHA #1 02459

Chain of Custody Record

Kentucky Transportation Cabinet

200 Mero Street, 5th Floor West
Frankfort, Kentucky 40622
(502) 564-7250 fax (502) 564-5655

O'Dail Lawson o'dail.lawson@ky.gov KYTC Address: 200 Mero Street Frankfort KY Phone: 502-782-5020 Fax: 502-564-5655 PO#:	**Client Information** KY TRANSPORTATION CABINET Results Code: Belle Fonte Street (KY-244) over CSX Railroad ND = None Detected FTD = Filter Tampering or Damaged N/A = Not Applicable Samplers (signature):
Project or Subject Reference Greenup 9-1073 ~~0147~~ 045B00039N	

Sample ID	Sample Description	Collected Date	Collected Time	Analysis Requested	Matrix	Color	Cont. Type	Preservative
G-1	Joint Compound	5/24/17	12:15	Asbestos Bulk	Neoprene	black		N/A

Relinquished By:	Date/Time:
Received By: Kristopher Meraz	Date/Time: 6/08/17
Relinquished By:	Date/Time:
Received at Lab By:	Date/Time:

ENVIRONMENTAL TRAINING CONCEPTS, INC
P.O Box 99603 Louisville, KY 40269
(502)640-2951

Certification Number: ETC-AIR-061317-00518

O'Dail Lawson

has on 06-13-2017, attended and successfully completed the requirements and passed the examination with a score of 70% of better on the entitled course.

ASBESTOS INSPECTOR REFRESHER

Training was in accordance with 40 CFR Part 763 (AHERA) approved by the Commonwealth of Kentucky, the Indiana Department of Environmental Management and Tennessee Department of Environment & Conservation The above student received requisite training for Asbestos Accreditation under Title II of the Toxic Substance Act (TSCA).

Conducted at: 1220 Kentucky Mills Drive, Louisville, KY

Expiration Date: 06-13-2018

Name – Training Manager

Name - Instructor

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

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

RIGHT OF WAY CERTIFICATION

☒ Original	☐ Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #	**COUNTY**	**PROJECT # (STATE)**	**PROJECT # (FEDERAL)**
09-1073.00	Greenup	12FO FD52 045 8521001R	STPBRZ 0903(190)
PROJECT DESCRIPTION			
REPLACE THE BRIDGE ON KY-244 (MP 0.103) OVER CSX RAILROAD			

☐ **No Additional Right of Way Required**

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

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

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

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

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

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

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

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

Notes/ Comments (Use Additional Sheet if necessary)

LPA RW Project Manager		Right of Way Supervisor	
Printed Name		Printed Name	James R. Mason
Signature		Signature	Digitally signed by James R. Mason
Date		Date	Date: 2019.09.20 11:04:06 -04'00'
Right of Way Director		**FHWA**	
Printed Name		Printed Name	No Signature Required
Signature	DM Loy Digitally signed by DM Loy Date: 2019.09.20 11:56:23 -04'00'	Signature	as per FHWA-KYTC
Date		Date	Current Stewardship Agreement

UTILITIES AND RAIL CERTIFICATION NOTE

Greenup County
STP BRZ0903206
FD52 045 8521001U
Mile point: 0.000 TO 0.207
ADDRESS DEFICIENCIES OF BRIDGE ON KY-244 (MP 0.103) OVER CSX RAILROAD; .05 MI N.E. OF JCT US 23; 045B00039N (16CCR)
ITEM NUMBER: 09-1073.00

PROJECT NOTES ON UTILITIES

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

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

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

Utility coordination efforts determined that no significant utility relocation work is required to complete the project. Any work pertaining to these utility facilities is defined in the bid package and is to be

UTILITIES AND RAIL CERTIFICATION NOTE

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ITEM NUMBER: 09-1073.00

carried out as instructed by the Kentucky Transportation Cabinet. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.

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

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

Sprint - Fiber Optics – Communication – Sprint Communication has no utilities to be relocated on this project.

Columbia Gas of Kentucky - Natural Gas, Completion date: 10/13/2018

Kentucky Power Company – Electric – Completed their relocation on 05/20/18

Windstream Communication – Completed the relocation of their facilities 07/10/2018

Time Warner / Spectrum Cable – Completed the relocation of their facilities 08/07/2018

Greenup Environmental Commission – Will be completed with their sewer relocation by 08/29/2019

UTILITIES AND RAIL CERTIFICATION NOTE

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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

** Please note that at Station 305+00 AEP, Windstream and Spectrum will have one pole to set and attach to after roadway contractor establish grade work of the shoulder or slope off the roadway. The roadway contractor should be in contact with AEP during or near this part of the construction being this pole belongs to AEP and the others Utilities Company will attach to pole after AEP has to set and attached their own lines to the new pole. During this pole relocation and each utility company are attaching their lines the roadway contractor may elect to work on other parts of the project to give the overhead utilities time manor to complete their relocation. Please contact Patrick Thovson with AEP Power Company at 606-831-2307.**

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

City of Russell Water & Sewer - Sewer

City of Russell Water & Sewer - Water

UTILITIES AND RAIL CERTIFICATION NOTE

Greenup County
STP BRZ0903206
FD52 045 8521001U
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ITEM NUMBER: 09-1073.00

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☐ No Rail Involvement ☒ Rail Involved ☐ Rail Adjacent

UTILITIES AND RAIL CERTIFICATION NOTE

Greenup County
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FD52 045 8521001U
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AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
City of Russell Water & Sewer - Sewer	410 Ferry Street Russell KY 41169	Mike Lacks	6068366644	russellblair1@aol.com
City of Russell Water & Sewer - Water	410 Ferry Street Russell KY 41169	Mike Lacks	6068366644	russellblair1@aol.com
Columbia Gas of Kentucky - Natural Gas	PO Box 14241 Lexington KY 40512	Bryan Slone	8592880253	bkslone@nisource.com
CSX Transportation, Inc. - Railroad	1717 Dixie Highway, Room 400 Ft. Wright KY 41011	Amanda DeCesar	8594266924	Amanda_DeCesare@csx.com
Greenup County Environmental Commission - Sewer	P.O. Box 471 Russell KY 41169	Phillp Biggs	6068364600	diamond.biggs@zoominternet.net
Kentucky Power Company - Electric	12333 Kevin Avenue Ashland KY 41102	Ronald Canfield	6069291462	rlcanfield@aep.com
Sprint - Fiber Optics - Communication	11370 Enterprise Park Drive Sharonville OH 45241	Joe Thomas	9372099754	Joseph.J.Thomas@sprint.com
Time Warner Cable / Spectrum Cable - CATV	1617 Foxhaven Drive Richmond KY 40475	Elbert Lamb	8596246974	elbert.lamb@twcable.com

UTILITIES AND RAIL CERTIFICATION NOTE

Greenup County
STP BRZ0903206
FD52 045 8521001U
Mile point: 0.000 TO 0.207
ADDRESS DEFICIENCIES OF BRIDGE ON KY-244 (MP 0.103) OVER CSX RAILROAD; .05 MI N.E. OF JCT US 23; 045B00039N (16CCR)
ITEM NUMBER: 09-1073.00

Windstream Communications - Telephone	P.O. Box 25410 Little Rock AK 72212	Kijana Royal	5017487628	Kijana.Royal@windstream.com

CSX TRANSPORTATION

CONSTRUCTION SUBMISSION CRITERIA

CSXT Design and Construction
Public Projects Group
Jacksonville, FL
Date Issued: November 1, 2013

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INTRODUCTION

The intent of this document is to guide outside agencies and their Contractors when performing work on, over, or with potential to impact CSXT property (ROW). Work plans shall be submitted for review to the designated CSXT Engineering Representative for all work which presents the potential to affect CSXT property or operations; this document shall serve as a guide in preparing these work plans. All work shall be performed in a manner that does not adversely impact CSXT operations or safety; as such, the requirements of this document shall be strictly adhered to, in addition to all other applicable standards associated with the construction. Applicable standards include, but are not limited to, CSXT Standards and Special Provisions, CSXT Insurance Requirements, CSXT Pipeline Occupancy Criteria, as well as the governing local, county, state and federal requirements. It shall be noted that this document and all other CSXT standards are subject to change without notice, and future revisions will be made available at the CSXT website: www.csx.com.

I. DEFINITIONS

1. **Agency –** The project sponsor (i.e. State DOT, Local Agencies, Private Developer, etc.)
2. **AREMA –** American Railway Engineering and Maintenance-of-Way Association – the North American railroad industry standards group. The use of this term shall be in specific reference to the AREMA Manual for Railway Engineering.
3. **Construction Submission –** The Agency or its representative shall submit six (6) sets of plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer as defined below.
4. **Controlled Demolition –** Removal of an existing structure or subcomponents in a manner that positively prevents any debris or material from falling, impacting, or otherwise affecting CSXT employees, equipment or property. Provisions shall be made to ensure that there is no impairment of railroad operations or CSXT's ability to access its property at all times.
5. **Contractor –** The Agency's representative retained to perform the project work.
6. **Engineer –** CSXT Engineering Representative or a GEC authorized to act on the behalf of CSXT.
7. **Flagman –** A qualified CSXT employee with the sole responsibility to direct or restrict movement of trains, at or through a specific location, to provide protection for workers.
8. **GEC –** General Engineering Consultant who has been authorized to act on the behalf of CSXT.
9. **Horizontal Clearance –** Distance measured perpendicularly from centerline of any track to the nearest obstruction at any elevation between TOR and the maximum vertical clearance of the track.
10. **Professional Engineer –** An engineer who is licensed in State or Commonwealth in which the project is to occur. All plans, specifications, and supporting calculations shall be prepared by the Licensed Professional Engineer and shall bear his/her seal and signature.
11. **Potential to Foul –** Work having the possibility of impacting CSXT property or operations; defined as one or more of the following:
    a. Any activity where access onto CSXT property is required.
    b. Any activity where work is being performed on CSXT ROW.
    c. Any excavation work adjacent to CSXT tracks or facilities, within the Theoretical Railroad Live Load Influence Zone, or where the active earth pressure zone extends within the CSXT property limits.

d. The use of any equipment where, if tipped and laid flat in any direction (360 degrees) about its center pin, can encroach within twenty five feet (25'-0") of the nearest track centerline. This is based upon the proposed location of the equipment during use, and may be a function of the equipment boom length. Note that hoisting equipment with the potential to foul must satisfy the 150% factor of safety requirement for lifting capacities.

e. Any work where the scatter of debris, or other materials has the potential to encroach within twenty five feet (25'-0") of the nearest track centerline.

f. Any work where significant vibration forces may be induced upon the track structure or existing structures located under, over, or adjacent to the track structure.

g. Any other work which poses the potential to disrupt rail operations, threaten the safety of railroad employees, or otherwise negatively impact railroad property, as determined by CSXT.

12. **ROW –** Right of Way; Refers to CSXT Right-of-Way as well as all CSXT property and facilities. This includes all aerial space within the property limits, and any underground facilities.

13. **Submission Review Period -** a minimum of thirty (30) days in advance of start of work. Up to thirty (30) days will be required for the initial review response. Up to an additional thirty (30) days may be required to review any/all subsequent submissions or resubmission.

14. **Theoretical Railroad Live Load Influence Zone –** A 1½ horizontal to 1 vertical theoretical slope line starting 18 inches (1'-6") below top of tie elevation and twelve feet (12'-0") from the centerline of the nearest track.

15. **TOR –** Top of Rail. This is the base point for clearance measurements. It refers to the crown (top) of the steel rail; the point where train wheels bear on the steel rails.

16. **Track Structure –** All load bearing elements which support the train. This includes, but is not limited to, the rail, ties, appurtenances, ballast, sub-ballast, embankment, retaining walls, and bridge structures.

17. **Vertical Clearance –** Distance measured from TOR to the lowest obstruction within six feet (6'-0") of the track centerline, in either direction.

II. GENERAL SUBMISSION REQUIREMENTS

A. A construction work plan is required to be submitted by the Agency or its Contractor, for review and acceptance, prior to accessing or performing any work with Potential to Foul.

B. The Agency or its representative shall submit six (6) sets of plans, specifications, supporting calculations, and detailed means and methods procedures for the specific proposed work activity.

C. Construction submissions shall include all information relevant to the work activity, and shall clearly and concisely explain the nature of the work, how it is being performed, and what measures are being taken to ensure that railroad property and operations are continuously maintained.

D. All construction plans shall include a map of the work site, depicting the CSXT tracks, the CSXT right of way, proposed means of access, proposed locations for equipment and material staging (dimensioned from nearest track centerline), as well as all other relevant project information. An elevation drawing may also be necessary in order to depict clearances or other components of the work.

E. Please note that CSXT will not provide pricing to individual contractors involved in bidding projects. Bidding contractors shall request information from the agency and not CSXT.

F. The Contractor shall install a geotextile fabric ballast protection system to prevent construction or demolition debris and fines from fouling ballast. The geotextile ballast protection system shall be installed and maintained by the Contractor to the satisfaction of the Engineer.

G. The Engineer shall be kept aware of the construction schedule. The Contractor shall provide timely communication to the Engineer when scheduling the work such that the Engineer may be present during the work. The Contractor's schedule shall not dictate the work plan review schedule, and flagging shall not be scheduled prior to receipt of an accepted work plan.

H. At any time during construction activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

I. Blasting will not be permitted to demolish a structure over or within CSXT's right-of-way. When blasting off of CSXT property but with Potential to Foul, vibration monitoring, track settlement surveying, and/or other protective measures may be required as determined by the Engineer.

J. Blasting is not permitted adjacent to CSXT right-of-way without written approval from the Chief Engineer, CSXT.

K. Mechanical and chemical means of rock removal must be explored before blasting is considered. If written permission for the use of explosives is granted, the Agency or Contractor must submit a work plan satisfying the following requirements:

1. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Agency or Contractor.

2. Electronic detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

3. No blasting shall be done without the presence of an authorized representative of CSXT. Advance notice to the Engineer is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.

4. Agency or Contractor must have at the project site adequate equipment, labor and materials, and allow sufficient time, to clean up debris resulting from the blasting and correct any misalignment of tracks or other damage to CSXT property resulting from the blasting. Any corrective measures required must be performed as directed by the Engineer at the Agency's or Contractor's expense without any delay to trains. If Agency's or Contractor's actions result in the delay of any trains including passenger trains, the Agency or Contractor shall bear the entire cost thereof.

5. The Agency or Contractor may not store explosives on CSXT property.
6. At any time during blasting activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

III. HOISTING OPERATIONS

A. All proposed hoisting operations with Potential to Foul shall be submitted in accordance with the following:

1. A plan view drawing shall depict the work site, the CSXT track(s), the proposed location(s) of the lifting equipment, as well as the proposed locations for picking, any intermediate staging, and setting the load(s). All locations shall be dimensioned from centerline of the nearest track. Crane locations shall also be dimensioned from a stationary point at the work site for field confirmation.
2. Computations showing the anticipated weight of all picks. Computations shall be made based upon the field-verified plans of the existing structure. Pick weights shall account for the weight of concrete rubble or other materials attached to the component being removed; this includes the weight of subsequent rigging devices/components. Rigging components shall be sized for the subsequent pick weight.
3. All lifting equipment, rigging devices, and other load bearing elements shall have a rated (safe lifting) capacity that is greater than or equal to 150% of the load it is carrying, as a factor of safety. Supporting calculations shall be furnished to verify the minimum capacity requirement is maintained for the duration of the hoisting operation.
4. Dynamic hoisting operations are prohibited when carrying a load with the Potential to Foul. Cranes or other lifting equipment shall remain stationary during lifting. (i.e. no moving picks).
5. For lifting equipment, the manufacturer's capacity charts, including crane, counterweight, maximum boom angle, and boom nomenclature is to be submitted.
6. A schematic rigging diagram must be provided to clearly call out each rigging component from crane hook to the material being hoisted. Copies of catalog or information sheets shall be provided to verify rigging weights and capacities.
7. For built-up rigging devices, the contractor shall submit the following:
    i. Details of the device, calling out material types, sizes, connections and other properties.
    ii. Load test certification documents and/or design computations bearing the seal and signature of a Professional Engineer. Load test shall be performed in the configuration of its intended use as part of the subject demolition procedure.
    iii. Copies of the latest inspection reports of the rigging device. The device shall be inspected within one (1) calendar year of the proposed date for use.
8. A detail shall be provided showing the crane outrigger setup, including dimensions from adjacent slopes or facilities. The detail shall indicate requirements for bearing surface preparation, including material requirements and compaction efforts. As a minimum, outriggers and/or tracks shall bear on mats, positioned on level material with adequate bearing capacity.
9. A complete written narrative that describes the sequence of events, indicating the order of lifts and any repositioning or re-hitching of the crane(s).

IV. DEMOLITION PROCEDURE

A. The Agency or its Contractor shall submit a detailed procedure for a controlled demolition of any structure on, over, or adjacent to the ROW. The controlled demolition procedure must be approved by the Engineer prior to beginning work on the project.

B. Existing Condition of structure being demolished:

1. The Contractor shall submit as-built plans for the structure(s) being demolished.
2. If as-built plans are unavailable, the Contractor shall perform an investigation of the structure, including any foundations, substructures, etc. The field measurements are to be made under the supervision of the Professional Engineer submitting the demolition procedure. Findings shall be submitted as part of the demolition means and methods submittal for review by the Engineer.
3. Any proposed method for temporary stabilization of the structure during the demolition shall be based on the existing plans or investigative findings, and submitted as part of the demolition means and methods for review by the Engineer.

C. Demolition work plans shall include a schematic plan depicting the proposed locations of the following, at various stages of the demolition:

1. All cranes and equipment, calling out the operating radii.
2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
3. Proposed locations for stockpiling material or locations for truck loading.
4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.
5. Note that no crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.

D. Demolition submittal shall also include the following information:

1. All hoisting details, as dictated by Section III of this document.
2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., torch/saw cutting various portions of the superstructure or substructure, dismantling splices, installing temporary bracing, etc.) shall be furnished so that the potential impact(s) to CSXT operations may be assessed and eliminated or minimized.
3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
4. Design and supporting calculations shall be prepared, signed, and sealed by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its contractor.

E. Girders or girder systems shall be stable at all times during demolition. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).

F. Existing, obsolete, bridge piers shall be removed to a minimum of three feet (3'-0") below the finished grade, final ditch line invert, or as directed by the Engineer.

G. A minimum quantity of twenty five (25) tons of CSXT approved granite track ballast may be required to be furnished and stockpiled on site by the Contractor, or as directed by the Engineer.

H. The use of acetylene gas is prohibited for use on or over CSXT property. Torch cutting shall be performed utilizing other materials such as propane.

I. CSXT's tracks, signals, structures, and other facilities shall be protected from damage during demolition of existing structure or replacement of deck slab.

J. Demolition Debris Shield

1. On-track or ground-level debris shields (such as crane mats) are prohibited for use by CSXT.
2. Demolition Debris Shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the structure. The demolition debris shield shall be erected from the underside of the bridge over the track area to catch all falling debris. The debris shield shall not be the primary means of debris containment.
    i. The demolition debris shield design and supporting calculations, all signed/sealed by a Professional Engineer, shall be submitted for review and acceptance.
    ii. The demolition debris shield shall have a minimum design load of 50 pounds per square foot (50 psf) plus the weight of the equipment, debris, personnel, and all other loads.
    iii. The Contractor shall verify the maximum particle size and quantity of the demolition debris generated during the procedure does not exceed the shield design loads. Shield design shall account for loads induced by particle impact; however the demolition procedure shall be such that impact forces are minimized. The debris shield shall not be the primary means of debris containment.
    iv. The Contractor shall include installation/removal means and methods for the demolition debris shield as part of the proposed Controlled Demolition procedure submission.
    v. The demolition debris shield shall provide twenty three feet (23'-0") minimum vertical clearance, or maintain the existing vertical clearance if the existing clearance is less than twenty three feet (23'-0").
    vi. Horizontal clearance to the centerline of the track should not be reduced unless approved by the Engineer.
    vii. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Engineer.

K. Vertical Demolition Debris Shield

1. This type of shield may be required for substructure removals in close proximity to CSXT track and other facilities, as determined by the Engineer.
2. The Agency or its Contractor shall submit detailed plans with detailed calculations, prepared, signed, and sealed by a Professional Engineer, of the protection shield.

V. ERECTION PROCEDURE

A. The Agency or its Contractor shall submit a detailed procedure for erection of a structure with Potential to Foul. The erection procedure must be approved by the Engineer prior to beginning work on the project.

B. Erection work plans shall include a schematic plan depicting the following, at all stages of the construction:

1. All proposed locations of all cranes and equipment, calling out the operating radii.
2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
3. All proposed locations for stockpiling material or locations for truck loading.
4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.

C. No crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.

D. For erection of a structure over the tracks, the following information shall be submitted for review and acceptance by the Engineer, at least thirty (30) days prior to erection:

1. As-built beam seat elevations – field surveyed upon completion of pier/abutment construction.
2. Current Top of Rail (TOR) elevations – field measured at the time of as-built elevation collection.
3. Computations verifying the anticipated minimum vertical clearance in the final condition which accounts for all deflection and camber, based upon the current TOR and as-built beam seat elevations. The anticipated minimum vertical clearance shall be greater than or equal to that which is indicated by the approved plans. Vertical clearance (see definitions) is measured from TOR to the lowest point on the overhead structure at any point within six feet (6'-0") from centerline of the track. Calculations shall be signed and sealed by a Professional Engineer.

E. Girders or girder systems shall be stable at all times during erection. No crane may unhook prior to stabilizing the beam or girder.

1. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).
2. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer.
3. Temporary bracing shall not be removed until sufficient lateral bracing or diaphragm members have been installed to establish a stable condition. Supporting calculations, furnished by the Professional Engineer, shall confirm the stable condition.

F. Erection procedure submissions shall also include the following information:

1. All hoisting details, as dictated by Section III of this document.
2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e. performing aerial splices, installing temporary bracing, installation of diaphragm members, etc.) shall be furnished so that the potential impact(s) to CSXT operations may be assessed and eliminated or minimized.
3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.

4. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its Contractor.
5. Design and supporting calculations prepared by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review.

VI. TEMPORARY EXCAVATION AND SHORING

A. The Agency or its Contractor shall submit a detailed design and procedure for the installation of a sheeting/shoring system adjacent to the tracks. Shoring protection shall be provided when excavating with Potential to Foul, or as otherwise determined by CSXT. Shoring shall be provided in accordance with the AREMA, except as noted below.

B. Shoring may not be required if all of the following conditions are satisfied:

1. The excavation does not encroach within the Theoretical Live Load Influence Zone. Please refer to Figure 1.
2. The track structure is situated on level ground, or in a cut section, and on stable soil.
3. The excavation does not adversely impact the stability of a CSXT facility (i.e. signal bungalow, drainage facility, under grade bridge, building, etc), or the stability of any structure on, over, or adjacent to CSXT property with potential to foul.
4. Shoring is not required by any governing federal, state, local or other construction code.

C. Shoring is required when excavating the toe of an embankment. Excavation of any embankment which supports an active CSXT track structure without shoring will not be permitted.

D. Trench boxes are not an acceptable means of shoring. Trench boxes are prohibited for use on CSXT property or within the Theoretical Railroad Live Load Influence Zone.

E. Shoring shall be a cofferdam-type, which completely encloses the excavation. However, where justified by site or work conditions, partial cofferdams with open sides away from the track may be permissible, as determined by the Engineer.

F. Cofferdams shall be constructed using interlocking steel sheet piles, or when approved by the Engineer, steel soldier piles with timber lagging. Wales and struts shall be included when dictated by the design.

G. The use of tiebacks can be permissible for temporary shoring systems, when conditions warrant. Tiebacks shall have a minimum clear cover of 6'-0", measured from the bottom of the rail. Upon completion of the work, tiebacks shall be grouted, cut off, and remain in place.

H. All shoring systems on, or adjacent to CSXT right-of-way, shall be equipped with railings or other fall protection, compliant with the governing federal, state or local requirements. Area around pits shall be graded to eliminate all potential tripping hazards.

I. Interlocking steel sheet piles shall be used for shoring systems qualifying one or more of the following conditions:

1. Within 18'-0" of the nearest track centerline
2. Within the live load influence zone
3. Within slopes supporting the track structure
4. As otherwise deemed necessary by the Engineer.

J. Sheet piles qualifying for one or more of the requirements listed in Section VI.I (above) of this document shall not be removed. Sheet piles shall be left in place and cut off a minimum of 3'-0" below the finished grade, the ditch line invert, or as otherwise directed by the Engineer. The ground shall be backfilled and compacted immediately after sheet pile is cut off.

K. The following design considerations shall be considered when preparing the shoring design package:

1. Shoring shall be designed to resist a vertical live load surcharge of 1,880 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, eight feet six inches (8'-6") wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in AREMA *Manual for Railway Engineering*, Chapter 8, Part 20.
2. Allowable stresses in materials shall be in accordance with AREMA Chapter 7, 8, and 15.3.
3. A minimum horizontal clearance of ten feet (10'-0") from centerline of the track to face of nearest point of shoring shall be maintained, provided a twelve feet (12'-0") roadbed is maintained with a temporary walkway and handrail system.
4. For temporary shoring systems with Potential to Foul, piles shall be plumb under full dead load. Maximum deflection at the top of wall, under full live load, shall be as follows:
    i. ½ inch for walls within twelve feet (12’-0”) of track centerline (Measured from centerline of the nearest track to the nearest point of the supporting structure).
    ii. 1 inch for walls located greater than twelve feet (12’-0”) from track centerline

L. Shoring work plans shall be submitted in accordance with Section II of this document, as well as the following additional requirements:

1. The work plan shall include detailed drawings of the shoring systems calling out the sizes of all structural members, details of all connections. Both plan and elevation drawings shall be provided, calling out dimensions from the face of shoring relative to the nearest track centerline. The elevation drawing shall also show the height of shoring, and track elevation in relation to bottom of excavation.
2. Full design calculations for the shoring system shall be furnished.
3. A procedure for cutting off the sheet pile, backfilling and restoring the embankment.

VII. TRACK MONITORING

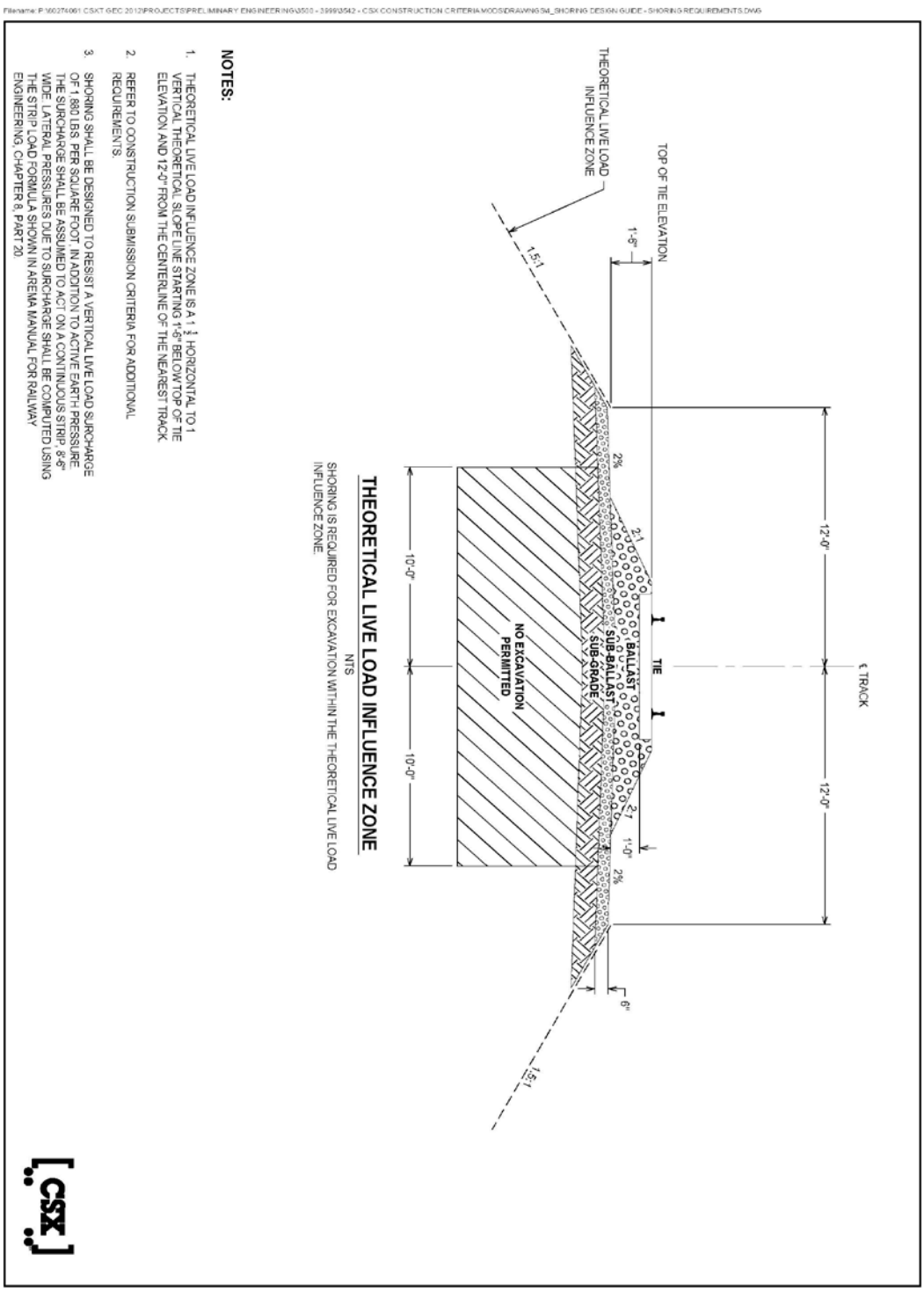
A. When work being performed has the potential to disrupt the track structure, a work plan must be submitted detailing a track monitoring program which will serve to monitor and detect both horizontal and vertical movement of the CSXT track and roadbed.

B. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. CSXT reserves to the right to modify the survey locations and monitoring frequency as necessary during the project.

C. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Engineer for analysis.

D. If any movement has occurred as determined by the Engineer, CSXT will be immediately notified. CSXT, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by CSXT or performed by CSXT including the monitoring of corrective action of the contractor will be at project expense.

Figure 1: Theoretical Live Load Influence Zone



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

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

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

PROTECTION OF EXISTING UTILITIES

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

PREQUALIFIED UTILITY CONTRACTORS

Some utility owners may require contractors that perform relocation work on their respective facilities as a part of the road contract be prequalified or preapproved by the utility owner. Those utility owners with a prequalification or preapproval requirement are as follows:

> ***No contractors are required to be prequalified or preapproved by the utility owner(s) to perform utility relocation work under this contract.***

The bidding contractor needs to review the above list and choose from the list of approved subcontractors at the end of these general notes as identified above before bidding. When the list of approved subcontractors is provided, only subcontractors shown on the following list(s) will be allowed to work on that utility as a part of this contract.

When the list of approved subcontractors for the utility work is not provided in these general notes, the utility work can be completed by the prime contractor. If the prime contractor chooses to subcontract the work, the subcontractor shall be prequalified with the KYTC Division of Construction Procurement in the

work type of "Utilities" (I33). Those who would like to become prequalified may contact the Division of Construction Procurement at (502) 564-3500. Please note: it could take up to 30 calendar days for prequalification to be approved. The prequalification does not have to be approved prior to the bid, but must be approved before the subcontract will be approved by KYTC and the work can be performed.

CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

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

SUBMITTALS AND CORRESPONDENCE

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

ENGINEER

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

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

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

NOTICE TO UTILITY OWNERS OF THE START OF WORK

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

UTILITY SHUTDOWNS

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

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

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

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

or corporation stop and/or capping or plugging the tap, digging down on a sewer tap at the main and plugging or capping the tap, digging down on a service line or lateral at a location shown on the plans or agreeable to the engineer and capping or plugging, or performing any other work necessary to abandon the service or lateral to satisfactorily accomplish the final utility relocation.

STATIONS AND DISTANCES

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

RESTORATION

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

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

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

MATERIAL

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

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

*(List here utility owner name(s) and specific materials that will be provided to the contractor. If there are some utility owners that will be supplying materials and others that will not, it may be prudent to also list each utility owner that will not be supplying materials for clarity of the contract. If no utility owner intends to supply materials, the following statement shall be placed here: "**No materials are being supplied by the utility owner(s). All materials are to be supplied by the contractor per bid item descriptions, utility specifications and utility plans**.")*

SECURITY OF SUPPLIED MATERIALS

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

Standard Water Bid Item Descriptions

W AIR RELEASE VALVE This bid item description shall apply to all air release valve installations of every size except those defined as "Special". This item shall include the air release valve, main to valve connecting line or piping, manhole, vault, structure, access casting or doors, tapping the main, labor, equipment, excavation, proper backfill and restoration required to install the air release valve at the location shown on the plans or as directed in accordance with the specifications and standard drawings complete and ready for use. All air release/vacuum valves on a project shall be paid under one bid item regardless of size. No separate pay items will be established for size variations. Only in the case of the uniqueness of a particular air release valve would a separate bid item be established. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

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

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

W CAP EXISTING MAIN This item shall include the specified cap, concrete blocking and/or mechanical anchoring, labor, equipment, excavation, backfill, and restoration required to install the cap at the location shown on the plans or as directed in accordance with the specifications. This item is not to be paid on new main installations. This pay item is only to be paid to cap existing mains. Caps on new mains are incidental to the new main. Any and all caps on existing mains shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W DIRECTIONAL BORE Payment under this item is made whenever the plans or specifications specifically show directional boring is to be utilized in order to minimize the impact of open cut for the installation of water main under streets, creeks, and etc. Payment under this item shall include the specified bore pipe, labor, and equipment. No separate payment shall be made for bore pipe installed in the bore whether used as a carrier pipe or an encasement of a separate carrier pipe. This item shall also include pipe anchors at each end of the bore when specified to prevent the creep or contraction of the bore pipe. Carrier pipe installed within a bore pipe shall be paid separately under pipe items. Payment under this item shall not be size specific and no separate bid items will be established for size variations. The bore pipe sizes to be included under this item shall be as shown on the plans and/or in the specifications. Any and all directional bores in each contract shall be paid under one directional bore bid item included in the contract regardless of size. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT CONCRETE Includes all labor, equipment, excavation, concrete, reinforcing steel, backfill, restoration, and etc., to construct the concrete encasement of the water main as shown on the plans, and in accordance with the specifications and standard drawings. Payment under this item shall be in addition to the carrier pipe as paid under separate bid items. Carrier pipe is not included in this bid item. Any and all concrete encasement shall be paid under one bid item included in the contract regardless of the size of the carrier pipe or the volume of concrete or steel reinforcement as specified in the plans and specifications. No separate bid items will be established for size variations. Measurement of pay quantity shall be from end of concrete to end of concrete. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT STEEL BORED This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to bore and install the encasement in accordance with the plans and specifications, complete and ready for use. The size shall be the measured internal diameter of the encasement pipe. The sizes of encasement to be paid under the size ranges specified in the bid items shall be as follows:

Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately; but, shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT STEEL OPEN CUT This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to open cut and install the encasement in accordance with the plans and specifications, complete and ready for use. The size shall be the measured internal diameter of the encasement pipe. The size encasement to be paid under the size ranges specified in the bid items shall be as follows:

Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately; but, shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W FIRE HYDRANT ADJUST Includes all labor, equipment, excavation, materials, and backfill to adjust the existing fire hydrant using the fire hydrant manufacturer's extension kit for adjustments of 18" or less. Adjustments greater than 18" require anchoring couplings and vertical bends to adjust to grade. The Contractor will supply and install all anchor couplings, bends, fire hydrant extension, concrete blocking, restoration, granular drainage material, etc, needed to adjust the fire hydrant complete and ready for use as shown on the plans, and in accordance with the specifications and standard drawings. This also includes allowing for the utility owner inspector to inspect the existing fire hydrant prior to adjusting, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete and ready for use.

W FIRE HYDRANT ASSEMBLY Includes all labor, equipment, new fire hydrant, isolating valve and valve box, concrete pad around valve box (when specified in specifications or plans), piping, anchoring tee, anchoring couplings, fire hydrant extension, excavation, concrete blocking, granular drainage material, backfill, and restoration, to install a new fire hydrant assembly as indicated on plans and on standard drawings compete and ready for use. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FIRE HYDRANT RELOCATE This item includes all labor and equipment to remove the existing fire hydrant from its existing location and reinstalling at a new location. This item shall include a new isolating valve and valve box, concrete pad around valve box (when required in specifications or plans), new piping, new anchoring tee, anchoring couplings, fire hydrant extensions, concrete blocking, restoration, granular drainage material, excavation, and backfill as indicated on plans, specifications, and on standard drawings compete and ready for use. This item shall also include allowing for utility owner inspector to inspect the existing fire hydrant prior to reuse, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant for use, if the existing fire hydrant is determined unfit for reuse. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FIRE HYDRANT REMOVE This bid item includes removal of an abandoned fire hydrant, isolating valve, and valve box to the satisfaction of the engineer. The removed fire hydrant, isolating valve and valve box shall become the property of the contractor for his disposal as salvage or scrap. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FLUSH HYDRANT ASSEMBLY This item shall include the flushing hydrant assembly, service line, tapping the main, labor, equipment, excavation, backfill, and restoration required to install the flush hydrant at the location shown on the plans and in accordance with the specifications and standard drawings, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FLUSHING ASSEMBLY This item shall include the flushing device assembly, service line, meter box and lid, tapping the main, labor, equipment, excavation, backfill, and restoration required to install the

flushing device at the location shown on the plans and in accordance with the specifications and standard drawings, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W LEAK DETECTION METER This item is for payment for installation of a water meter at main valve locations where shown on the plans for detection of water main leaks. The meter shall be of the size and type specified in the plans or specifications. This item shall include all labor, equipment, meter, meter box or vault, connecting pipes between main and meter, main taps, tapping saddles, casting, yoke, and any other associated material needed for installation of a functioning water meter in accordance with the plans and specifications, complete and ready for use. No separate payment will be made under any other contract item for connecting pipe or main taps. Any and all leak detection meters shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete and ready for use.

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

W MAIN POINT RELOCATE This item is intended for payment for horizontal and/or vertical relocation of a short length of an existing main at the locations shown on the plans. This bid item is to be used to relocate an existing water main at point locations such as to clear a conflict at a proposed drainage structure, pipe or any other similar short relocation situation, and where the existing pipe material is to be reused. The contractor shall provide any additional pipe or fitting material needed to complete the work as shown on the plans and specifications. The materials provided shall be of the same type and specification as those that exist. Substitution of alternative materials shall be approved by the engineer in advance on a case by case basis. New polyethylene wrap is to be provided (if wrap exists or is specified in the specifications to be used). If it is necessary that the pipe be disassembled for relay, payment under this item shall also include replacement of joint gaskets as needed. Bedding and backfill shall be provided and performed the same as with any other pipe installation as detailed in the plans and specifications. Payment under this item shall be for each location requiring an existing main to be relocated horizontally or vertically regardless of pipe size or relocation length. No separate pay items will be established for pipe size variations or relocation segment length variations. Water Main Relocate shall not be paid on a linear feet basis; but, shall be Paid EACH (EA) at each location when complete and placed in service. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

W METER This item is for payment for installation of all standard water meters of all sizes 2 inches ID or less as specified on the plans. This item shall include all labor, equipment, meter, meter box, casting, yoke, and any other associated material needed for installation of a functioning water meter in accordance with the plans and specifications, complete and ready for use. This item shall include connections to the new or existing water service line. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER ADJUST This item includes all labor, equipment, excavation, materials, backfill, restoration, and etc., to adjust the meter casting to finished grade (whatever size exists) at the location shown on the plans or as directed in accordance with the specifications and standard drawings complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER RELOCATE This item includes all labor, equipment, excavation, additional fittings, disinfection, testing, restoration, and etc., to relocate the existing water meter (whatever size exists), meter yoke, meter box, casting, and etc., from its old location to the location shown on the plans or as directed, in accordance with the specifications and standard drawings complete and ready for use. The new service pipe (if required) will be paid under short side or long side service bid items. Any and all meter relocations of 2 inches or less shall be paid under one bid item included in the contract regardless of size. Each individual relocation shall be paid individually under this item; however, no separate bid items will be established for meter size variations of 2 inches ID or less. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER VAULT SIZE RANGE 1 OR 2 This item is for payment for installation of an underground structure for housing of a larger water meter, fittings, and valves as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or access doors, the specified meter(s) valve(s), all piping, and fitting materials associated with installing a functioning meter and vault in accordance with the plans, standard drawings, and specifications, complete and ready for use. The size shall be the measured internal diameter of the meter and piping to be installed. The size meter vault to be paid under size 1 or 2 shall be as follows:

Size Range 1 = All meter and piping sizes greater than 2 inches up to and including 6 inches
Size Range 2 = All meter and piping sizes greater than 6 inches

This item shall be paid EACH (EA) when complete. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

W METER/FIRE SERVICE COMBO VAULT This item is for payment for installation of an underground structure for housing of a water meter and fire service piping, fittings, and valves as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or access doors, the specified meter(s), valve(s), all piping, and fitting materials associated with installing a functioning meter and fire service vault in accordance with the plans and specifications, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER WITH PRESSURE REDUCING VALVE (PRV) This item is for payment for installation of all standard water meters with pressure reducing valves (PRV) of all sizes 2 inches ID or less as specified on the plans. This item shall include all labor, equipment, meter, PRV, meter box, casting, yoke, and any other associated material needed for installation of a functioning water meter with PRV in accordance with the plans and specifications, complete and ready for use. This item shall include connections to the new or existing water service line. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

This item shall be paid EACH (EA) when complete.

W PIPE This description shall apply to all PVC, ductile iron, and polyethylene/plastic pipe bid items of every size and type to be used as water main, except those bid items defined as "Special". This item includes the pipe specified by the plans and specifications, all fittings (including, but not limited to, bends, tees, reducers, plugs, and caps), tracing wire with test boxes (if required by specification), polyethylene wrap (when specified), labor, equipment, excavation, bedding, restoration, testing, sanitizing, backfill, and etc., required to install the specified new pipe and new fittings at the locations shown on the plans, or as directed, in accordance with the specifications and standard drawings complete and ready for use. No additional payment will be made for rock excavation. This bid item includes material and placement of flowable fill under existing and proposed pavement, and wherever else specified on the plans or in the specifications. This item shall include all temporary and permanent materials and equipment required to pressure test and sanitize mains including, but not limited to, pressurization pumps, hoses, tubing, gauges, main taps, saddles, temporary main end caps or plugs and blocking, main end taps for flushing, chlorine liquids or tablets for sanitizing, water for testing/sanitizing and flushing (when not supplied by the utility), chlorine neutralization equipment and materials, and any other items needed to accomplish pressure testing and sanitizing the main installation. This item shall also include pipe anchors, at each end of polyethylene pipe runs when specified to prevent the creep or contraction of the pipe. Measurement of quantities under this item shall be through fittings, encasements, and directional bores (only when a separate carrier pipe is specified within the directional bore pipe). Measurements shall be further defined to be to the center of tie-in where new pipe contacts existing pipe at the center of connecting fittings, to the outside face of vault or structure walls, or to the point of main termination at dead ends. No separate payment will be made under pipe items when the directional bore pipe is the carrier pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W PLUG EXISTING MAIN This item shall include the specified plug, concrete blocking and/or anchoring, labor, equipment, excavation, backfill, and restoration required to install the plug in an existing in-service main that is to remain at the location shown on the plans or as directed in accordance with the specifications. Any and all plugs on all existing in-service mains shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

NOTE: This utility bid item is not to be paid on new main installations or abandoned mains. This pay item is to plug existing in-service mains only. Plugs on new mains are incidental to the new main just like all other fittings.

NOTE: Plugging of existing abandon mains shall be performed and paid in accordance with Section 708.03.05 of KYTC Standard Specifications For Road And Bridge Construction and paid using Bid Code 01314 Plug Pipe.

W PRESSURE REDUCING VALVE This description shall apply to all pressure reducing valves (PRV) of every size required in the plans and specifications except those bid items defined as "Special". Payment under this description is to be for PRVs being installed with new main. This item includes the PRV as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring (if any), pit or vault, backfill, restoration, testing, disinfection, and etc., required to install the specified PRV at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. If required on plans and/or proposed adjoining DIP is restrained, PRVs shall be restrained. PRV restraint shall be considered incidental to the

PRV and adjoining pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W PUMP STATION This item is for payment for installation of pumps and an above or below ground structure for housing of the pumps. This item shall include all pumps, piping, fittings, valves, electrical components, building materials, concrete, any other appurtenances, labor, equipment, excavation, and backfill, to complete the pump station installation as required by the plans, standard drawings, and specifications, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LUMP SUM (LS) when complete.

W REMOVE TRANSITE (AC) PIPE This item shall include all labor, equipment, and materials needed for removal and disposal of the pipe as hazardous material. All work shall be performed by trained and certified personnel in accordance with all environmental laws and regulations.
Any and all transite AC pipe removed shall be paid under one bid item included in the contract regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W SERVICE LONG SIDE This bid item description shall apply to all service line installations of every size bid up to and including 2 inch inside diameter, except those service bid items defined as "Special". This item includes the specified piping material, main tap, tapping saddle (if required), and corporation stop materials, coupling for connecting the new piping to the surviving existing piping, encasement of 2 inches or less internal diameter (if required by plan or specification), labor, equipment, excavation, backfill, testing, disinfection, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for service installations where the ends of the service connection are on opposite sides of the public roadway and the service line crosses the centerline of the public roadway as shown on the plans. The length of the service line is not to be specified. Payment under this item shall not be restricted by a minimum or maximum length. The contractor shall draw his own conclusions as to the length of piping that may be needed. Payment under this item shall include boring, jacking, or excavating across the public roadway for placement. Placement of a service across a private residential or commercial entrance alone shall not be reason to make payment under this item. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for special bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SERVICE SHORT SIDE This bid item description shall apply to all service line installations of every size up to and including 2 inch internal diameter, except those service bid items defined as "Special". This item includes installation of the specified piping material of the size specified on plans, encasement of 2 inches or less internal diameter (if required by plan or specification), main tap, tapping saddle (if required), corporation stop, coupling for connecting the new piping to the surviving existing piping, labor, equipment, excavation, backfill, testing, disinfection, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and

ready for use. This bid item is to pay for service installations were both ends of the service connection are on the same side of the public roadway, or when an existing service crossing a public roadway will remain and is being extended, reconnected, or relocated with all work on one side of the public roadway centerline as shown on the plans. The length of the service line is not to be specified and shall not be restricted to any minimum or maximum length. Payment shall be made under this item even if the service crosses a private residential or commercial entrance; but, not a public roadway.
Private or commercial entrances shall not be considered a public roadway in defining payment under this item. The contractor shall draw his own conclusions as to the length of piping that may be needed. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SERVICE RELOCATE This item is for the relocation of an existing water service line where a meter is not involved, and where an existing service line can easily be adjusted by excavating alongside and moving the line horizontally and/or vertically a short distance without cutting the service line to avoid conflicts with road construction. This item shall include excavation, labor, equipment, bedding, and backfill to relocate the line in accordance with the plans and specifications complete and ready for use. Payment under this item shall be for each location requiring relocation. Payment shall be made under this item regardless of service size or relocation length. No separate pay items will be established for size or length variation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W STRUCTURE ABANDONMENT This item is to be used to pay for abandonment of larger above or below ground water structures such as meter vaults, fire pits, pump stations, tanks, and etc. Payment under this time shall not be limited to size or scope; however structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to water construction, (i.e., abandonment of standard water meters up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted fill or flowable fill for abandonment of the structure in place and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W STRUCTURE REMOVAL This item is to be used to pay for removal of larger above or below ground water structures such as meter vaults, fire pits, pump stations, tanks, and etc. Payment under this time shall not be limited to size or scope; however structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to water construction, (i.e., removal of standard water meters up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted backfill for removal of the structure and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W TAPPING SLEVE AND VALVE SIZE 1 OR 2 This item shall include the specified tapping sleeve, valve, valve box, concrete pad around valve box (when required in specifications or plans), labor, and equipment to install the specified tapping sleeve and valve, complete and ready for use in accordance with

the plans and specifications. The size shall be the measured internal diameter of the live pipe to be tapped. The size tapping sleeve and valve to be paid under sizes 1 or 2 shall be as follows:

Size 1 = All live tapped main sizes up to and including 8 inches
Size 2 = All live tapped main sizes greater than 8 inches

Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W TIE-IN This bid description shall be used for all main tie-in bid items of every size except those defined as "Special". This item includes all labor, equipment, excavation, fittings, sleeves, reducers, couplings, blocking, anchoring, restoration, disinfection, testing and backfill required to make the water main tie-in as shown on the plans, and in accordance with the specifications complete and ready for use. Pipe for tie-ins shall be paid under separate bid items. This item shall be paid EACH (EA) when complete.

W VALVE This description shall apply to all valves of every size required in the plans and specifications except those bid items defined as "Special". Payment under this description is to be for gate or butterfly valves being installed with new main. This item includes the valve as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring (if any), valve box and valve stem extensions, backfill, concrete pad around valve box (if required by specification), restoration, testing, disinfection, and etc., required to install the specified valve at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. If required on plans and/or proposed adjoining DIP is restrained, valves shall be restrained. Valve restraint shall be considered incidental to the valve and adjoining pipe. This description does not apply to cut-in valves. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE ANCHOR EXISTING This bid item is intended to pay for installation of restraint hardware on an existing valve where no restraint exists to hold the valve in place to facilitate tie-ins and other procedures where restraint is prudent. This work shall be performed in accordance with water specifications and plans. This bid item shall include all labor equipment, excavation, materials and backfill to complete restraint of the designated valve, regardless of size, at the location shown on the plans, complete and ready for use. Materials to be provided may include, but is not limited to, retainer glands, lugs, threaded rod, concrete, reinforcing steel or any other material needed to complete the restraint. Should the associated valve box require removal to complete the restraint, the contractor shall reinstall the existing valve box, the cost of which shall be considered incidental to this bid item. No separate bid items are being provided for size variations. All sizes shall be paid under one bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE BOX ADJUST Includes all labor, equipment, valve box and valve stem extensions (if required), excavation, backfill, concrete pad around valve box (when specified in specifications or plans), restoration, and etc., to adjust the top of the box to finished grade complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE CUT-IN This bid description is for new cut-in valve installations of all sizes where installation is accomplished by cutting out a section of existing main. This item shall include cutting the existing pipe, supplying the specified valve, couplings or sleeves, valve box, concrete pad around valve box (when required in specifications or plans), labor, equipment, and materials to install the valve at the locations shown on the plans, or as directed by the engineer, complete and ready for use. Any pipe required for installation shall be cut from that pipe removed or supplied new by the contractor. No separate payment will be made for pipe required for cut-in valve installation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE VAULT This item is for payment for installation of an underground structure for housing of specific valve(s) as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or doors, the specified valve(s), all piping, and fitting materials associated with installing a functioning valve vault in accordance with the plans, standard drawing, and specifications, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

Standard Sanitary Sewer Bid Item Descriptions

S BYPASS PUMPING This item shall include all labor, equipment, and materials needed to complete a bypass pumping and/or hauling operation for diversion of sewage during sanitary sewer construction. Examples of such operations when bypass pumping and/or hauling may be necessary is during force main tie-ins, manhole invert reconstruction, insertion of new manholes into existing mains, or other similar construction. There may be more than one bypass pumping/hauling operation on a project. This item shall be paid for each separate bypass pumping/hauling operation occurrence as called out on the plans or directed by the engineer and actually performed. There will be no separate bid items defined for length, duration, or volume of sewage pumped or hauled in each occurrence. If a bypass pumping/hauling operation is called out on the plans; but, conditions are such that the bypass pumping/hauling operation is not needed or utilized, no payment will be made under this item. The contractor shall draw his own conclusions as to what labor, equipment, and materials may be needed for each bypass pumping/hauling occurrence. The contractor should be prepared to handle the maximum volume of the sewer being bypassed, even during a storm event. This item shall not be paid separately, but shall be considered incidental, when bypass pumping and/or hauling is needed during cast-in-place-pipe (CIPP) and/or point repair operations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA).

S CIPP LATERAL SERVICE INVSTIGATION This item shall include all equipment, materials, labor and incidentals necessary to enter the sewer in compliance with all safety/confided space requirements and perform the identification, assessment and pre-measurement of all existing and abandoned laterals for the placement of Cured-In-Place-Pipe lining. This item shall be in payment for all lateral service investigation for all sewer segments to be lined as a part of this contract. This bid item shall include bypass pumping when required. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. Payment for this item shall be LUMP SUM (LS).

S CIPP LATERAL REINSTATEMENT This item is to pay for installing a Cured-In-Place-Pipe liner in service laterals and service/mainline connections to stabilize structural defects and construction inadequacies. This bid item shall include all labor, equipment, materials and incidentals necessary to perform the service lateral reinstatement in accordance with the plans and specifications. Work under this item shall include bypass pumping, `1`sewer flow control, pre-installation cleaning, sealing connections to existing sewer main, pre- and post- construction CCTV inspection and final testing of the CIPP system. This item shall also include the "top hat" required by the specifications. All CIPP lateral reinstatements shall be paid under this item regardless of the size or length of reinstatement. No separate bid items of varying sizes or length of CIPP lateral reinstatement will be provided in the contract. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. Payment for this item shall be EACH (EA) for each CIPP lateral reinstatement complete and ready for use.

S CIPP LINER This bid Item is to pay for rehabilitation of existing sanitary sewers using the Cured-In-Place-Pipe method. This bid item description applies to all CIPP sizes included in the contract.

All CIPP Liner items of all varying sizes shall include all labor, materials, customer notification, testing, necessary permits, ingress and egress procedures, bypass pumping, pre-construction video, sediment and root removal, dewatering, traffic control, erosion and sediment control, excavation pits, removal and replacement of manhole frames and covers as necessary to facilitate the lining work, sealing at manholes and service connections, clearing and grubbing, pipeline cleaning, re-cleaning and video inspection as many times as necessary, debris collection and disposal, root removal, pre- and post-construction video inspection, all digital inspection footage, final report preparation and approval, the cost of potable water from the Owner, required compliance tests, site restoration, site cleanup, sealing of liner at manholes, acceptance testing and all other rehabilitation work and incidentals not included under other pay items necessary to complete the rehabilitation per the plans and specifications. There will be no separate payment for acceptance testing of the lined pipe; but shall be considered incidental to this item. Pay under this item shall be by each size bid in the contract. Pay measurement shall be from center of manhole to center of manhole. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S CIPP PROTRUDING LATERAL REMOVAL This item includes all equipment, materials, labor and incidentals necessary to enter the sewer in compliance with all safety/confined space requirements, remove a sufficient amount of the protruding tap to insure a proper and safe Cured-In-Place-Pipe lining insertion and perform pre-installation CCTV. This bid item shall include bypass pumping when required. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. Payment for this item shall be EACH (EA) for each protruding lateral removed.

S CONCRETE PIPE ANCHOR This item shall be constructed on the sewer pipe at the locations shown on the plans in accordance with sanitary sewer specifications and standard drawings. Payment for concrete anchors will be made at the contract unit price each in place complete and ready for use. Each concrete anchor of sewer pipe or force main shall be paid under one bid item per contract regardless of the sizes of carrier pipe being anchored in the contract. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S DIRECTIONAL BORE Payment under this item is made whenever the plans or specifications specifically show directional boring is to be utilized in order to minimize the impact of open cut for the installation of force main or gravity sewer under streets, creeks, and etc. Payment under this item shall include the specified bore pipe, labor, and equipment. No separate payment shall be made for bore pipe installed in the bore whether used as a carrier pipe or an encasement of a separate carrier pipe. This item shall also include pipe anchors at each end of the bore when specified to prevent the creep or contraction of the bore pipe. Carrier pipe installed within a bore pipe shall be paid separately under pipe items. Payment under this item shall not be size specific and no separate bid items will be established for size variations. The bore pipe sizes to be included under this item shall be as shown on the plans and/or in the specifications. Any and all directional bores in each contract shall be paid under one directional bore bid item included in the contract regardless of size. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S ENCASEMENT CONCRETE Includes all labor, equipment, excavation, concrete, reinforcing

steel, backfill, restoration, and etc., to construct the concrete encasement of the sewer or force main as shown on the plans, and in accordance with the specifications and standard drawings. Payment under this item shall be in addition to the carrier pipe as paid under separate bid items. Carrier pipe is not included in this bid item. Any and all concrete encasement shall be paid under one bid item included in the contract regardless of the size of the carrier pipe or the volume of concrete or steel reinforcement as specified in the plans and specifications. No separate bid items will be established for size variations. Measurement of pay quantity shall be from end of concrete to end of concrete. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

S ENCASEMENT STEEL BORED This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to bore and install the encasement in accordance with the plans and specifications, complete and ready for use. The size shall be the measured internal diameter of the encasement pipe. The sizes of encasement to be paid under the size ranges specified in the bid items shall be as follows:

Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately; but, shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S ENCASEMENT STEEL OPEN CUT This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to open cut install the encasement in accordance with the plans and specifications, complete and ready for use. The size shall be the measured internal diameter of the encasement pipe. The size encasement to be paid under the size ranges specified in the bid items shall be as follows:

Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately; but, shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S FORCE MAIN This description shall apply to all PVC and ductile iron and polyethylene/plastic pipe bid items of every size and type, except those bid items defined as "Special". This item includes the pipe specified by the plans and specifications, all fittings (including, but not limited to, bends, tees, reducers, plugs, and caps), tracing wire with test boxes (if required by specification), polyethylene wrap (when specified), labor, equipment, excavation, bedding, restoration, testing, backfill, and etc., required to install the specified new pipe and new fittings at the locations shown on the plans, or as directed, in accordance with the specifications and standard drawings complete and ready for use. No additional payment will be made for rock excavation. This bid item includes material and placement of flowable fill under existing and proposed pavement, and wherever else specified on the plans or in the specifications. This item shall also include pipe anchors on polyethylene pipe runs as shown on the plans or required by the specifications to prevent the creep or contraction of the pipe. Measurement of quantities under this item shall be through fittings, encasements, and directional bores (only when a separate carrier pipe is specified within the directional bore pipe). No separate payment will be made under pipe items when the directional bore pipe is the carrier pipe. Measurements shall be further defined to be to the center of tie-in where new pipe contacts existing pipe at the center of connecting fittings, to the outside face of vault or structure walls, or to the point of main termination at dead ends. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S FORCE MAIN AIR RLS/VAC VLV This bid item description shall apply to all force main air release/vacuum valve installations of every size except those defined as "Special".
This item shall include the air release/vacuum valve, main to valve connecting line or piping, manhole/vault/structure, access casting or doors, tapping the main, labor, equipment, excavation, proper backfill and restoration required to install the air release/vacuum valve at the location shown on the plans or as directed in accordance with the specifications and standard drawings complete and ready for use. All air release/vacuum valves on a project shall be paid under one bid item regardless of size. No separate pay items will be established for size variations. Only in the case of the uniqueness of a particular air release/vacuum valve would a separate bid item be established. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S FORCE MAIN DIRECTIONAL BORE Payment under this item is made whenever the plans or specifications specifically show directional boring is to be utilized in order to minimize the impact of open cut for the installation of sewer or force main under streets, buildings, creeks, and etc. Payment under this item shall include the specified bore pipe, labor, and equipment. No separate payment shall be made for bore pipe installed in the bore whether used as a carrier pipe or an encasement of a separate carrier pipe. This item shall also include pipe anchors at each end of the bore when specified to prevent the creep or contraction of the bore pipe. Carrier pipe installed within a bore pipe shall be paid separately under pipe items. Payment under this item shall not be size specific and no separate bid items will be established for size variations. The bore pipe sizes to be included under this item shall be as shown on the plans and/or in the specifications. Any and all directional bores in each contract shall be paid under one directional bore bid item included in the contract regardless of size. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S FORCE MAIN POINT RELOCATE This item is intended for payment for horizontal and/or vertical relocation of a short length of an existing main at the locations shown on the plans. This bid item is to be used to relocate an existing force main at point locations such as to clear a conflict at a

proposed drainage structure, pipe or any other similar short relocation situation, and where the existing pipe material is to be reused. The contractor shall provide any additional pipe or fitting material needed to complete the work as shown on the plans and specifications. The materials provided shall be of the same type and specification as those that exist. Substitution of alternative materials shall be approved by the engineer in advance on a case by case basis. New polyethylene wrap is to be provided (if wrap exists or is specified in the specifications to be used). If it is necessary that the pipe be disassembled for relay, payment under this item shall also include replacement of joint gaskets as needed. Bedding and backfill shall be provided and performed the same as with any other pipe installation as detailed in the plans and specifications. Payment under this item shall be for each location requiring an existing main to be relocated horizontally or vertically regardless of pipe size or relocation length. No separate pay items will be established for pipe size variations or relocation segment length variations. Force Main Relocate shall not be paid on a linear feet basis; but shall be shall be paid EACH (EA) at each location when complete and placed in service. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

S FORCE MAIN TAP SLEVE/VALVE RANGE 1 OR 2 This item shall include the specified tapping sleeve, valve, valve box, concrete pad around valve box (when required in specifications or plans), labor, and equipment to install the specified tapping sleeve and valve, complete and ready for use in accordance with the plans and specifications. The size shall be the measured internal diameter of the live pipe to be tapped. The size tapping sleeve and valve to be paid under sizes 1 or 2 shall be as follows:

Range 1 = All live tapped main sizes up to and including 8 inches
Range 2 = All live tapped main sizes greater than 8 inches

Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S FORCE MAIN TIE-IN This bid description shall be used for all force main tie-in bid items of every size except those defined as "Special". This item includes all labor, equipment, excavation, fittings, sleeves, reducers, couplings, blocking, anchoring, restoration, testing and backfill required to make the force main tie-in as shown on the plans and in accordance with the specifications complete and ready for use. This bid item shall include purge and sanitary disposal of any sewage from any abandoned segments of force main. Pipe for tie-ins shall be paid under separate bid items. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S FORCE MAIN VALVE This description shall apply to all force main valves of every size required in the plans and specifications, except those bid items defined as "Special". Payment under this description is to be for gate or butterfly force main valves being installed with new force main. This item includes the valve as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring (if any), valve box and valve stem extensions, backfill, concrete pad around valve box (if required by specification), restoration, testing, and etc., required to install the specified valve at the location shown on the plans in accordance with the specifications and standard drawings complete and ready for use. If required on plans and/or proposed adjoining DIP is restrained, force main valves shall be restrained. Force main valve restraint shall be considered incidental to the force main valve and adjoining pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be

referenced. This item shall be paid EACH (EA) when complete.

S FORCE MAIN VALVE BOX ADJUST Includes all labor, equipment, valve box and valve stem extensions (if required), excavation, backfill, concrete pad around valve box (when specified in specifications or plans), restoration, and etc., to adjust the top of the force main valve box to finished grade complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S LATERAL CLEANOUT This item shall be for payment for installation of a cleanout in a service lateral line. This item shall include furnishing and installation of a tee, vertical pipe of whatever length required, and threaded cap. The cleanout shall extend from the lateral to final grade elevation. The size of the cleanout shall be equivalent to the size of the lateral. The cleanout materials shall meet the same specification as those for the lateral. The cleanout shall be installed at the locations shown on the plans or as directed by the engineer. Only one pay item shall be established for cleanout installation. No separate pay items shall be established for size or height variances. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S LATERAL LOCATE This bid item is to pay for all labor, equipment, and materials needed in locating an existing sanitary sewer service lateral for tie-in of the lateral to new mainline sewers and/or for the relocation of a lateral. This bid item shall be inclusive of any and all methods and efforts required to locate the lateral for tie-in or relocation of the lateral. Locating methods to be included under this items shall include, but are not limited to, those efforts employing the use of video cameras from within an existing sanitary sewer main or lateral, electronic locating beacons and/or tracers inserted into the sanitary sewer main or lateral, careful excavation as a separate operation from mainline sewer or lateral excavation, the use of dyes to trace the flow of a lateral, or any combination of methods required to accurately locate the lateral. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA).

S LATERAL LONG SIDE This bid item description shall apply to all service lateral installations of every size up to and including 6 inch internal diameter, except those lateral bid items defined as "Special". This item includes the specified piping material, main tap, bends, clean outs, labor, equipment, excavation, backfill, testing, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for service lateral installations where the ends of the lateral connection are on opposite sides of the public roadway. The new lateral must cross the centerline of the public roadway to qualify for payment as a long side lateral. The length of the service lateral is not to be specified. Payment under this item shall not be restricted by a minimum or maximum length. The contractor shall draw his own conclusions as to the length of piping that may be needed. Payment under this item shall include boring, jacking, or excavating across the public roadway for placement. Placement of a service lateral across a private residential or commercial entrance alone shall not be reason to make payment under this item. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. No additional payment will be made for rock excavation or for bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S LATERAL SHORT SIDE This bid item description shall apply to all service lateral installations of every size up to and including 6 inch, except those lateral bid items defined as "Special". This item includes the specified piping material, main tap tee, bends, clean outs, labor, equipment, excavation, backfill, testing, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for lateral installations where both ends of the lateral connection are on the same side of the public roadway, or when an existing lateral crossing a public roadway will remain and is being extended, reconnected, or relocated with all work on one side of the public roadway centerline as shown on the plans. The length of the service lateral is not to be specified and shall not be restricted to any minimum or maximum length. Payment shall be made under this item even if the lateral crosses a private residential or commercial entrance; but, not a public roadway. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. The contractor shall draw his own conclusions as to the length of piping that may be needed. No additional payment will be made for rock excavation or for bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

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

S MANHOLE Payment under this item is for the installation of new 4 foot interior diameter sanitary sewer manhole. Payment for manholes will be made at the contract unit price each in place complete and ready for use at the locations shown on plans in accordance with specifications and standard drawings. Manholes shall include concrete base, barrel sections, cone section or slab top, steps, excavation, backfilling, air testing, restoration, and cleanup in accordance with the specifications and standard drawings. Payment shall be made under this item regardless of whether the base is to be precast or cast-in-place (doghouse). All materials, except casting, shall be new and unused. An existing casting from an existing abandoned or removed manhole is to be reused and shall be considered incidental to this item. When a new casting is specified, or an existing casting is unavailable, it shall be paid as a separate bid item. Anchoring of casting, new or used, shall be considered incidental to this bid item. No additional compensation will be paid for manhole height variations. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE ABANDON/REMOVE Payment under this item is for the partial removal and/or filling of any sanitary sewer manhole regardless of size or depth that no longer serves any purpose. Payment shall be made regardless of whether the manhole is or is not in conflict with other work. Any manhole requiring partial removal, but not total removal, in order to clear a conflict with other work shall be paid under this item. All manholes partially removed shall be removed to a point at least one foot below final grade, one foot below roadway subgrade, or one foot clear of any other underground infrastructure, whichever is lowest. If partial removal of an abandoned manhole is elected by the contractor, the remaining manhole structure shall be refilled with flowable fill. Payment for disposal of a sanitary sewer manhole will be made under this item only. Please refer to the Utility Company's

Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE ADJUST TO GRADE Payment under this item is for the adjustment of sanitary sewer casting elevation on all sizes of existing sanitary manholes. This work shall be performed in accordance with the sanitary sewer specifications. Payment shall be made under this bid item regardless of the amount of adjustment necessary to a sanitary sewer manhole casting or diameter of the manhole. Work under this pay item may be as simple as placing a bed of mortar under a casting; but, shall also be inclusive of installation of adjusting rings, and /or addition, removal, or replacement of barrel sections. The existing casting is to be reused unless a new casting is specified on the plans. New casting, when specified, shall be paid as a separate bid item. Anchoring of the casting shall be incidental to this item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE CASTING STANDARD Payment under this bid items is for furnishing of a new standard traffic baring casting for sanitary manholes meeting the requirements of the sanitary sewer specifications and standard drawings. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when installed.

S MANHOLE CASTING WATERTIGHT Payment under this bid item is for furnishing of a new watertight traffic baring casting for sanitary manholes meeting the requirements of the sanitary sewer specifications and standard drawings. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when installed.

S MANHOLE RECONSTRUCT INVERT This bid item is to pay for all labor, equipment, and material for rework of the manhole bench to redirect or eliminate flow, such as when the flow of a pipe or pipes are being removed or redirected. This work will be as specified in the plans, specifications, or directed by the engineer. This work may consist of, but is not limited to, removal of concrete and/or placement of concrete in elimination or redirect of flow. This item shall also include providing and placement of a rubber seal or boot as required by utility specification, standard drawing or plan. The contractor shall draw his own conclusions as to the effort and scope of work needed to comply with the specifications, standard drawings, and plans. No payment shall be made under this bid when MANHOLE TAP EXISTING, or MANHOLE TAP EXISTING ADD DROP are being paid at the same location, as this type of work is included in those items. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE TAP EXISTING This bid item is to pay for all labor, equipment, and material for coring one opening in an existing manhole base, addition of a rubber seal as specified, and rework of the manhole bench to direct the additional pipe flow. The bid item shall be paid for each core opening added to a single manhole. This bid item shall also include any rework of the existing manhole bench due to the elimination of other existing pipes and flow. This work will be as specified in the plans, specifications, or directed by the engineer. This work may consist of, but is not limited to, removal of concrete and/or placement of concrete in the addition, elimination, or redirect of flow. The contractor shall draw his own conclusions as to the effort and scope of work needed to comply with the

specifications, standard drawings, and plans. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE TAP EXISTING ADD DROP This bid item is to pay for all labor, equipment, and material for coring one opening in an existing manhole base, addition of a rubber seal as specified, addition of a vertical drop pipe to the outside of the manhole, placement of reinforcing steel and concrete to encase vertical pipe, and rework of the manhole bench to direct the additional pipe flow. The bid item shall be paid for each drop added to a single manhole. This bid item shall also include any rework of the existing manhole bench due to the elimination of other existing pipes and flow. This work will be as specified in the plans, specifications, or directed by the engineer. This work may consist of, but is not limited to, removal of concrete and/or placement of concrete in the addition, elimination, or redirect of flow. The contractor shall draw his own conclusions as to the effort and scope of work needed to comply with the specifications, standard drawings, and plans. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE WITH DROP Payment under this item is for the installation of new 4 foot interior diameter sanitary sewer manhole with drop. Payment for drop manholes will be made at the contract unit price each in place complete and ready for use at the locations shown on plans in accordance with specifications and standard drawings. Drop manholes shall include concrete base, barrel sections, drop materials, cone section or slab top, steps, excavation, backfilling, air testing, restoration, and cleanup. Payment shall be made under this item regardless of whether the base is to be precast or cast-in-place (doghouse). All materials, except casting, shall be new and unused. An existing casting from an existing abandoned or removed manhole is to be reused and shall be considered incidental to this item. When a new casting is specified, or an existing casting is unavailable, it shall be paid as a separate bid item. Anchoring of casting, new or used, shall be considered incidental to this bid item. No additional compensation will be paid for manhole height variations. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE WITH LINING Payment under this item is for the installation of new 4 foot interior diameter sanitary sewer manhole with corrosion resistant lining. Payment for manholes will be made at the contract unit price each in place complete and ready for use at the locations shown on plans in accordance with specifications and standard drawings. Manholes shall include concrete base, barrel sections, cone section or slab top, steps, lining, excavation, backfilling, air testing, restoration, and cleanup in accordance with the standard drawings. Payment shall be made under this item regardless of whether the base is to be precast or cast-in-place (doghouse). All materials, except casting, shall be new and unused. An existing casting from an existing abandoned or removed manhole is to be reused and shall be considered incidental to this item. When a new casting is specified, or an existing casting is unavailable, it shall be paid as a separate bid item. Anchoring of casting, new or used, shall be considered incidental to this bid item. No additional compensation will be paid for manhole height variations. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S MANHOLE WITH TRAP Payment under this item is for the installation of a new manhole with

trap. Payment for trap manholes will be made at the contract unit price each in place complete and ready for use at the locations shown on plans in accordance with specifications and standard drawings. Trap manholes shall include concrete base, manhole structure and trap materials, cone section or slab top, steps, excavation, backfilling, air testing, restoration, and cleanup. All materials, except casting, shall be new and unused. Payment shall be made under this item regardless of whether the base is to be precast or cast-in-place (doghouse). An existing casting from an existing abandoned or removed manhole is to be reused and shall be considered incidental to this item. When a new casting is specified, or an existing casting is unavailable, it shall be paid as a separate bid item. Anchoring of casting, new or used, shall be considered incidental to this bid item. No additional compensation will be paid for manhole height variations. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S PIPE This description shall apply to all PVC and ductile iron gravity sewer pipe bid items of every size and type 8 inches internal diameter and larger, except those bid items defined as "Special". This item includes the pipe specified by the plans and specifications, all fittings (including, but not limited to, tap tees and couplings for joining to existing similar or dissimilar pipes), polyethylene wrap (if required by specification), labor, equipment, excavation, bedding, restoration, pressure or vacuum testing, temporary testing materials, video inspection, backfill, and etc., required to install the specified new pipe and new fittings at the locations shown on the plans, or as directed, in accordance with the specifications and standard drawings complete and ready for use. This bid item shall include material and placement of flowable fill under existing and proposed pavement, and wherever specified on the plans or in the specifications. No additional payment will be made for rock excavation. Measurement of quantities under this item shall be through fittings and encasements to a point at the outside face of manhole barrels, or to the point of main termination at dead ends or lamp holes. Carrier pipe placed within an encasement shall be paid under this item and shall include casing spacers and end seals. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S PIPE POINT REPAIR This item is to be used to pay for repair of short lengths of existing sanitary sewer pipe that, through prior video inspection or other means, are known to have pre- existing failure. Pipe Point Repair may be needed in preparation for installation of cured-in-place-pipe (CIPP) lining or other instances where failure is known and repair is prudent. The size of pipe shall not be defined in separate bid items. All diameter sizes of point repair shall be paid under this one item. The materials to be used to make the repair shall be as defined on the plans or in the specifications. This bid item shall include all excavation, pipe materials, joining materials to connect old and new pipe, bedding, and backfill to complete the repair at the locations shown on the plans or as directed by the engineer, complete and ready for use. This bid item shall include bypass pumping when required. Measurement shall be from contact point to contact point of old and new pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF).

S PUMP STATION This item is for payment for installation of sanitary pump stations including above or below ground structure for housing of the pumps. This item shall include all pumps, piping, fittings, valves, electrical components, building materials, concrete, any other appurtenances, labor, equipment, excavation, and backfill, to complete the pump station installation as required by the plans, standard drawings, and specifications, complete and ready for use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall

be referenced. This item shall be paid LUMP SUM (LS) for each when complete.

S STRUCTURE ABANDON This item is to be used to pay for abandonment of larger above or below ground sewer structures such as air release/vacuum valve vaults, pump stations, tanks, etc. Payment under this time shall not be limited to size or scope; however structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to sewer construction, (i.e., abandonment of standard air release/vacuum valves up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted fill or flowable fill for abandonment of the structure in place and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

S STRUCTURE REMOVAL This item is to be used to pay for removal of larger above or below ground sewer structures such as air release/vacuum valve vaults, pump stations, tanks, and etc. Payment under this time shall not be limited to size or scope; however, structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to sewer construction, (i.e., removal of standard air release/vacuum valves and their structure up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted backfill for removal of the structure and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

TECHNICAL SPECIFICATIONS

FOR THE

CITY OF RUSSELL, KENTUCKY

EX. WATERLINE, GRAVITY SEWER, FORCEMAIN RELOCATION
ITEM NO. 9-1073.00

GREENUP COUNTY, KENTUCKY

SEPTEMBER 2019

PREPARED BY:

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CITY OF RUSSELL- RUSSELL, KY
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STANDARD SPECIFICATIONS

1. The "Standard Specifications for Road and Bridge Construction" of the Kentucky Transportation Cabinet / Department of Highways 2012 edition shall govern work and materials which are not specified or modified herein or on the project Contract Drawings. The project Contract Drawings and Specifications, in the event of a discrepancy, shall supersede the Kentucky Transportation Cabinet Specifications.

GENERAL

Section 01000

Standards

Section 1. All material furnished by the Contractor to be installed on the Project shall conform to the minimum requirements of the latest revisions in effect on the date of the standard specification published by the described organizations, unless other requirements are stated in these specifications. The standard specifications are combined under a single caption, for the sake of brevity, whenever referred to in the specifications as follows:

American Society of Testing Materials	ASTM
American Standards Association	ASA
American Water Works Association	AWWA
American Concrete Institute	ACI
American Association of the State Highway Officials	AASHO
Standard Specifications for Road and Bridge Construction, Kentucky Department of Highways	KDOH
Federal Specifications	FED
American Railway Engineering Association	AREA
Occupational Safety and Health Administration	OSHA
National Electric Code	NECK
Steel Structures Painting Council	SSPC
Fiberglass Reinforced Pipe Institute	FRPI
Kentucky Basic Building Code	KBBC

The standards referred to, except as modified in these specifications, shall have the same force and effect as though printed herein. These standards are not furnished to bidders because contractors, manufacturers, and trades involved are generally assumed to be familiar with their requirements. The Consulting Engineer will furnish, upon request, information as to how copies of and standards, included by reference only, may be obtained.

Inspection and Testing

Section 2. The manufacturer of the specific materials shall establish the necessary quality control and inspection practice to assure compliance with the individual specification outlined above for the particular material.

Construction Site

Section 3. The construction area shall be confined to the limits of the public right-of-way in streets, the limits of the construction easements on private property as set forth by the Owner or to the property belonging to the Owner. The limits for the construction area are shown on the detailed construction drawings.

Samples

Section 4. Samples of materials or equipment submitted for review and contract compliance shall have a label indicating the material represented, its place of origin, and the name of the producer, the Contractor expecting to use the equipment, and the work for which the material will be used. Samples of finished materials shall be marked to indicate where they are required by the drawings and specifications.

Each delivery of samples shall be accompanied under separate cover by letter in duplicate from the Contractor containing a list of the samples, as indication of where the materials are intended to be used and the brands of materials and names of the manufacturers.

Acceptance of any samples shall not be taken in itself to change or modify any contract requirements, for acceptance shall be only for the characteristics or for the use of the material. The Project Manager, whenever he may deem it necessary, may take test samples from the various materials or equipment delivered to the site of the work by the Contractor. If any such test samples fails to meet the specification requirements, any previous approvals will be withdrawn and such material or equipment shall be subject to removal and replacement by the Contractor with material or equipment meeting the specification requirements; or, at the discretion of the Project Manager, the defective materials and equipment may be permitted to remain in place subject to a satisfactory adjustment of the contract.

Climatic Conditions

Section 5. All work which will be affected by climatic conditions, (wind, rain, frost, freezing or any other environmental conditions) shall be suspended unless permission is given by the Project Manager to proceed. Whenever work proceeds under any such conditions, the Contractor shall provide approved facilities for protecting all the materials and the finished work. This will include heating of materials if required for their proper installation.

END OF SECTION

SECTION 01301

SUBMITTALS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Submittal Procedures.

B. Construction Progress Schedules.

C. Proposed products List.

D. Shop Drawings.

E. Product Data.

F. Samples.

G. Manufacturers' Instruction.

H. Manufacturers' Certificates.

I. Resubmittals.

1.02 RELATED SECTIONS

A. Section 01400, Quality Control: Manufacturers' Field Services and Reports.

B. Section 01700, Contract Closeout: Contract Warranty and Manufacturer's Certificates Closeout Submittals.

1.03 SUBMITTAL PROCEDURES

A. Transmit each submittal with AIA Form G810 or Engineer accepted form.

B. Sequentially number the transmittal forms. Resubmittals to have original number with an alphabetic suffix.

C. Identify Project, Contractor, Subcontractor or Supplier; pertinent Drawing sheet and detail number(s), and Specification Section number, as appropriate.

D. Apply Contractor's stamp, signed or initialled certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.

E. Make all submittals far enough in advance of Schedule dates of installation to provide all required time for review, for securing necessary reviews by others, for possible revision and resubmittal, for placing orders and securing delivery. Deliver, postage prepaid. Schedule submittals to expedite the Project, and deliver to the Engineer at business address. Coordinate submission of related items.

F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.

G. Provide space for Contractor and Engineer review stamps.

H. Revise and resubmit submittals as required, identify all changes made since previous submittal.

I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

J. In scheduling, allow at least ten (10) full working days (Monday through friday, less legal holidays) for the Engineer's review and approval. Following his receipt of the submittal Engineer will return via first class mail. The Engineer is required by the Owner to provide prompt disposition of all submittals, and will transmit the submittal, request for additional information, or a notification that additional time will be required for review and approval due to the complexity of the submittal, within the ten (10) working day period. Regardless of the size and complexity of the submittal, review and approval shall be complete within thirty (30) working days.

1.04 PROPOSED PRODUCTS LIST

A. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.05 SHOP DRAWINGS

A. Submit in the form of one reproducible transparency and one opaque reproduction, or, submit the number of copies which the Contractor requires, plus three (3) copies which will be retained by the Engineer.

1.06 PRODUCT DATA

A. Submit the number of copies which the Contractor requires, plus three (3) copies which will be retained by the Engineer.

B. Mark each copy to identify applicable products, models, options, and other data. Mark out inapplicable areas. Supplement manufacturers' standard data to provide information unique to this Project.

C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01700 - Contract Closeout.

1.07 SAMPLES

A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Engineer's selection.

C. Include identification on each sample, with full Project information.

D. Submit the number or samples specified in individual Specification Sections; one of which will be retained by the Engineer.

E. Reviewed samples which may be used in the Work are indicated in individual Specification Sections.

1.08 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual Specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.09 MANUFACTURER'S CERTIFICATES

A. When specified in individual Specification Sections, submit manufacturers' certificate to the Engineer for review, in quantities specified for Project Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product, but must be acceptable to the Engineer.

1.10 RESUBMITTALS

A. The Owner may request a fee to be paid by the Contractor for submittals which are being reviewed by the Engineer for the third time or more. Each claim by the Owner will be substantiated on a time and material basis.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not used

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Quality assurance and control of installation.

B. References.

C. Field samples.

D. Mock-up.

E. Inspection and testing laboratory services.

F. Manufacturers' field services and reports.

1.02 RELATED SECTIONS

A. Section 01060, Applicable Codes.

B. Section 01090, Reference Standards.

C. Part 3, General Conditions, Section 41: Shop Drawings and Samples.

D. Section 01600, Material and Equipment: Requirements for Material and Product Quality.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply fully with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.04 REFERENCES

A. Conform to reference standard by date of issue current on date of Contract Documents.

1.05 FIELD SAMPLES

A. Install field samples at the site as required by individual specifications Sections for review.

B. Acceptable samples represent a quality level for the Work.

C. Where field sample is specified in individual Sections to be removed, clear area after field sample has been accepted by the Engineer.

1.06 MOCK-UP

A. Tests will be performed under provisions identified in this Section.

B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been accepted by the Engineer.

1.07 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual Specification Sections, require material or product suppliers, or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment and lubrication as applicable, and to initiate instructions when necessary.

B. Manufacturer's personnel are to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

C. Submit report in duplicate within 10 days of observation to the Engineer for review.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01410

TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Section and payment.

B. Contractor submittals.

C. Laboratory responsibilities.

D. Laboratory reports.

E. Limits on testing laboratory authority.

F. Contractor responsibilities.

G. Schedule of inspections and tests.

1.02 RELATED SECTIONS

A. Part 3, General Conditions.

B. Section 01650, Starting of Systems: Testing, Adjusting, and Balancing of Systems.

C. Section 01700, Contract Closeout: Project Record Documents.

D. Individual Specification Sections: Inspections and Tests Required, and Standards for Testing.

1.03 REFERENCES

A. ANSI/ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

B. ANSI/ASTM E329 - Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

1.04 SELECTION AND PAYMENT

A. Contractor shall employ and pay for services of an independent testing laboratory to perform specified inspection and testing.

B. Employment of testing laboratory shall in no way relieve Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.05 QUALITY ASSURANCE

A. Comply with requirements of ANSI/ASTM E329 and ANSI/ASTM D3740.

B. Laboratory: Authorized to operate in State in which Project is located.

C. Laboratory Staff: Maintain a full time State registered Engineer on staff to review services.

D. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards (NBS) Standards or accepted values of natural physical constants.

1.06 CONTRACTOR SUBMITTALS.

A. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time registered Engineer and responsible officer.

B. Submit copy of report of Laboratory Facilities Inspection made by Materials Reference Laboratory of National Bureau of Standards (NBS) during most recent tour of inspection, with memorandum of remedies of any deficiencies reported by the inspection.

1.07 LABORATORY RESPONSIBILITIES

A. Test samples of mixes submitted by Contractor.

B. Provide qualified personnel at site. Cooperate with the Engineer and Contractor in performance of services.

C. Perform specified inspection, sampling, and testing of Products in accordance with specified standards.

D. Ascertain compliance of materials and mixes with requirements of Contract Documents.

E. Promptly notify the Engineer and Contractor of observed irregularities or non-conformance of work or products.

F. Perform additional inspections and tests required by the Engineer.

1.08 LABORATORY REPORTS

A. After each inspection and tests, promptly submit two copies of laboratory report to the Engineer, and to Contractor.

B. Include:
1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and Specifications section.
6. Location in the Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

C. When requested by the Engineer, provide interpretation of test results.

1.09 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not assume any duties of Contractor.

D. Laboratory has no authority to stop the Work.

1.10 CONTRACTOR RESPONSIBILITIES

A. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.

B. Cooperate with laboratory personnel, and provide access to the Work.

C. Provide incidental labor and facilities to provide access to Work to be tested, to obtain and handle samples at the site or at source of Products to be tested, to facilitate tests and inspections, storage and curing of test samples.

D. Notify the Engineer and laboratory 24 hours prior to expected time for operations requiring inspection and testing services.

E. Where excavated material available for compacting proves to be unsuitable or the Contractor finds it impractical to use the excavated material to meet the requirements, the Contractor shall, at not extra cost compensation, procure suitable backfill material elsewhere and dispose of the unsuitable material.

1.11 SCHEDULE OF INSPECTIONS AND TESTS

A. Inspection and tests for soil and rock shall be in accordance with Division 2 and ASTM D3470.

B. Inspections and tests for concrete shall be in accordance with Division 3.

C. Owner will provide testing lab services for soil to determine acceptability of the fill or material solely for the Owner's own benefit. Additional tests and inspections desired by the Contractor to meet compaction limits shall be provided by the Contractor.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01666 - TESTING SEWER SYSTEMS

PART 1 -GENERAL

1.01 DESCRIPTION

A. The work covered by this Section consists of furnishing all labor, equipment and material required to test sewer systems, and related work as described herein and/or shown on the Drawings.

B. The General Conditions, Supplementary Conditions, and all other herein bound and accompanying documents are part of this Section and of the Agreement. Submission of proposal implies that the bidder is fully conversant with requirements of the above-mentioned documents.

1.02 SUBMITTALS

A. Shop Drawings submittals shall be made in accordance with the provisions of Division 1. Obtain the Engineer's review of this submittal prior to fabrication.

PART 3 – EXECUTION

3.01 TESTING GRAVITY SEWER SYSTEMS:

A. Leakage shall not exceed 100 gallons/inch diameter/mile of sewer/day for any completed gravity sewer.

B. Prior to testing, all sewer lines shall be cleaned and inspected for major defects. Pre-cleaning by high velocity jet or other method may be necessary.

C. Visual testing of all sewer lines shall be performed by the Engineer prior to final acceptance to verify accuracy of alignment and freedom from debris and obstructions. The full diameter of the pipe for straight alignments shall be visible when viewed between consecutive manholes. The method of test shall be either photography, closed circuit television, or visually lamping with mirrors and lights.

D. The Contractor shall be required to conduct tests to determine the watertightness of the sewer when completed. The tests shall be observed by the Engineer, but the Contractor shall furnish all labor, equipment and materials required in connection therewith, including the necessary water.

E. As a demonstration of the workmanship and materials proposed to be used, the Contractor shall test the first section before proceeding with

construction further than 100 feet. After the first section passes test, construction may resume. The testing operation shall be continuous throughout the construction of the project and at no time during construction shall there be more than 1000 feet not tested, if required by the Engineer.

F. The sewer shall be tested in sections, complete with laterals, each section extending between the two nearest manholes.

G. Air Test:

1. The sewer line shall be sealed at each end. The seal at one end shall have an orifice through which to pass air into the pipe. An air supply shall be connected to the orifice at one end of the line. The air supply line will contain an on-off gas valve, a pressure gauge having a range of from 0 to 10 psi and a regulator or relief valve set no higher than 9.0 psi to avoid over-pressurizing and displacing temporary or permanent plugs. The gauge shall have minimum divisions of .10 psi and shall have an accuracy of plus or minus .04 psi. The seals at each manhole shall be properly blocked to prevent displacement while the line is under pressure.

2. The pipe line under test shall be pressurized to four (4) psig. The line will be allowed to stabilize between 4 psig and 3.5 psig for a period of not less than 5 minutes. If necessary, air should be added to the line to maintain the pressure above 3.5 psig. After the stabilization period, the gas valve shall be closed. When the line pressure drops to no less than 3.5 psig, commence timing with a stop watch. The stop watch should be allowed to run until such time as the line pressure drops 1.0 psig. Then the watch should be stopped and the time lapse compared for the 1.0 psig pressure drop with the allowable time lapse in these specifications for the designated pipe size and length specified by the Engineer. If the time lapse is greater than that specified, the section undergoing test shall have passed, and the test may be discontinued at that time. If the time is less than that specified, the line has not passed the test and the Contractor will be required to prepare the line for retest. The test may be discontinued once the prescribed time has elapsed even though the 1.0 psig drop has not occurred.

   Allowable time lapse shall be as shown in the following Air Test Table.

3. If the pipe line to be tested is beneath the ground water level, the test pressure shall be increased 0.433 psig for each foot the ground

water level is above the crown of the pipe, but not greater than 9.0 psig. If the average height of ground water above the pipe invert is greater than 12.7 feet, the section so submerged may be tested using 9.0 psig as the starting test pressure.

4. When the sewer line is tested by the Air Test Method, each and every manhole is subject to be tested by the Exfiltration Method described herein.

5. No person is allowed in the manholes while the test is being performed.

AIR TEST TABLE FOR GRAVITY SEWERS

SPECIFICATIONS TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED WHEN TESTING ONE PIPE DIAMETER ONLY

Specification Time for Length (L) Shown (min: sec)

Pipe Diameter	Minimum Test Time	Length For Minimum Time	Test Duration	Amount of Time for the Given Foot Range						
				100	150	200	250	300	350	400
inches	Min:Sec	Feet	Sec	Feet	Feet	Feet	Feet	Feet	Feet	Feet
4	3:46	595	.380L	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42
8	7:34	299	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08
10	9:26	239	2.374L	9:26	9:26	9:26	9:54	11:52	13:51	15:50
12	11:20	199	3.418L	11:20	11:20	11:24	14:15	17:06	19:56	22:47
15	14:10	159	5.342L	14:10	14:10	17:48	22:16	26:43	31:10	35:37
18	17:00	133	7.692L	17:00	19:14	25:39	32:03	38:28	44:52	51:17
21	19:50	114	10.470L	19:50	26:11	34:54	43:38	52:21	61:05	69:48
24	22:40	100	13.670L	22:40	34:11	45:34	56:58	68:21	79:45	91:08

If the pipe line to be tested is of shorter length than that shown for length for Maximum Time, the Minimum Time lapse is required.

If the pipe line to be tested is beneath the ground water level, the test pressure shall be increased 0.433 psi for each foot the ground water level is above the crown of the pipe, but not greater than 9.0 psig.

3.02 TESTING MANHOLES:

A. General

1. The Engineer may elect to test any or all manholes if the Engineer feels that construction is not adequate. The Contractor shall perform and bear all costs of the testing.

2. Manhole watertightness: All joints, inlets and outlets, joints between frame and manhole section, or any other crack or portal shall be watertight.

3. If, when tested, a manhole fails, the Contractor shall repair, reconstruct or otherwise make satisfactory the manhole, and repeat the tests until that manhole passes.

B. Test Procedure:

1. New manholes will be tested for water tightness by application of exfiltration test. This test shall consist of completely sealing all pipe openings into the manhole and filling manhole with water to the top of the casting frame. After the test period, exfiltration is defined as the amount of water required to refill the manhole. Exfiltration shall not exceed 50 gallons per manhole during 24 hour testing period.

2. A vacuum test may also be used to test manholes or wetwells, as follows:

a. Plug the manhole.
b. Place a vacuum of 10" Hg on the manhole.
c. Measure the time for the vacuum to drop to 9" Hg.
d. For a 48" I.D. manhole, if the vacuum has not dropped to 9" Hg within 60 seconds, the manhole will have passed the vacuum test. If the vacuum drops below 9" Hg in 60 seconds or less, the manhole will have failed the vacuum test.
e. For a 60" I.D. manhole the test time is 75 seconds.
f. For a 72" I.D. manhole the test time is 90 seconds.

3. Any infiltration discovered by physical inspection in any manhole during the one year warranty period shall be repaired by the Contractor at no additional cost to Owner.

3.03 TESTING FORCE MAINS AND RIVER CROSSINGS

A. General

1. The leakage test for force mains and river crossings shall be required for the entire length.

2. Before apply the specified test pressure, all air shall be expelled from the pipe and valves. If permanent vents are not located at all points, the Contractor shall install corporation cocks at such points so that the air can be expelled. After all air has been expelled, the corporation cocks shall be closed and the specified test pressure applied. At the conclusion of a successful pressure test, the corporation cocks shall be removed and plugged or left inplace at the discretion of the Engineer. The hydrostatic test shall be made by the Contractor at 150 psi pressure for a minimum of 2 hours or as directed otherwise by the Engineer. Leakage is defined as the quantity of water that must be supplied into the line section being tested in order to maintain the pressure within 5 psi of the specified test pressure after the pipe has been filled with water and the air has been expelled. "Make Up" water shall be measured by a displacement meter or by the volumetric method.

3. Leakage shall not be measured by a drop in pressure in a test section over a period of time. Leakage in excess of the amount specified shall be caused for rejection of the pipe line, or any part thereof and will not be accepted until the leakage is brought within these limits. Any cracked or defective pipe, joints or fittings discovered in this test shall be removed and replaced by the Contractor at his own expense and with sound material furnished by the Contractor. Allowable leakage for a period of one hour shall be as shown in the following Allowable Leakage Table.

4. The Contractor shall perform and bear all costs of testing.

ALLOWABLE LEAKAGE TABLE
FOR FORCE MAINS AND RIVER CROSSINGS

LEAKAGE PER 1000 FT: GALLONS PER HOUR
HYDROSTATIC TEST PRESSURE 150 PSI

Pipe Size (inches)	Allowable Leakage (GPH)	Pipe Size (inches)	Allowable Leakage (GPH)
2	0.21		
3	0.28	14	1.29
4	0.37	16	1.47
6	0.55	18	1.66
8	0.74	20	1.84
10	0.92	24	2.21
12	1.1	30	2.76

3.04 TESTING CONCRETE

A. General

1. The following field and related laboratory tests shall be made by the Contractor when required or upon the request of the Engineer and they shall be performed in strict accordance with the listed ASTM Specifications:

Test	ASTM Specifications
Slump	C 143
Air	C 173
Test Cylinders	C 31 or C 513
Core Sample	C 42

2. Slump shall be measured for each truckload of concrete and each time test cylinders are to be made and at any other time upon request of the Engineer. The slump shall be not more than 4 inches nor less than 2 inches unless specifically excepted by the Engineer.

3. Air content shall be measured for each truckload of concrete and each time test cylinders are to be made and at any other time upon request of the Engineer.

4. Test cylinders shall be made in sets of four. One cylinder shall be field cured and broken at 7 days. Three cylinders shall be laboratory cured and broken at 28 days. Contractor shall be responsible for all handling and transportation to an approved testing laboratory. Contractor shall submit to the Engineer three copies of each testing laboratory report.

5. The average strength of Laboratory cured cylinders as well as the average of any 5 consecutive strength tests shall be equal to, or greater than, 3,000 lbs. per sq. in., and no strength test shall have a value less than 2,800 lbs. per sq. in. Where the quality of hardened concrete is questionable, the Engineer may require tests to be performed in accordance with A.S.T.M. C-42.

6. A set of test cylinders shall be taken for each 50 cubic yards of concrete placed or fraction thereof, or at any time as required by the Engineer.

7. The Contractor shall bear all costs of testing.

END OF SECTION

SITEWORK

Section 02200

Excavation and Backfill

General

Section 1. The work covered under this section consists of furnishing all labor, materials, and equipment for excavation, backfilling, compacting, rough and final grading, required to complete the construction as shown and specified in the Contract Documents.

Sheeting and Shoring

Section 2. The Contractor shall furnish, put in place, and maintain such piling, sheeting, bracing, etc., as is required by OSHA regulations and the "Safety & Health Regulations for Construction", Title 29, Chapter XVII, CFR, Part 1926, formerly Title 29, Chapter XIII, CFR, Part 1518.

Such piling, sheeting, bracing, etc., shall be furnished, put in place, and maintained as may be required to support the sides of all excavation to prevent any movement which could cause injury to persons, structures, utilities or property, either public or private or any portion of the work being performed under this Contract.

Sheeting, if required, shall remain in place until the pipe or structure has been laid or constructed, tested for defects and repaired if necessary, and the backfill placed and compacted. Sheeting may be pulled concurrently with the placing of backfill if directed by the Project Manager.

The Contractor shall leave in place any and all sheeting, bracing, etc., which the Project Manager may direct him, in writing, to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities or property, either public or private.

Removal of Water

Section 3. The Contractor shall provide at all times during the construction, proper and approved equipment including pumps and well points of sufficient capacity to meet the maximum requirements for the removal of water and like wastes from all excavations. The disposal of the water and wastes shall be in such a manner as not to interfere with the proper construction of pipe lines or masonry. This disposal shall not withdraw sand or cement from concrete work or affect the prosecution of work under his own or adjacent contracts.

The Contractor shall not dispose of ground and/or surface water into newly constructed sanitary sewers or existing sanitary sewers.

Pumping sumps shall be excavated outside the trench or structure excavation lines and be of sufficient size to meet the requirements of the location. The Contractor shall pump out or otherwise remove and dispose of, as fast as it may collect, any water or like wastes which may be found or may accumulate in the excavations. Underdrains, if required to keep the excavations dry, shall lead to pumping sumps.

All excavations must be kept dry as specified for laying pipe or for placing concrete.

Rock Excavation

Section 4. All costs incurred for rock excavation shall be included in the lump sum bid for this project. There shall not be a separate pay item for rock excavations. No excavated rock shall be used for backfill.

Rock excavation is defined as material which is either solid or stratified and which cannot be removed by recognized standard excavating methods. This material will require drilling, blasting, or some other mechanical means of shattering. Boulders one (1) cubic yard and over in volume required to be removed are classified as rock excavation even though portions of it may be stratified or laminated, or may be as hard as portions of sandstone or limestone.

The Contractor shall exercise all possible care in any blasting to avoid injury to persons and adjacent property. The rock shall be well covered and sufficient warning shall be given to all persons in the vicinity of the work before blasting. Proper care shall be exercised to avoid injury to water pipes or other structures either below or above ground. Caps or other exploders shall not be kept in the same place in which dynamite or other explosives are stored. All Federal, State or local regulations covering the use of explosives shall be strictly observed; and in addition, the Contractor shall conform to any further regulations which the Project Manager may deem necessary in this respect.

The Contractor shall remove all rock that is shattered below grade due to a too deep drill hole, a too heavy charge of explosives or for any other reason, and refill the excavation to the required grade with compacted gravel or other suitable material at his expense.

All structures, pipelines, water mains, conduits, etc., below and above ground that are damaged due to blasting of rock are to be replaced or repaired by the Contractor at his expense and to the satisfaction of the Project Manager.

Rock excavation shall be to the depth required to provide a minimum of four (4) inches of clearance below all parts of pipes, valves, or fittings.

The Contractor shall provide crushed aggregate pipe bedding to the specified grade. Trench widths in rock excavations shall be eight (8) inches wider than the outside diameter of the bell of the pipe. Any excavations and backfill beyond these limits will be at the expense of the Contractor.

Buried Pipe Lines

Section 5. Pipe line trenches shall be excavated so that the pipes and appurtenances can be installed to the alignments and grades required. Pipe line trenches in all types of traveled streets, roadways, drives and parking areas to a distance of five (5) feet behind curbs and all road shoulders shall be backfilled with granular material.

If, in the opinion of the Project Manager, the material at or below the normal grade of the bottom of the trench, or other excavation is unsuitable for foundation, it shall be removed to such depths and widths as he may direct and be replaced by the Contractor with gravel, crushed stone or other acceptable materials. Payment for this work will be made as provided in "Changes in Work" in the General Provisions.

If the bottom of any excavation is removed beyond the limits shown on the drawings or described in these specifications without authorization of the Project Manager, it shall be refilled at the Contractor's expense with gravel, crushed stone, or other acceptable material.

Mechanized equipment, such as bulldozers, front end loaders, etc., shall under no conditions, be used to push excavated material directly into the open trench as backfill between the bottom of the trench and one (1) foot above the pipe.

Where gravel backfill is specified, the backfill material from one (1) foot above the pipe to the street or shoulder grade (or subgrade of pavement), shall consist of approved gravel that shall be puddled with hoe and pipe nozzle after the trench is backfilled. The Contractor shall furnish the necessary tank trucks, water, pumps, and all equipment required to settle the gravel backfill by the puddling method.

When the type of trench backfill material is not indicated on the drawings or specified, the Contractor may backfill the trench from one (1) foot above the top of the pipe to the top of the trench with excavated material provided that such material consists of loam, clay, sand, gravel, or other materials that, in the opinion of the Project Manager, are suitable for backfilling. Care shall be taken to carry the backfill up evenly in the trench.

The Project Manager reserves the right to condemn any portion of the work during the term of this Contract, should any gravel backfilled trench settle or there is any other evidence to indicate that the backfill has been improperly placed. The Contractor will be ordered to reopen the trench at those locations and replace the backfill in the proper manner without additional compensation.

Gravel Backfill

Section 6. Gravel used for backfill shall consist of natural bank gravel having durable particles graded from fine to coarse in a reasonably uniform combination with no boulders or stones larger than two (2) inches in size. It shall be free from slag, cinders, ashes, refuse, or other deleterious or objectionable materials. It shall not contain excessive amounts of loam and clay and shall not be lumpy or frozen. No more than fifteen percent (15%) shall pass a No. 200 sieve. All such materials shall be approved by the Project Manager.

Subsurface Conditions

Section 7. The Contractor shall examine, investigate and inspect the construction site as to the nature and location of the work, and the general and local conditions at the construction site, including, without limitation, the character of surface or sub-surface conditions and obstacles to be encountered on and around the construction site; and shall make such additional investigation as he may deem necessary for the planning and proper execution of the work.

Site Preparation

Section 8. All trees, brush, stumps, logs, tree roots, and structures scheduled for demolition shall be removed.

All cut and fill areas shall be properly stripped. Topsoil shall be removed to its full depth and stockpiled for use in finish grading. Any rubbish, organic and other objectionable soils, and other deleterious material, shall be disposed of off the site, or as directed by the Project Manager if on-site disposal is provided. In no case shall such objectionable material be allowed in or under the fill unless specifically authorized in writing by the Project Manager.

Prior to the addition of fill, the original ground shall be compacted to meet the requirements of the specification. Special notice shall be given to the proposed fill area at this time. If wet spots, spongy conditions, or ground water seepage is found, corrective measures must be taken before the placement of fill.

Demolition

Section 9. The Contractor shall submit a schedule for the demolition of the structures.

The Contractor shall provide all materials and equipment required to meet the goals of demolition as set forth on the construction drawings.

The Contractor shall notify the Project Manager 30 days prior to the demolition of any structure.

END OF SECTION

SITEWORK

Section 02202

Excavation and Backfill - Pressure Pipelines

Trench Excavation

Section 1. Trenches for buried pressure pipelines shall be so excavated that the pipes and appurtenances may be installed to the alignments and grades specified or required.

Trenches shall be excavated to a depth that will provide for a minimum of three feet (3'-6") of cover over the pipe as measured from the proposed or final grade to the extreme outside limits of the pipe. Greater depths may be required by the plans or job conditions.

Rock, if encountered in the bottom of the trench, shall be excavated to a depth to provide a minimum of four (4) inches clearance below the extreme outermost limits of the pipe. Backfill shall be coarse aggregate, or bank run sand. Shattered materials below the above limits shall be removed and similarly backfilled.

When soft or otherwise unsuitable material is encountered, it shall be removed to such depths and widths as determined by the Project Manager and backfilled with crushed stone or gravel as approved by him.

Except as noted above, trenches shall be so excavated that they will provide a uniform and continuous bearing and support for the barrel of the pipe on solid and undisturbed ground at every point between bellholes except for that area near the mid-section of the pipe disturbed by the withdrawal of pipe slings or other lifting tackle. Bellholes shall be provided at each and every joint.

Pipe Bedding

Section 2. Pipes shall be placed on a minimum depth of four (4) inches of bedding, as measured from the extreme outermost dimension of the pipe. The bedding material shall extend laterally to the outermost limits of the trench.

Bedding material shall be coarse aggregate or bank run sand.

The bedding material shall be placed to grade and in such a manner as to completely support the pipe for its entire length and shall be thoroughly compacted by hand tamping.

Immediately after the joint has been made, the balance of the bedding material shall be brought up to the spring line of the pipe. The material shall be placed in uniform lifts of three (3) inch layers on each side of the pipe, and thoroughly compacted by hand spading and tamping. Care shall be taken to ensure that the material is thoroughly consolidated under the haunches of the pipe.

Initial Backfilling

Section 3. Backfill material as hereinafter specified shall be placed by hand from the bottom of the trench to the springline of the pipe in three (3) inch layers. The material shall be sliced and rammed under the haunches of the pipe and thoroughly compacted by tamping and in a manner that will not disturb the alignment of the pipe or fittings. Each individual length of installed pipe shall be bedded in this manner prior to the connection thereto of an additional length of pipe.

Specified backfill material shall be placed from the springline of the pipe to a plane twelve (12) inches above the extreme outermost limits of the pipe by hand or approved mechanical methods. Under no circumstances shall material be shoveled, dumped or pushed from the top of the trench onto the pipe. Special care shall be exercised with this portion of the backfill so as to avoid injuring or displacing the pipeline.

Initial backfill material shall be as follows:

A. When gravel trench backfill is specified or required, initial backfill shall be of the same material except that all stones larger than two (2) inches in diameter shall be removed from the immediate vicinity of the pipe.

B. When gravel trench backfill is not specified, initial backfill material may be of finely divided selected excavated material free from stones, lumps and clumps of clay, organic material and similar undesirable materials.

Balance of Backfill

Section 4. The balance of the backfill from a plane twelve (12) inches above the top of the pipe shall be as follows:

A. Trenches within roadways and parking areas or immediately adjacent thereto shall be backfilled with coarse aggregate or bank run sand.

B. Trenches in other areas may be backfilled with excavated material provided such material is free from rock, boulders, large stones, sticks, clumps and lumps of clay, organic material and other similar undesirable materials.

Trenches backfilled with gravel shall be brought up evenly in the trench to the elevation of the subgrade and thoroughly compacted or consolidated by suitable equipment and means approved by the Project Manager.

Trenches backfilled with excavated material shall be brought up evenly in the trench to grade as required by conditions. When the top of the trench is at a proposed grade the material shall be neatly rounded over the top of the trench to allow for settlement. In areas of sodding or seeding, the last six (6) inches of backfill material shall be topsoil.

END OF SECTION

SITEWORK

Section 02500

Entrance Roads, Drives and Parking Areas

Work Included

Section 1. This work shall include the construction of the entrance road, drives and/or parking areas where shown and as installed on the construction drawings.

Roadways

Section 2. Scope of the work. This contract shall include the furnishing of all the labor, materials and equipment required to construct the roadways, curbs and miscellaneous improvements as shown on the drawings and as provided in these specifications.

The work includes the following principal items:

a. Excavations and preparation of the subgrade.
b. Construction of aggregate wearing surface.

Equipment

Section 3. Vibratory compactors used for compacting subgrade and paving shall weigh not less than ten (10) tons.

Excavations and Subgrade Preparations

Section 4. This work shall consist of excavation for the roadways, including furnishing and incorporating all water required for compacting the subgrade, disposing of unsuitable and surplus material, preparing the subgrade, finishing shoulders, slopes, and ditches, all in accordance and in reasonably close conformity with the lines, grades, thicknesses and cross sections shown on the plans, or as directed by the Engineer and/or Owner.

Access Road and Parking Area Construction

Section 5. This work shall consist of furnishing and placing an aggregate wearing course on the completed and accepted subgrade, all in accordance with and in reasonably close conformity with the lines, grades, and typical cross section specified.

END OF SECTION

SITEWORK

Section 02512

Restoration of Pavement and Curbs

Work Included

Section 1. This work shall include the construction of roadway and curbs where such items have been removed in the course of the work of this project.

Roadways

Section 2. Scope of the work. This contract shall include the furnishing of all the labor, materials and equipment required to construct the roadways and curbs as provided in these specifications.

The work includes the following principal items:

a. Preparation of the subgrade; placing and rolling the sub-base.
b. Construction of base course pavement.
c. Construction of curbs (N/A Grayson).
d. Asphalt concrete pavement.
e. Concrete pavement (N/A Grayson).

Equipment

Section 3. Vibratory compactors used for compacting subgrade and paving shall weigh not less than ten (10) tons.

Excavations and Subgrade Preparations

Section 4. Excavations for the paving shall be made to lines and grades required to accommodate the specified paving after which the areas shall be compacted to a firm foundation with a compactor. The subgrade may be brought up to final elevation by the use of suitable excavated materials; however, should soft spots develop in the compacting operations, the soft materials shall be removed and backfilled with the material specified for use as sub- base. Compaction operations shall be continued until the fill is compacted to not less than 95% of the maximum density as determined in accordance with ASTM-D1557-70 (Modified).

The subgrade preparation shall be limited to the May through October construction season.

Base Course

Section 5. All areas to be paved shall have a minimum of six (6) inches of No. 57 aggregate All compacting operations shall include berms to a minimum width of two (2) feet on each side of the paved area. The base materials shall be evenly spread on the subgrade and shall be thoroughly compacted with equipment the compacted thickness specified.

Asphalt Concrete Pavement

Section 6. The asphalt concrete pavement shall consist of one (1) course of asphalt concrete, 2 inches thick, conforming to materials and construction methods of Item 402 of the "Standard Specifications for Road and Bridge Construction" of the State of Kentucky, Department of Highways. If required by the Project

Director Item 407, tack coat, shall be applied at 0.10 gallons per square yard over either the base course, or over the first lift of asphalt concrete, or both. Tack coat materials and construction methods shall conform to Item 407 of the "Standard Specifications for Road and Bridge Construction" of the State of Kentucky, Department of Highways.

Variation to the surface tolerances shall be corrected in a manner satisfactory to the Project Manager.

All old to new asphalt concrete joints shall be sealed with a joint sealer conforming to Item 807.02.

Concrete Pavement (N/A Grayson)

Section 7. The concrete pavement shall consist of a single course of concrete to the depth required to match existing pavement and shall have a minimum twenty-eight (28) day compressive strength of 3500 psi. Forms shall be used on open sides so that the completed pavement has its original shape.

Concrete Curbs (N/A Grayson)

Section 8. Concrete curbs shall be constructed of Class "A" concrete in accordance with Section 601 of the KDOH specifications. Curb cross section shall match that of existing curb.

One-half inch KDOH 807.03 preformed joint filler shall be placed at all curb returns, to either side of inlets and catch basins, where new curb abuts existing concrete and at such other locations as directed by the Project Manager.

Measurement & Payment

Section 9. All costs for restoration of asphalt or concrete pavement, or concrete/asphalt curbs disturbed as part of new construction shall be included with the appropriate unit price bid.

END OF SECTION

SITEWORK

Section 02701

Polyvinyl Chloride Pipe

General

Section 1. Polyvinyl chloride (PVC) pressure pipe two inches through twelve inch shall conform to the American Society for Testing and Materials (ASTM) Standard ASTM D-2241.

Note: The Engineer retains the sole authority to approve or disapprove of PVC pressure pipe based the manufacturer's prior performance history and project references. If requested by the Engineer, the pipe manufacturer shall submit a reference listing of similar projects completed within the last 5 years in Kentucky, Ohio, or West Virginia complete with Owners Name, Address, Phone Number, and Contact Person.

Pressure class shall be 200 psi with a standard dimension ration (SDR) of 21 or 250 psi with a SDR of 17, as noted on the Plans.

Joints

Section 2. All joints on polyvinyl chloride (PVC) pressure pipe shall be made of elastomeric-gaskets. Provisions must be made for expansion and contraction at each joint with an elastomeric ring. The bell shall consist of an integral wall section with an elastomeric ring which meets the requirements of ASTM F-477 standard specifications for elastomeric seal for jointing plastic pipe. The wall thickness in the bell section shall conform to the requirements of ASTM D-3139.

All PVC Pressure Pipe shall be with twenty (20) foot laying lengths. As noted above, pipe shall be supplied with integral bells, coupling pipe is not permitted.

Anchoring Assemblies

Section 3. Anchoring assemblies will be required for all fire hydrants and hydrant valves. Anchoring assemblies will be required for setting other valves and bends, as shown on the construction drawings.

Special anchoring will be required at other places along the pipelines. Where the construction drawings call for special anchoring, it shall include ductile iron pipe with mechanical joint anchoring fittings, locked mechanical joints, pipe or positively restrained push-on joint type ductile iron pipe and fittings which allow for the deflection at the joint after assembly the equal of "Super-Lock" manufactured by the Clow Corporation.

Installation

Section 4. The installation of PVC pipelines are intended to conform with AWWA Specifications C900-75 and Appendix A as if they were totally incorporated herein, except where these specifications direct otherwise.

Fittings

Section 5. All fittings for PVC pipe shall be cast iron mechanical joints Class 250 tar coated outside, cement lined inside in accordance with ANSI/AWWA Specifications C110/A21.10, C111/A21.11.

END OF SECTION

SECTION 02733 – PVC PIPE GRAVITY SEWERS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work covered by this Section consists of furnishing all labor, equipment and material required to install PVC pipe in accordance with lines, elevations, cross-sections, and related work as described herein and/or shown on the Drawings.

B. The General Conditions, Supplementary Conditions, and all other herein bound and accompanying documents are part of this Section and of the Agreement. Submission of proposal implies that the bidder is fully conversant with requirements of the above-mentioned documents.

1.02 SUBMITTALS

A. Shop Drawings submittals shall be made in accordance with the provisions of Division 1. Obtain the Engineer's review of this submittal prior to fabrication.

1.03 QUALITY ASSURANCE

A. DEFLECTION TESTING

1. In addition to the leakage testing required in Section 01666, all sewers constructed under this Section shall be required to pass a deflection test. Deflection testing should be unnecessary when using proper construction practices during pipe installation and when using embedment material which has been properly selected, placed, and compacted. However, the Engineer reserves the right to require the Contractor to perform random deflection tests of pipe prior to final acceptance. Should three successive test locations be unsatisfactory, then the Contractor shall test the entire sewer system. Deflection tests shall be conducted after the sewer has been in the ground, completely backfilled, for 60 days. Tests shall be conducted using a nine-leg go –no-go gauge approved by the Engineer. All locations which have deflected more than 7 ½ % shall be replaced by the Contractor. Pipe shall then be retested, 60 days later. All costs of testing and correction shall be included in the bid price of the pipe. The 7 ½% deflection shall be defined as 7 ½% of the stated nominal diameter of the pipe and shall not consider manufacturing tolerances or out-of-round tolerances. To ensure accurate testing, the sewer pipe must be thoroughly cleaned.

PART 2 - PRODUCTS

2.01 MATERIALS

A. GRAVITY SEWERS

1. Polyvinyl Chloride (PVC) Pipe and Fittings – SDR 35, ASTM D3034 and ASTM D1784 with minimum wall stiffness of 46 psi at 5% deflection when tested in accordance with ASTM F2412.

   a. Pipe Joints – ASTM D3212
   b. Rubber Gaskets – ASTM F477

2.02 MANUFACTURE

A. PIPE

1. Pipe shall be manufactured from polyvinyl chloride resins and compounds in compliance with the above ASTM specifications.

2. Pipe shipped to the project shall be plainly marked as to type and origin of manufacture.

3. Nominal laying lengths of 12.5' and 20' shall be used.

PART 3 - EXECUTION

3.01 INSTALLATION

A. GRAVITY SEWERS

1. Special Note: The slope of gravity sewer lines must be maintained. The Contractor, upon completion of pipe line lying from manhole to manhole, shall check the grade of pipe for proper slope before proceeding to next manhole. Failure of the Contractor to verify and correct deviations from established grade, may require removal and replacement of several joints of pipe to correct less than minimum grade conditions detected at time of final inspection.

2. Preparation of Trench and Bedding shall be as specified in Section 02221 for flexible pipe materials.

3. All sewer lines shall be laid true to line and grade with a laser beam, with bells upgrade. The sections of pipe shall be fitted and matched so that when laid in the work they will form a sewer with a smooth and uniform invert from manhole to manhole.

4. Each section of pipe shall be inspected for defects before lowering in the trench. The mating surfaces shall be completely cleaned.

5. Immediately prior to joining, the mating surfaces shall be brush coated using the special lubricant supplied by the manufacturer.

6. A lever bar may be required to shove the spigot end "home" in the bell, and if so, a board shall be used to protect the pipe.

7. The interior of the pipe shall be thoroughly cleaned of all dirt, stones, sticks, and other materials as the work progresses and the exposed ends of all pipe and fittings shall be fully protected to prevent any material from entering the pipe. All wyes which are installed but not immediately connected shall be plugged with a standard PVC pipe stopper.

8. Where the ends of the pipe project through a manhole or other structure, they shall be neatly cut to fit the inner face of the structure.

9. Wyes or tees, 4" or 6" service laterals shall be installed at the locations designated by the Engineer. The locations of customer sewer laterals, when shown on the Drawings, are approximate. The Contractor shall make a reasonable effort to ask each property owner where he desires his sewer lateral to be located and locate the sewer lateral as close as practical to this location, subject to approve by the Construction Representative. Service laterals shall be installed to the property line, unless otherwise indicated on the Drawings. Contractor shall be responsible for installation of the lateral at a depth which is sufficient to serve the building on the property assuming that the sewer is laid from the building to the property line at a 1% grade. Depth of existing plumbing shall be considered in determining the required lateral elevation. Contractor shall re-lay any lateral at his expense which does not serve its intended purpose.

10. Any laterals not immediately connected shall be marked at the end of the lateral with a 2" x 2" x 4' wood stake driven flush to the normal ground level and painted with fluorescent paint. A record of the location of these unconnected laterals shall be maintained by the Contractor.

11. If any section of pipe is out of alignment through improper laying or subsequent movement caused by the backfill operation, the Contractor, at his own expense, shall remove the section or sections and place them in true alignment.

END OF SECTION

SITE WORK

Section 02704

Stream Crossing Pipe

General

Section 1. The Contractor shall furnish all labor, materials and equipment required to install a Stream Crossing or Crossings as shown on the plans and as specified herein.

The Stream Crossing pipe may either be polyethylene or ductile iron, all as specified hereinafter. It is the intent of these specifications that both types of pipe shall be considered equals and the Contractor is advised to bid that type of pipe that would result in the lowest total bid.

The selection of the procedure used to install the lines shall be left to the discretion of the Contractor, as long as the final construction results in satisfactory installation conforming to the specifications and the drawings.

Ductile Iron Pipe & Fittings

Section 2. Ductile Iron Pipe - Ductile iron pipe for Stream Crossings shall be Class 51, tar-coated outside and cement-lined inside in accordance with AWWA Specifications. The joints for the Stream Crossing pipe shall be "American" Flex-Lok joint, "American" Molox ball joint, or equal as approved by the Engineer. All bolts used in making up joints shall be stainless steel. Ductile iron pipe shall be suitable for a minimum working pressure of 350 psi.

Fittings will not be allowed in the Stream Crossing. Where steep bends are required, the Contractor shall use short lengths of pipe, and the deflection in the joints shall be utilized to make the curvature of the bend.

Polyethylene Pipe & Fittings

Section 3. Polyethylene Pipe - Polyethylene pipe for the Stream Crossing shall utilize thermal butt-fusion for jointing length, all suitable for a 250 psi working water pressure, with an DR of 7.3. Pipe shall be N.S.F. approved, and manufactured by Plexco by Chevron Chemical Co., or "Driscopipe" by Phillips Petroleum, or equal as approved by the Engineer. The pipe shall be furnished with the same nominal pipe size as the pipe to be connected to.

Appropriate restrained joint fittings shall be provided to connect the Stream Crossing pipe to the water main on either side of the stream. Fittings will not be allowed in the stream crossing proper. Excavation shall be so made that the pipe may be bent to the curvature of the Stream Crossing.

Note: Fittings or Couplings used to connect to HDPE on each side of the stream crossing shall include a "Uni-Flange", or equal Series 1300 grip type restrainer attached to the bolts of the coupling mechanical joint to hold the HDPE pipe in position in the coupling. The contractor shall submit shop drawings for this fitting/coupling upon submittal of the HDPE pipe for approval.

Pipe Laying

Section 4. Proper instruments, tools and facilities satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of the work. Before any length of pipe is placed in the trench, a careful inspection shall be made of the interior of the pipe to see that no foreign material is in the pipe.

If any defective pipe shall be discovered after the pipeline is laid, they shall be removed and replaced with a satisfactory pipe without additional charge to the Owner.

Jointing

Section 5. Joints of the pipe shall be made strictly in accordance with the manufacturer's recommendations. A copy of the manufacturer's recommendations shall be furnished to the Engineer prior to the beginning of the installation of the pipe.

Dredging & Backfilling

Section 6. The ditch for the pipe shall be dredged or excavated to provide a minimum of 30" cover below the stream bed. When the pipe has been properly placed, a minimum of six (6) inches of standard concrete encasement shall be placed around the pipe. Payment for concrete encasement will be made separately at the unit price bid for this item. The remainder of the trench shall be backfilled with trench excavated material, free from roots, wood, or other objectionable materials, and shall be approved by the Engineer. Where acceptable material from the excavation or dredging is insufficient to complete the backfill, the Contractor shall furnish additional acceptable material as required to complete the work. Such additional material shall be furnished and installed by the Contractor incidental to the various bid items and shall not be measured for separate payment.

Casing Pipe

Section 7. The waterline pipe for major stream crossings shall be encased in a larger sized PVC SDR 21 bell and spigot joint pipe. The cost for the PVC casing pipe shall be included in the unit price bid for stream crossings.

END OF SECTION

SITEWORK

Section 02720

Pressure Pipelines

Work Included

Section 1. The Contractor shall complete all excavations; shall protect all existing structures, utilities, and services; shall furnish all suitable tools and appliances for the safe and convenient handling of all materials to be used on the work; shall lay the pipelines, including valves, valve boxes, fire hydrants, and all other appurtenances thereto; shall install or replace any or all house service connections if specified; shall test the lines; shall disinfect water lines; shall replace all walks, driveways, grass plots, or paving; shall remove all surplus materials of every kind; and leave the entire site of the work in a presentable and satisfactory condition; all as specified herein under the various sections.

Handling and Storage of Materials

Section 2. Pressure main pipe, fittings, valves, hydrants, and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against pipe already on the ground.

Pipe shall be so handled that the coating and lining will not be damaged. If however, any part of the coating or lining is damaged the repair shall be made by the Contractor at his expense in a manner satisfactory to the Project Manager.

The Contractor shall be responsible for the safe storage of material furnished by or to him, and accepted by him, and intended for the work, until it has been incorporated in the completed project. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign matter at all times. Valves and hydrants shall be drained and stored in a manner that will protect them from damage by freezing.

Inspection and Responsibility for Material

Section 3. All pipeline materials shall be carefully inspected for cracks and other defects prior to installation. All material found during the progress of the work to have cracks, flaws, or other defects, shall be rejected by the Project Manager. All defective materials furnished by the Contractor shall be promptly removed by him from the site of the project.

The Contractor shall be responsible for all materials furnished by him and shall replace at his own expense all such material found defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all material and labor required for the replacement of installed material discovered defective prior to the final acceptance of the work.

Installation of Pressure Pipelines

Section 4. Pressure mains shall be laid and maintained to the required lines and grades with fittings, valves, and hydrants at the required locations; spigots centered in bells; and all valve and hydrant stems plumb.

Proper implements, tools, and facilities shall be provided and used by the Contractor for the safe and convenient performance of the work. All pipe, fittings, valves, and hydrants shall be carefully lowered into the trench piece by piece by means of a derrick, ropes, or other suitable tools or equipment in such a manner as to

prevent damage to pipe main materials and protective coatings and linings. Under no circumstances shall pipe main materials be dropped or dumped into the trench.

All pipe and fittings shall be carefully examined for cracks and other defects while suspended above the trench immediately before installation in final position. Spigot ends shall be examined with particular care. Defective pipe or fittings shall be laid aside as previously specified.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. If the pipe laying crew cannot put the pipe into the trench and in place without getting earth into it, the Project Manager may require that before lowering the pipe into the trench, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.

As each length of pipe is placed in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade. The pipe shall be secured in place with approved backfill material tamped under it except at the bells. Precautions shall be taken to prevent dirt from entering the joint space.

At times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the Project Manager. If water is in the trench, the seal shall remain in place until the trench is pumped completely dry.

The cutting of pipe for inserting valves, fittings, or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe or lining so as to leave a smooth end at right angles to the axis of the pipe.

Pipe shall be laid with bell ends facing in the direction of laying, unless directed otherwise by the Project Manager. Where pipe is laid on a grade of ten (10) percent of greater, the laying shall start at the bottom and shall proceed upward with the ball ends of the pipe upgrade.

Placing Pipeline Fittings

Section 5. Pipeline fittings, plugs and caps shall be furnished and installed of the type indicated and at the location shown on the construction drawings or as directed by the Project Manager. It will be the responsibility of the Contractor to furnish and install all proper size pipe bends for both horizontal and vertical deflections that are required to construct the pressure main to the line and grade as shown on the construction drawings or as set by the Project Manager. The fittings, plugs, and caps shall be set and joined to the pipe in the manner heretofore specified for installation.

Anchorage

Section 6. The Contractor shall provide pipeline restraint at all locations shown on the construction drawings. Anchorage shall be in the form of harnessed or restrained joints for the lengths of pipe and fittings shown.

Testing Pressure Mains

Section 7. The Contractor shall subject the completed pressure pipelines to a leakage test. The test

shall be performed on all newly laid pipe in lengths not to exceed 2,000 feet or any valved section thereof. The length of the test section shall exceed the specified maximum limit only with the explicit approval of the Project Manager. The test may be conducted after the trench has been backfilled but must be completed before replacement of pavements and final restoration. All testing shall be done in the presence of the Project Manager.

The Contractor shall furnish the pump, pipe connection, temporary testing plugs and caps, if required, all necessary apparatus including the pressure gauges and meters and a supply of approved water. The Contractor shall make all necessary taps into the lines. The Contractor shall be responsible for all labor and equipment necessary to conduct the tests, including excavating and backfilling the test pit at the locations selected by the Project Manager.

The pipe shall first be completely flushed out. Then each valved section shall be slowly filled with water. All air shall be expelled from the pipe at high points by means of test plugs in valve bonnets, fire hydrants or through corporation stops installed by the Contractor for this purpose. After all the air has been expelled, the openings shall be closed and the test pressure applied by means of the test pump connected to the pipe in a manner satisfactory to the Project Manager.

The test pressure for the leakage test shall be fifty (50) percent above the normal operating pressure of the lowest point in the section of line under the test and corrected to the elevation of the test gauge. The duration of each leakage test shall be two (2) hours.

The exposed piping and/or the top of the trench shall be carefully inspected during the leakage test for any signs of leakage. Any cracked or defective pipe, fittings, valves or hydrants discovered in consequence of the leakage test shall be removed and replaced by the Contractor with sound material and the test shall be replaced until satisfactory results are obtained. The Contractor is responsible for locating, excavating and backfilling the pressure pipeline trench at
no cost to the Owner, in addition to replacing the defective material if the leakage test is conducted on a backfilled pressure pipeline. The Contractor shall maintain the hydrostatic pressure at all times during the leakage test through his test pump.

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain the specified leakage test pressure after the air has been expelled, the pipe has been filled with water, and the pressure initially applied.

No pipe installation will be accepted if the amount of leakage is greater than specified by the following equation:

$$L = \frac{ND\sqrt{P}}{7400}$$

Where

L = allowable leakage, gallons per hour.
N = Number of pipe joints being tested.
D = Nominal diameter of pipe, in.
P = Average test pressure, psig.

Disinfection of Water Mains

If liquid chlorine is used, a chlorine gas-water mixture shall be applied by means of a solutionfeed chlorinating device; or, if approved by the Project Manager, the dry gas may be fed directly through proper devices for regulating the rate of flow and providing effective diffusion of the gas into the water within the pipe being treated. Chlorinating devices for feeding solutions of the chlorine gas or the gas itself must provide means for preventing the backflow of water into the chlorine cylinder.

A mixture of water and a chlorine-bearing compound of known chlorine content may be substituted for liquid chlorine. Approved types are calcium hypochlorite or sodium hypochlorite. Commercial types of calcium hypochlorite are known as HTH, Perchloron and Pittchlor. Sodium hypochlorite is known commercially as liquid laundry bleach.

High-test calcium hypochlorite or bleaching powder must be prepared as a water mixture for introduction into the water mains. The powder should first be made into a paste and then tinned to approximately a one (1) percent chlorine solution (10,000 ppm). The preparation of a one (1) percent chlorine solution requires the following proportions of powder to water:

Product	Amount of ompound	Quantity of Water Gallon
High-test calcium hypochlorite (65-70% Cl)	lb.	7.50
Liquid laundry bleach (5.25%)	1 gal.	4.25

The chlorinating agent shall be injected into the beginning of the new pipeline extension or any valved section of it through a corporation stop inserted by the Contractor. The Contractor shall supply the proper type chemical pump, piping and make up water to inject the solution into the main. The application shall be the amount necessary to apply 25 ppm of chlorine to the test section. The amount of one (1) percent chlorine water solution required to give 25 ppm chlorine in 1,000 feet of various size water mains is as follows:

6" Diameter	4 Gallons
8"	8
10"	10
12"	15
16"	26
20"	40
24"	60
30"	90

Water from the existing distribution system shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall produce at least ten (10) ppm, after twenty-four (24) hours standing. This may be expected with an application of twenty-five (25) ppm, although some conditions may require that more valves be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water throughout its length shall, upon test, be proved comparable in quality

process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water throughout its length shall, upon test, be proved comparable in quality to the water serving the public from the existing water supply system and approved by the public health authority having jurisdiction. This satisfactory quality of water delivered by the new main should continue for a period of at least two (2) full days as demonstrated by laboratory examination of samples taken from a tap located installed in such a way as to prevent outside contamination. Samples shall not be taken from an unsterilized hose or from a fire hydrant, because such samples will seldom meet bacteriological standards.

Should the initial treatment fail to result in the conditions specified, the original chlorination procedure shall be repeated until satisfactory results are obtained.

Pressure Pipelines Not Installed in Trench

Section 9. All applicable provisions of this item of work shall apply to the furnishing of materials and installation procedures for constructing pressure pipelines not installed in a trench condition.

END OF SECTION

SECTION 02731-MANHOLES

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work covered by this Section consists of furnishing all labor, equipment and material required to construct manholes in accordance with lines, elevations, cross-sections, and related work as described herein and/or shown on the Drawings.

B. The General Conditions, Supplementary Conditions, and all other herein bound and accompanying documents are part of this Section and of the Agreement. Submission of proposal implies that the bidder is fully conversant with requirements of the above-mentioned documents.

1.02 SUBMITTALS

A. Shop Drawings submittals shall be made in accordance with the provisions of Division 1. Obtain the Engineer's review of this submittal prior to fabrication.

1.03 QUALITY ASSURANCE

A. MANHOLES

1. Manholes shall be constructed to allow not more than 50 gallons/day of infiltration.

2. Refer to Part 3 of this section for testing sewer system.

PART 2 - PRODUCTS

2.01 MATERIALS

A. MANHOLES

1. Manhole Base: Reinforced precast concrete riser pipe with integral precast base and invert to form watertight unit, as detailed on the Drawings.

2. Cast-in-place Manhole Base: Cast-in-place reinforced concrete in accordance with Section 03300.

3. Manhole Riser Pipe: Reinforced precast concrete, 48 inch diameter with eccentric cone top having 24 inch diameter opening, in accordance with ASTM C478.

4. Manhole Joints: Joints shall be O-ring type conforming to ASTM Specification C 443.

5. Manhole Steps: 12 inch fiberglass reinforced plastic, in all manholes, 12" center to center, in compliance with OSHA requirements, and in accordance with ASTM C478.

6. Grade Rings: Precast reinforced concrete donuts with inside opening of 24 inches, in accordance with ASTM C478.

7. Manhole Sleeves: Flexible synthetic rubber boot type, clamped to pipe by stainless steel strap and draw bolt. Comparable systems are subject to prior approval of Engineer.

8. Manhole Frames and Covers: ASTM A48-83 Class 35B Gray Iron, non-rocking bearing surfaces, concealed type pickholes, the word "SANITARY" cast in 2 inch letters in center of cover, and a 26 inch diameter solid lid. Frames and covers shall be Neenah R-1642-A or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Manholes shall be placed at locations and grades indicated on the Drawings. Install manhole so that all joints, pipe inlets, and outlets, joints between frame and manhole section, or any other joint, crack, or portal wall shall be watertight.

B. Stub pipes shall be installed where indicated on the Drawings. All stub pipes for future connections shall be tightly capped to prevent leakage.

C. Manhole frames shall be set in a full bed of grout or mortar. Grout or mortar shall also completely cover and enclose the frame flange.

D. All manholes must meet infiltration requirements as specified.

E. The tops of manholes located in streets, roads, alleys, driveways, sidewalks, or other traveled ways shall be set flush with existing surrounding grade. The tops of new manholes in other areas, not traveled ways, shall be set approximately 3 inches higher than existing surrounding grade, unless directed otherwise by Engineer. Contractor shall mound dirt around the raised manhole top to blend with existing surrounding grade.

F. Drop connections shall be installed and constructed in accordance with details shown on the Drawings.

3.02 TESTING MANHOLES:

A. General

1. The Engineer shall require testing of all manholes as described in Section 3.02 Part B of these specifications. The Contractor shall perform and bear all costs of the testing.

2. Manhole watertightness: All joints, inlets and outlets, joints between frame and manhole section, or any other crack or portal shall be watertight.

3. If, when tested, a manhole fails, the Contractor shall repair, reconstruct or otherwise make satisfactory the manhole, and repeat the tests until that manhole passes.

B. Test Procedure:

1. New manholes will be tested for water tightness by application of exfiltration test. This test shall consist of completely sealing all pipe openings into the manhole and filling manhole with water to the top of the casting frame. After the test period, exfiltration is defined as the amount of water required to refill the manhole. Exfiltration shall not exceed 50 gallons per manhole during 24 hour testing period.

2. A vacuum test may also be used to test manholes or wetwells, as follows:

   a. Plug the manhole.
   b. Place a vacuum of 10" Hg on the manhole.
   c. Measure the time for the vacuum to drop to 9" Hg.
   d. For a 48" I.D. manhole, if the vacuum has not dropped to 9" Hg within 60 seconds, the manhole will have passed the vacuum test. If the vacuum drops below 9" Hg in 60 seconds or less, the manhole will have failed the vacuum test.
   e. For a 60" I.D. manhole the test time is 75 seconds.
   f. For a 72" I.D. manhole the test time is 90 seconds.

3. Any infiltration discovered by physical inspection in any manhole during the one year warranty period shall be repaired by the Contractor at no additional cost to Owner.

END OF SECTION 02731

SECTION 11315 - SUBMERSIBLE PUMP STATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. The Contractor shall provide all labor, materials, tools and equipment required to furnish and install the pump station complete as shown on the Contract Drawings and as specified herein.

B. The pump station shall include all drives, drive shafts, pump bases, pumps, wet well, valve pit, valves, piping, anchor bolts, site work and power supply, and other appurtenances as specified or required for a complete installation.

C. All work performed under this section shall be in accordance with all approved trade practices and manufacturer's recommendations.

1.3 QUALITY ASSURANCE

A. In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for work.

1.4 SUBMITTALS

A. Submittals shall be in accordance with the General Requirements.

PART 2 - PRODUCTS

2.1 SUBMERSIBLE PUMPS

A. Submersible, electrically operated pumps shall be in accordance with the requirements described in the following paragraphs and in the Equipment Schedule. In addition, they will be capable of continuous pumping while being partially submerged.

B. Both pumps for this application shall be produced by the same manufacturer.

C. Each pump shall be shop tested for capacity, head, speed, power and efficiency in accordance with Standards of the Hydraulic Institute. Six (6) certified copies of each test curve shall be furnished to the Engineer for approval. The pumps shall not leave the manufacturer's plant until receipt of the Engineer's approval.

D. The pumps shall be automatically and firmly connected to the discharge connection, guided by no less than two guide bars extending from the top of the station to the discharge connection. There shall be no need for personnel to enter the wet-well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal to metal watertight contact. Sealing of the discharge interface with a diaphragm, O-ring or profile gasket will not be acceptable. The pumping units shall come complete with sliding brackets, motors, guide bars, stainless steel pull chain, aluminum access doors, power cables and all other necessary appurtenances.

E. Motors

1. Each pump motor shall be supplied with sufficient power cable to extend from the motor in operating position to the panel installed on the top slab of wet well.

2. The motor shall be in conformance with the latest recommendations of IEEE and NEMA, including noise requirements.]

2.9 ELECTRICAL CONTROLS

1. The contractor shall furnish and install a pump control system designed to operate sewage pumps in a sewage lift station as described herein. The utility power supply at the pump station shall be 230volts, 3 phase, 3 wire.

The control system shall be designed to operate two pumps based on wet well level monitored by float type level sensors. Four normally open float level sensors shall be required for automatic operation of the duplex pump station. The control panel shall be designed for the float level sensors to operate on 24 VAC to provide the following functions; stop pumps, start lead pump, start lag pump, and high-level alarm. The panel shall require electromechanical and solid state components for interface with wet well level sensor to meet control requirements.

2. Electrical equipment, materials and workmanship shall comply with all applicable codes, safety and fire law regulations at the location of the work and shall conform to applicable codes and standards of the organizations listed below.

   A. Institute of Electrical and Electronic Engineers. (IEEE)

   B. National Electric Code. (NEC)

   C. National Electrical Manufacturers Association (NEMA)

   D. American National Standards Institute. (ANSI)

   E. Underwriters Laboratories. (UL-508 or 913 for intrinsically safe)

2.10 ENCLOSURE

1. The described equipment shall be housed in a single NEMA 4X 304SS enclosure

2. Enclosure shall be pad-lockable. The enclosure shall also include 12" high ,304SS, floor stand . Enclosure sizing shall be the responsibility of the system panel manufacturer.

3. The hinged inner door shall be provided fabricated from, 5052-H32.080 marine alloy aluminum. The hinged inner door shall contain cut outs for all circuit breaker toggles. Control switches and indicators shall be labeled and mounted to the hinged inner door to keep operators from entering the live electrical compartment. A warning sign stating "DANGER -- Disconnect all sources of power before opening door" shall be installed on the inner door. It shall be completely removable for ease of service and shall be held closed by at least (2) hand operated 1/4 turn fasteners.

4. The following items shall be mounted on the inner door:

   A. High level light

B. Low level light

C. Pump run light

D. Hand-Off-Automatic rocker/toggle switch to select the operating mode for each pump.

5. The control system enclosure shall include a removable back-panel. The back-panel shall be fabricated from painted steel.

6. Components shall be fastened to the back-panel using stainless steel pinhead machine screws. All devices shall be clearly labeled in accordance with the schematic ladder diagram.

7. Control circuit wiring inside the panel shall be (16) gauge minimum, type MTW or THW, rated for 300 volts. All power wiring shall be rated for 600 volts. Conductors shall be color coded in the same colors throughout the entire panel.

8. All conduit entries shall be sealed to prevent moisture and gas vapors from entering the control system enclosure.

2.11 FLOAT CONTROL CIRCUITRY

1. The Relay control circuit shall provide for the automatic and manual control and alternation of the pumps to maintain a pump down condition of the wet-well. The 120 Volt control system shall sense the wet-well level through remote level sensing float switches. Floats shall be mounted in the wet-well in a manner that precludes anything from obstructing the full travel of the float, including but not limited to the other floats. Four float switches shall include both pumps off level, lead pump on level, lag pump on level and high level alarm level to control the pumps operation and provide alarms. Terminal blocks shall be provided for each separate float switch connection and other remote devices.

2. The control panel shall be supplied with a low level cut out circuit to protect the pumps from running should a low wet well level condition exist.

3. The control panel shal include a properly sized main circuit braker. The breaker shall be operated by a through the door operator.

4. Relays shall be of the square base plug in type with integral LED indicator lights. All relays shall have a transparent polycarbonate dust cover to protect the contact surfaces from airborne dust and other contaminants. All relays shall have DPDT or 4PDT contacts, as required. Relays shall be rated for continuous duty operation.

5. Relay contacts shall be rated for 10 amps at 300VAC. Relay sockets shall have screw terminals with self-lifting clamps and terminal identification numbers located at each connection on the relay socket.

6. Dry contacts shall be supplied to allow for the future communicating of the following alarm conditions

   A. High level alarm

   B. Low level alarm

   C. Overtemp alarm

   D. Seal leak alarm

7. Each pump motor circuit shall be protected by a properly sized E frame molded case circuit breaker. Each pole of these breakers shall provide inverse time delay overload protection and instantaneous short circuit protection by means of a thermal magnetic element. The breaker shall be operated by a toggle type handle and shall have a Quick-make, Quick-break over center switching mechanism that is mechanically trip free from the handle so that the contacts cannot be held closed against short circuits and abnormal currents. Tripping due to overload or short circuit shall be clearly indicated by the handle automatically assuming a position midway between the manual "ON" and "OFF" position. The minimum interrupting rating of the breaker shall be 35,000 amps at 240 VAC. Pump motor circuit breaker toggle shall be operable through a cutout in the inner door.

8. Seals Failure relays providing adjustable resistance sensing circuitry from 0 to 250,000 ohms for each pump shall be supplied. Upon activation, the seal failure relay shall not shut down the pump but shall illuminate a red pilot light located on the inner door that shall correspond to the appropriate pump. The moisture sensing probes shall be supplied and installed in the pumps by the pump manufacturer.

9. Pump over temperature sensors located in the pump motor shall be supplied for each pump. A red pilot light and reset push button for each pump motor shall be supplied and located on the inner door. When activated, the appropriate pilot light shall illuminate and the associated pump shall not be allowed to run.

10. An Anti-condensation heater shall be provided to maintain the internal temperature 2 - 3 degrees F above ambient temperature to prevent condensation inside the duplex control panel. A thermostat shall not be required.

11. The panel shall have a Hand-Off-Automatic rocker/toggle switch mounted on the inner door to select the operating mode for each pump.

12. A non-re-settable elapse time meter shall be mounted on the inner/outer door to record the accumulated running time for each pump. The elapse time meter shall be rated 24 VAC.

13. The panel shall have a red/amber alarm beacon and audible horn. The beacon shall be mounted on top of the panel. The alarm beacon shall be rated 120 VAC, 25W, and shall illuminate/flash and the audible alarm shall sound to indicate an alarm condition exists.

14. The panel shall be supplied with a alarm silence pusbutton located on the exterior of the enclosure. The alarm silence pushbutton shall manually silence the alarm horn.

15. The terminal strip shall be mounted on a 45° angle using rail offset brackets to angle up bottom side of terminals from back panel to ease field wiring connections. Rail offset brackets shall be zinc bichromate plated steel. All wiring within the control system enclosure should be installed in wiring duct and terminated at the terminal block

16. All electrical equipment shall be identified in accordance with these specifications. All identification labels, both within the enclosure and external, shall be engraved nameplates attached with stainless steel machine screws, photo etched, silk screened, or laser-screened laminated mylar. All control wiring shall be numbered on each termination.

17. Engraved nameplates attached with stainless steel machine screws, photo etching, silk screened, or laser-screened laminated mylar shall be provided to identify all individually mounted push-buttons, rocker switches, lights, meters, circuit breakers, motor starters, transformers, relays, fuses, phase monitors, surge arrester and any other equipment for which identification is required for eventual service or replacement. This includes the appropriate equipment within the cabinet. Embossed tape is not acceptable.

18. Field installed interior wiring shall be neatly grouped by circuit and bound by plastic tie wraps. Circuit groups shall be supported such that circuit termination points are not stressed.

19. The pump control panel shall be maintained in an upright position at all times. Lifting shall be only at the floor sills or the top mounting lifting angles.

20. The pump control panel shall be protected at all times. Any damage to the paint shall be carefully repaired using touch up paint that can be identified by the pump control manufacturer.

21. The wet well level control system shall consist of liquid level sensors directly connected to the pump control panel.

22. Float switches shall also installed to control the wet well level. Unless otherwise called for the following number of floats shall be provided: one for pump turn-off, one for lead pump turn-on, and one for lag pump turn-on. A fourth switch shall be provided for alarm control. Each sensor shall be suspended on its own electric cable,

each of which shall be of the length designated, and suspended and supported as shown on the drawings.

23. Float switches shall be hermetically sealed mercury switches encased in polypropylene floats. These floats shall displacement-type sensors. The support wire shall be three conductor 19 SWG oval cable, heavily sheathed in PVC. The cable will be attached to the Level Sensor by means of a locked compression cable entry protected by a flexible protective boot, or equal system. The liquid level sensors shall contain an eccentric lead weight to facilitate operation of the system.

24. Provide receptacle, wiring and necessary switchgear to permit complete operation of the pump station by a portable generator. Portable generator is not part of this contract.

25. Provide an interposing relay which upon alarm conditions closes a set of normally open dry contacts for use with radio communications system or telemetry device.

26. In addition to the level controls, the float system shall include a one-inch (1") stainless steel supporting pipe with wall support brackets and connecting cables with stainless steel hose clamps. Excess cable shall be provided with the level transmitter to facilitate adjustment of the floats and removal of the one-inch support pipe.

27. The float system and support pipe shall be installed in the wet well of each pump station, as shown on the drawings.

2.12 SHOP PAINTING

F. All surface shall be thoroughly cleaned of dirt, grease, oil, rust, scale, or other injurious substances. All metal surfaces shall be sandblasted in accordance with SSPC-SP10, Near-White Blast Cleaning.

G. All metal surfaces which shall be partially or wholly submerged shall receive a shop coat of primer. All non-galvanized metal surfaces which will be above water surfaces shall receive a shop coat of a universally compatible primer.

H. PRIMER AND FINISH PAINT

Shop apply primer and finish paint to all exterior ferrous surfaces of the pump, motor, and the exterior and interior surfaces of the elbow.

2.13 SPARE PARTS

I. Each pump shall be provided with one spare set of packings, valve seats, seals, and gaskets and any other necessary spare parts as recommended by the pump manufacturer. Any special tools required for maintenance shall be supplied with each pump.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The equipment shall be installed in accordance with the manufacturer's recommendations.

3.2 INITIAL LUBRICATION

A. Initial lubrication required for start-up and field test operation shall be furnished and applied in accordance with the manufacturer's recommendations.

3.3 INSPECTION, START-UP, AND TESTING

A. The representative shall instruct the Owner's personnel in the operation and maintenance of the equipment.

B For smaller pumps with driven motors of less than 25 Hp, the manufacturer shall make final adjustments, provide initial start-up, and instruct the Owner's personnel in the operation and maintenance of the equipment.

3.4 PUMP TEST

A. Unless otherwise noted, certified performance data based upon tests of each actual pump proposed to be furnished shall be submitted to the Engineer for acceptance. Tests shall be performed in accordance with the Test Code of the Hydraulic Institute Standards and shall demonstrate compliance with the operating conditions specified.

3.5 MOTOR TEST

A. Tests shall be performed in accordance with the American Standard Test Code.

B. Short commercial test: For motors of less than 25 Hp, a certified report of the short commercial test of each actual motor proposed to be furnished shall be submitted to the Engineer for acceptance.

3.6 OPERATION AND MAINTENANCE MANUALS

A. Operation and maintenance (O & M) manuals shall be provided prior to or with the delivery of the equipment. The O & M manuals shall include instructions on storage, installation, start-up, and operation and maintenance, together with a complete parts list and a recommended spare parts list. The O & M manuals shall be in compliance with the General Requirements.

3.7 WARRANTY

The pump unit or any part thereof shall be warranted against defects in material or workmanship within five years from date of installation. The warranty shall be 100% coverage for the first year and 50% coverage for years 2 thru 5 and warranty items shall be replaced with a new or manufactured part, F.O.B. factory or authorized warranty service station. The warranty shall not assume responsibility for removal, reinstallation or freight, nor shall it assume responsibility of incidental damages resulting for removal, reinstallation or freight, nor shall it assume responsibility of incidental damages resulting from the failure of the pump to perform. The warranty shall not apply to damage resulting from accident, alteration, design, misuse or abuse.

END OF SECTION

SITEWORK

Section 02940

Temporary Silt and Erosion Control

Scope

Section 1. This work shall consist of furnishing all labor, material, and equipment, and incidentals for the construction of silt control structures to reduce the amount of sediment delivered to waterways. Silt control structures shall be constructed as required to control silt runoff into streams at the locations directed by the Engineer or his designated Representative.

During the life of the contract, the silt control structures shall be maintained by the Contractor, and silt accumulations which threaten to damage the structures, or preclude their effective operation as determined by the Engineer, shall be removed.

Straw or Hay Bale Silt Check

Section 2. This silt check shall be constructed with straw or hay bales, staked to remain in place, as shown on the Standard Details.

The location of straw or hay bale silt checks shall be as shown on the Plan drawings, or as directed by the Engineer at the time of construction. When the usefulness of the silt checks has ended, they shall be removed, and surplus materials be disposed of.

Measurement and Payment

Section 3. Payment for installation and maintenance of the temporary silt and erosion control structures shall be considered an incidental expense to the construction. All costs for same shall be included in the unit prices bid for the several other items included with the project.

END OF SECTION

SITEWORK

Section 02950

General Cleanup

General

Section 1. The Contractor shall be responsible for maintaining the site in a neat and safe manner during the period of construction. All trash and debris shall be removed or disposed.

Final Cleanup

Section 2. Upon completion of the construction, but prior to the final estimate, the Contractor shall check the entire site affected during construction and remove or dispose of all trash, debris, used building materials, etc. He shall also remove all construction equipment used for the project.

Finish Grading

Section 3. Upon removal of all debris and completion of rough grading operations all areas disturbed during construction shall be finish graded to provide for a smooth surface free of ruts, gullies or ponding areas. Large stones greater than 2 inches in size shall be removed from the site. The areas to be seeded shall then be fine raked to a smooth surface and the top 2-inches of soil loosened to form a seed bed.

Seeding

Section 4.Upon completion of finish grading operations the entire area shall be fertilized uniformly at a rate 20 pounds per 1,000 square feet with 12-12-12 composition fertilizer. The area shall then be seeded at a rate of 3 pounds per 1,000 square feet with a mix consisting of 40 percent Kentucky Bluegrass, 40 percent Creeping Red Fescue and 20 percent Annual Rye Grass, then lightly raked. Immediately after seeding the area shall be covered with straw evenly spread at a rate of 4 bales per 1,000 square feet. The seeded areas shall then be watered immediately and then watered on a daily basis until grass is established. Areas in which grass has not been established shall be re-fertilized, re-seeded and watered until grass has been established.

END OF SECTION

CONCRETE

Section 03419

Concrete Encasement and Concrete Cradle

Concrete Encasement

Section 1. Buried pipelines shall be encased in2,500psi concrete where shown on the construction drawings or to the extent and/or at other locations as determined by the Project Director.

Concrete encasement shall provide a minimum cover of six (6) inches beneath and above the pipe O.D. and shall extend laterally to the undisturbed wall of the pipeline trench. Additional thickness of concrete encasement, if required, shall be shown on the construction drawings. Each pour shall start and stop at a pipe joint.

Concrete Cradle

Section 2. Concrete cradle shall be 2,500 psi concrete where shown on the construction drawing or as directed by the Project Director.

Concrete cradle shall provide a minimum of six (6) inches beneath the pipe and extend to the spring line of the pipe unless otherwise shown on the construction drawings. Each pour shall start and stop at a pipe joint.

Measurement and Payment

Section 3. The payment for concrete encasement shall include furnishing and placing the concrete encasement. The Contractor shall be paid for the number of lineal feet of encasement constructed at the unit price quoted on the Proposal Sheets. (Unit Price Contracts Only.)

The payment for concrete cradle shall include furnishing and placing the concrete encasement. The Contractor shall be paid for the number of lineal feet of cradle at the unit price quoted on the Proposal Sheets. The concrete foundation under tee-based manholes is not considered cradle.

END OF SECTION

METALS

Section 05510

Cast Iron Work

Work Included

Section 1. The Contractor shall, under this Section, furnish all the materials for and shall properly install, at the locations shown on the drawing or as directed, all miscellaneous iron castings as specified or as shown, which are necessary for the proper completion of the work.

In general, this work shall include pipe sleeves, floor boxes, manhole steps, manhole rims and covers, adjustable valve boxes, sludge shoes, and such other miscellaneous cast iron work as is shown or required.

Quality

Section 2. All castings shall be true and fit properly together; must be smooth and free from blow holes and other defects; must conform to the dimensions given on the drawings; and to the "Standard Specifications for Gray Iron Castings" of the American Society for Testing Materials, Serial Designation A-48-36, and any subsequent amendments thereto, and to the proposed American Standard Specifications for Coal-Tar Dip Coating for Cast Iron Pipe and Fittings.

Erection

Section 3. All castings shall be set to the proper line and grade, and shall be carefully blocked and braced independently of the form and held in correct position until the concrete has been placed and has set.

Pipe Sleeves

Section 4. Pipe sleeves, of the dimensions shown on the drawings, shall be placed in the concrete masonry wherever indicated.

END OF SECTION

METALS

Section 05800

Cover Pipe

General

Section 1. The construction drawings show the details of the cover pipe material.

Steel Pipe

Section 2. Where designated on the construction drawings, the steel pipe shall be fusion welded steel pipe, Grade "B" with no coating. It shall conform to the requirements of ASTM 139. The wall thickness shall be Schedule 40 for pipe up to 4-inches in diameter and 0.250 inch wall thickness for larger sizes, unless railroad specification require a greater thickness.

Nestable Corrugated Metal Pipe

Section 3. Where corrugated metal pipe is designated in the construction drawings beneath a highway, it shall be nestable and conform to KDOT, Section 810. The gauge shall be as shown on the construction drawings.

Where corrugated metal pipe is designated in the construction drawings beneath the tracks of a railroad, it shall be AREA Specification 146; with bituminous coating, in accordance with AREA Specifications 1413. The gauge shall be as shown on the construction drawings.

Tunnel Liner Plates

Section 4. Tunnel liner plates where shown on the construction drawings shall be hotdripped galvanized steel of the thickness (gage) and section modulus shown on the construction drawings. The plates shall be formed from steel meeting the requirements of ASTM 139, Grade "B". Individual liner plates shall be made of one piece of metal, provided with flanges from both longitudinal and circumferential joints. The joints shall have sufficient bolt holes to fully develop the strength of the individual liner plate and so spaced in each liner plate that liner plates of curvature will be interchangeable and readily handled in the tunnel. Liner plates shall be of a design that when bolted together no opening shall exist large enough to permit inflow of granular material. Liner plates will be accurately curved to suit the tunnel cross section and when bolted together, the finished casing pipe shall be full round with the nominal diameter to the neutral axis as specified on the proposal sheets and/or construction drawings. Grouting plugs shall consist of a 2-inch standard half-pipe couplings welded or tapped into a hole in the liner plate and furnished with a cast iron plug for closure. They will be of the same material as the liner plate and furnished with a cast iron plug for closure. The spacing of the grouting plugs will be as specified on construction drawings. Bolts, heads, and nuts shall be square and of the same size.

Installing Cover Pipe

Section 5. Cover Pipe shall be installed by the boring method, the jacking method, by trenching or by tunneling as shown on the construction drawings. The Owner will obtain permits for any railroad, State or Federal Highway crossings. The Owner shall coordinate scheduling of construction of crossings with railroads and highway departments and shall pay any charges established therefore the work accomplished by these outside agencies. Special construction requirements defined by railroads or highway departments will be shown on the construction drawings and shall be adhered to by the Contractor. Installation of cover pipe shall not commence without the express permission of the Project Director.

Installation by Boring

Section 6. Steel pipe shall be installed by the boring method utilizing an auger type boring machine or a machine of such design meeting the individual requirements of the railroad, State or Federal Highway System being crossed. The Contractor shall provide an approach pit, completely sheeted and of sufficient size to operate the boring equipment. The operation of the boring equipment shall be subject to continuous checking by the Contractor to insure proper alignment of the cover pipe as installed.

Installation by Jacking

Section 7. The Contractor will provide an approach pit for the jacking operation, excavated so the jacking face is a minimum of three (3) feet above the pipe. This open face should be shored securely to prevent displacement of the embankment. The pit shall include a backstop of sufficient size to take the thrust of the jack. The guide rails that support the pipe as it enters the bore shall be accurately placed to line and grade. The entire approach pit shall be sheeted.

Hydraulic or mechanical jacks may be used in this operation. The number of jacks and the capacity of the jacks shall be adequate to complete the operation. A jacking head shall be used to transfer the pressure from the jack and the jacking frame to the pipe. If an auger is used, the pipe shall be jacked simultaneously with the augering. The construction work shall be checked by the Contractor at frequent intervals to insure proper line and grade of the installation.

Installation by Tunneling

Section 8. Care shall be exercised in trimming the surface of the excavated section to a true line and grade with the excavation conforming to the outside of the tunnel as nearly as possible. In the installation of tunnel or shaft liner plates, the amount of unsupported tunnel or shaft wall shall be at a minimum at all times. Excavation ahead of the liner plates will not be permitted. Liner plates shall be placed promptly as excavation permits. Upon completion of any ring of liner plates, bolts shall be retightened in the two (2) rings previously completed. The Project Director may direct that the top half of the tunnel excavation be supported by a cutting shield and excavation shall not advance ahead of such support.

The vertical face of the excavation shall be supported, as necessary, to prevent sloughing and at any interruption of the tunneling operation, the heading shall be completely bulkheaded.

Grouting shall follow the excavation and lining of the tunnel or shaft as required to fill all voids outside the tunnel liner plates. Grouting shall be performed prior to or upon completion of the installation of a maximum of four (4) rings, unless otherwise directed by the Project Director. Grouting shall start at the lowest hole in each grout panel and proceed upwards progressively and simultaneously, when possible, on both sides of the tunnel. The machine used for grouting shall be capable of forcing grout, under pressure, into all voids.

Measurement and Payment

Section 9. The payment for installation of cover pipe shall be made on the actual number of lineal feet of the various types and sizes of pipes installed. The unit price per foot for cover pipe shall include furnishing the material and installing the pipe by jacking, boring or tunneling, whichever is required, the construction of the approach pits with all necessary sheeting and all other incidentals required to complete the installation as shown on the construction drawings and herein specified. The cost for cover pipe shall include the installation of the carrier pipe inside cover pipe where noted in the bid proposal.

Incidental Boring

Section 10. Where called for on the plans, the Contractor shall bore and push water mains above 2-inch size under private asphalt and concrete driveways. Payment for this item shall be made at the unit prices bid for light duty asphalt and concrete surface replacement.

END OF SECTION

MECHANICAL

Section 15000

Valves and Gates

General

Section 1. Valves and gates of the sizes and types specified or shown on the construction drawings shall be provided for the proper completion of the work included under the project.

Operating nuts, handwheels, gaskets, bolts and nuts and all necessary appurtenances for a complete installation of the valves and gates shall be furnished with the valves.

All valves, not installed in the ground, shall be cleaned after installation and painted as specified under the Section 09900 - "Protective Coatings and Painting."

Complete details of all valves to be used on the project shall be submitted to the Consulting Engineer for review and contract compliance.

Type of Valve

Section 2. The construction drawings will state which type of valve is to be used.

Valve Boxes

Section 3. A valve box shall be provided for every operating nut of a buried valve with the operating mechanism fully protected with a cast iron grease case.

The valve box shall not transmit shock or stress to the valve. It shall be centered and plumb over the wrench nut of the valve. The box cover shall be flush with the finished pavement or at such other level as may be directed by the Project Manager.

The assembly shall consist of three (3) pieces and a cover. The valve box shall be screw type, cast iron with 5-1/4 inch shaft. A round base which will enclose the valve bonnet shall be furnished with six (6) inch and eight (8) inch valves. An oval base shall be supplied with valves larger than eight (8) inches.

The valve boxes for all buried valves shall be encased in concrete at least six (6) inches outside the diameter of the box at grade. The following information shall be carved into the concrete:

1. Type of service (water, sewage, etc.)
2. Number of turns to open the valve completely
3. The direction of opening the valve

A masonry valve pit shall be provided for every valve which has exposed gearing or operating mechanisms, if that type valve is specified. The details of such an enclosure is shown on the construction drawings.

Operating Nut Location

Section 4. All operating nuts for buried valves covered by valve boxes shall be located within eight (8) inches of the top of the box, and valve wrenches shall be four (4) feet long, sized for two (2) inch square nuts. Four (4) valve wrenches shall be furnished to the Owner by the Contractor.

Extension Stems

Section 5. Wherever extension stems are required for valve operation, the connection between the valve stem and extension stem shall be a pinned coupling to avoid possible disconnection.

Operating Nuts

Section 6. Valves for buried pipe lines shall be furnished with two (2) inch square wrench nuts. Nuts shall have a flanged base upon which shall be cast an arrow two (2) inches long showing the direction of opening, and the word, "OPEN" in one-half (1/2) inch or larger letters, shall be cast on the nut to indicate clearly the direction to turn the wrench when opening the valve.

Handwheels

Section 7. Handwheels may be specified for operating valves in exposed piping on the construction drawings. The handwheels shall have an arrow and the word "OPEN", cast thereon, to clearly indicate the direction the handwheel is to be turned to open the valve. The diameter of the handwheel shall conform to the following dimensions for the various size gate valves.

Size of Valve	Diameter of Handwheel
4"	10"
6"	12"
8"	14"
10" and 12"	18"
16" and 18"	22"
18" and 20"	24"
24" and 30"	30"

Direction of Opening

Section 8. All sewage valves shall open by turning the operator to the RIGHT (clockwise). All water valves shall open by turning the operator to the LEFT (counterclockwise), or as marked on the design plans.

Special Details

Section 9. The details of other valve requirements and valve appurtenances such as special ends and materials, position indicators, floor stands, cylinders, chain operators, and extension stems and guides are described on the construction drawings.

Chain Operators

Section 10. All valves six (6) feet or more above the floor surface shall be equipped with a stainless steel chain operator unless otherwise indicated on the construction drawings.

Valve Stem Packing

Section 11. All valve stem packing shall be die-cut to fit the valve. The material to be used shall be Chesterton Style 324 Super-Lon.

Start-Up Services

Section 12. All butterfly valves, control valves and plug valves, operators and appurtenances installed shall include a thorough two (2) day training program conducted by a factory service representative. This training shall include start-up, operation and maintenance of the valves prior to start-up of the plant.

END OF SECTION

MECHANICAL

Section 15020

Gate Valves

General

Section 1. Gate valves for buried pipelines shall be iron body, bronze mounted, resilient wedge gate valves with non-rising stems having either parallel or inclined seats in accordance with AWWA C509, "Resilient Wedge Gate Valves".

Mechanical joint bell ends will be used in buried pipelines of mechanical joint and rubber seal type joint cast iron. Bell and flange ends will be used in exposed cast iron piping at the locations shown on the construction drawings.

Operating Nuts

Section 2. Gate valves for buried pipelines shall be furnished with two (2) inch square wrench nuts. Nuts shall have a flanged base upon which shall be cast an arrow two (2) inches long showing the direction of opening, and the word "OPEN" in one-half (1/2) inch or larger letters, shall be cast on the nut to indicate clearly the direction to turn the wrench when opening the valve.

Handwheels

Section 3. Handwheels may be specified for operating valves in exposed piping on the construction drawings. The handwheels shall have an arrow and the word "OPEN", cast thereon, to clearly indicate the direction the handwheel is to be turned to open the valve. The diameter of the handwheel shall conform to the following dimensions for the various size gate valves.

Size of Valve	Dia. of Handwheel
4"	10"
6"	12"
8"	14"
10" and 12"	18"
16" and 18"	22"
24" and 30"	30"

Horizontal Mounting

Section 4. Gate valves in size sixteen (16) inches and larger may be installed in the horizontal position. Bronze tracks, rollers, and scrapers will be provided for valves to be installed in the horizontal position. Horizontal valves for pressure lines shall be furnished with beveled gear operators. The gear cases for buried service shall be totally enclosed, and the gear cases for exposed piping in a vault shall be of the extended type.

Bypass Valves

Section 5. Bypasses shall be furnished on valves when so specified on the proposal sheets or shown on the construction drawings. The bypass valve shall be furnished on the same type as the main line valve to which it is fitted. The size requirements of the bypass shall be as follows:

Valve Dia. - Inches	Bypass Dia. - Inches
16-20	3
24-30	4
26-42	6
48	8

Rising Stem Valves

Section 6. Outside screw and yoke rising stem valves shall conform to all of the requirements of AWWA C500 except for the rising stem mechanism. The OS and Y valves shall have a rugged cast iron yoke machined to provide accurate stem alignment. The OS and Y valves shall be furnished with handwheels. OS and Y valves shall only be installed where shown on the drawings.

Low and Medium Pressure valves

Section 7. Low pressure and medium pressure valves, if specified in the "Attention All Bidders" shall be the same design, workmanship, and materials as AWWA C500 valves except that they can be lighter in weight. Medium pressure and low pressure valves shall be tested for performance in operation, watertightness, and resistance to distortion under internal pressure in the manner described in AWWA C500, except that the minimum rated pressure and hydrostatic pressure shall be as follows:

Medium Pressure Valves

Valve Size	Rated Pressure (p.s.i.)	Hydrostatic Test Pressure (p.s.i.)
4 through 24	100	200
30 through 36	80	150
42 through 54	60	120

Low Pressure Valves

Valve Size	Rated Pressure (p.s.i.)	Hydrostatic Test Pressure (p.s.i.)
16 through 24	50	75
20 through 36	43	75
42 through 48	35	50

Underwriters Valves

Section 8. Gate valves for fire protection systems shall be manufactured in conformance to the requirements of the Underwriters Laboratories, Inc., and the Associated Factory Mutuals Laboratories. Gate valves which support an indicator post shall contain a flange of the indicator post base. Such valves are specified on the construction drawings and shall bear the inspection label of the Underwriters Laboratories, Inc.

Special Details

Section 9. The details of other valve requirements and valve appurtenances such as special ends and materials, position indicators, floor stands, cylinders, chain operators, and extension stems and guides are described on the construction drawings.

Setting Gate Valves

Section 10. Gate valves shall be installed of the size and at the location as shown on the construction drawings. Vertical valves shall be set plumb and horizontal valves installed so that the valve body is level. The valves shall be set to the new pipe in the manner specified for cleaning, laying, and jointing pipe. Mechanical joint, rubber compression seal, or bell and spigot shall be used for buried pipelines. Other types of joints for pipelines within structures will be shown on the construction drawings.

Chain Operators

Section 11. All gate valves six (6) feet or more above the floor surface shall be equipped with a chain operator unless otherwise indicated on the construction drawings.

END OF SECTION

MECHANICAL

Section 15070

Blow-off Valve Assembly

Section 1. Blow-off valves shall be installed in accordance with the Standard Details and the specifications at locations shown on the plans and in other locations as directed by the Engineer.

In general, blow-off valves are located at the end of mains for the purpose of clearing the main of sediment, obstacles, or impure water.

The pipe from the main to the flush valve shall be of the same material and size as the main and connected to the main by means of a tee, or installed at the end of line.

The gate valve for the blow-off connection shall be a AWWA type gate valve with adjustable valve box, same size as water line with two inch operating nut, mechanical joint connections with grip ring glands as approved by the Engineer. The gate valve and the 90° MJ elbow riser fitting must be provided with grip ring glands and securely anchored with concrete blocking to prevent movement.

All pipe beyond the gate valve shall be of the same material as the main waterline

The blow-off flush valve enclosure shall be constructed of a 24" diameter by 24" depth concrete, PVC meter box as approved by the Engineer.

The cover shall be of cast iron construction, flat lid, with cast letters "WATER", or equal as approved by the Engineer.

The cost for the gate valve supplied with blow-off valve shall be included in unit price of blow-off valve. No separate payment will be made for gate valves used with blow-off valves.

END OF SECTION

MECHANICAL

Section 15080

Standard Services Re-Connections

General

Section 1. The work to be performed under this section shall include all labor, materials, equipment, excavation, backfill and testing necessary for the proper installation of all service re-connections. Details of the service installation as shown in the Standard Details Section of these specifications.

No attempt was made to show precise meter setting locations on the plans and the Contractor shall not place any service connection without approval of the location and type by the Engineer. However, in general the meter setting shall be set inside the customer property line and off of State, County Right of Way.

The service shall include: A service clamp, corporation stop, service pipe. These are to be connected to the existing meter setting equipment, meter box and cover.

Service Clamp

Section 2. All service clamps shall be double-strap type for DIP, single strap for PVC, furnished with neoprene gaskets cemented in place. Clamps shall be of the proper size for the pipe with which they are to be used. Clamps shall have a Mueller Corporation stop thread, and shall be suitable for a minimum working water pressure of 200 PSIG. Clamps shall be as manufactured by the Mueller Company or equal as approved by the Engineer.

Corporation Stop

Section 3. All taps for service connections shall be made in the upper half of the main with equipment designed for this purpose. No tap shall be closer than one foot from any joint in the main. Corporation stops shall be of the appropriate size for the service for which they are to become a part. Unless noted otherwise, all services shall be 3/4 inch. Corporation stops shall have a male Mueller thread inlet, and an outlet suitable for connection to the service pipe. Corporation stops shall be Ford Catalog No. F600-3 Flared Joint or equal, if Polyethylene Service Pipe is specified. Insert stiffeners shall be provided with corporation stop if plastic pipe is used.

Service Pipe

Section 4. Service pipe shall be Class 200, polyethylene N.S.F. approved. Service pipe shall run from the corporation stop to the inlet of the meter setting equipment. Service pipe for standard services shall be jacked or drove under paved roads without benefit of steel casing. Open trenches will not be permitted. Should the Contractor chose to use steel casing, it shall be done at no additional cost to the Owner. The jacking, boring, or pushing of service lines under state, county, or private roads or driveways is not a pay item. The unit price bid for service pipe shall include costs for jacking, pushing or boring service pipe as an incidental expense.

END OF SECTION

MECHANICAL

Section 15510

Flush Hydrants

General

Section 1. Flush hydrants shall conform to the applicable requirements of AWWA C502, "Dry-Barrel Fire Hydrants". The hydrants shall have a main valve opening, size as designated herein, one pumper connection and two (2) hose connections. All connections shall be furnished with chained caps. The type of tread and sizes of openings shall be as listed in Table No. 1, "Flush Hydrants Details". All bearing points on the hydrants shall be bronze mounted. The size and shape of the caps and operating nuts together with the direction of opening are listed in Table No. 1.

The hydrants shall be supplied with six (6) inch mechanical joint hub inlet normally for four (4) feet burial of the water main. Barrel extension sections complete with stem extensions shall be furnished for flush hydrants which are set with more than four (4) feet cover.

The hydrants shall incorporate a breakable component at the standpipe flange and a breakaway stem coupling so designed that when the hydrant is subject to severe impact, the special component will shear off at the flange without damage to the hydrant barrel. The main valve shall remain closed if the barrel section and upper stem is separated from the remainder of the hydrants.

The flush hydrants shall be furnished with drain valves which will open when the main valve is closed and shall drain the standpipe completely. The drain valves shall close when the hydrant main valve is opened in such a manner that there will be no leakage through the waste outlets.

The manufacturer shall furnish the Project Director with two (2) copies of a certification that the required tests on the various materials and on the completed hydrant have been made and that the results conform to the requirements of AWWA Specifications C502.

The design information on the flush hydrant shall be furnished to the Consulting Engineer for approval prior to shipment of material to the project.

Installing Flush Hydrants

Section 2. Flush hydrants shall be set at the locations shown on the construction drawings or as directed by the Project Manager. They shall be installed in such a manner as to provide complete accessibility and also in such a manner that the possibility of damage from vehicles or injury to pedestrians will be minimized.

The hydrant barrel shall be set so that the horizontal centerline of the streamer nozzle is eighteen (18) inches above the top of the curb on the streets with curb, and eighteen (18) inches above the ground in unpaved areas, unless directed otherwise by the Project Manager.

When placed behind the curb, the hydrant barrel shall be set so that the outer end of the streamer nozzle cap shall be from six (6) inches to twelve (12) inches behind the back of the curb.

All hydrants shall stand plumb with the streamer nozzle facing the curb or street. The hydrant shall be placed on a flat stone or concrete slab four (4) inches thick and eighteen (18) inches square.

Hydrants shall be set in relation to the established grade shown on the construction drawings or as directed by the Project Manager. All hydrants, regardless of the depth of cover of the water supply branch, shall be furnished with the basic barrel of four (4) foot of cover over the water supply branch and the balance of the hydrant height, as required, shall be made up of a standard hydrant extension. Stem extensions and drip rod extensions, if necessary, shall be included in the extra length hydrants.

The excavations around each hydrant shall be connected to the main line with anchoring piece or anchoring tee and the hydrant shall be anchored to the valve with anchoring pieces or anchoring pipe.

Measurement and Payment

Section 3. The Contractor shall be paid for the actual number of flush hydrants installed on the project at the unit price quoted on the Proposal Sheets.

The unit price bid for a flush hydrant shall include the cost of furnishing and installing the flush hydrant in accordance with these specifications.

Whenever flush hydrants are a part of a lump sum type item, the price quoted shall include all labor and materials to install the hydrants in accordance with these specifications and no separate payment will be made for hydrants.

END OF SECTION

Table No. 1 - Flush Hydrant Details

1.	Diameter - Main Valve Opening	5-1/4 Inches
2.	Diameter - Pumper Connection	4 Inches
3.	Diameter - Hose Connections	2 - 2-1/2 Inches
4.	Thread Type	National Standard
5.	Shape - Caps and Operating Nut	Pentagon
6.	Dimensions - Operating Nut	
	Top	1-inch
	Bottom	1-inch
7.	Direction of Opening	Left (Counterclockwise)
8.	Color to be Painted	Red
9.	Specific Model or Models Required	M & H, Mueller, Eddy, etc.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
EASTERN KENTUCKY REGULATORY OFFICE
845 SASSAFRAS CREEK ROAD
SASSAFRAS, KY 41759-8806

January 18, 2017

Regulatory Division
South Branch
ID No. LRL-2016-964

Mr. Adam Michels
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, Kentucky 40622

Dear Mr. Michels:

This is in regard to your application for a Department of the Army (DA) permit received September 19, 2016, concerning a plan to replace the KY 244 Bridge that spans the CSX Railroad in Russell, Kentucky in Greenup County (Item No. 9-1073). The project would involve the replacement of the structurally deficient bridge, the realignment of an existing intersection, diversion of 878 linear feet of Bear Run into a constructed channel, diversion of 160 linear feet of an unnamed intermittent tributary of Bear Run into a constructed channel, and fill 18 linear feet of an unnamed ephemeral tributary of Bear Run with roadway fill. We have reviewed your application and submitted information 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 and the procedures outlined in the LOP No. 200600259-pgj, issued on October 3, 2007. Therefore, you are authorized, in accordance with Section 404 of the Clean Water Act (CWA), to discharge fill material into 1,056 linear feet of Bear Run and its unnamed tributaries as part of the proposed project. The impacts would occur in and adjacent to the Bear Run watershed of the Ohio River. This permission is granted with the following conditions:

1) The project shall be constructed in accordance with plans included in the September 19, 2016, application for Kentucky Transportation Cabinet, Item No. 9-1073 and all subsequent information received regarding changes to the original submittal.

2) The applicant must provide proof of purchase from an approved mitigation bank for 162.9 EIU stream mitigation credits prior to any discharge of dredged or fill material into "waters of the U.S."

3) The time limit for completing the work authorized ends on 31 December 2022. If the permittee finds that more time is needed to complete the authorized activity, an application must be submitted for a time extension to this office for consideration at least 1 month before the above date is reached.

4) Upon completion of construction you are to notify the District Engineer. The enclosed Completion Report form must be completed and returned to this office.

5) The permittee must agree to comply with the enclosed General Conditions.

6) The permittee must comply with the agreement outlined in the June 11, 2015 letter from U.S. Fish and Wildlife Service regarding the Biological Opinion on endangered species within the project area.

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

This letter contains a proffered permit for your proposed project. If you object to this decision, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this decision, you must submit a completed RFA form to the Lakes and Rivers Division Office at the following address.

Regulatory Appeals Officer
U.S. Army Engineer Division
Great Lakes and Ohio River
550 Main Street - Room 10032
Cincinnati, Ohio 45202-3222
(513) 684-6212

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by

the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **March 21, 2017.**

It is not necessary to submit an RFA form to the Division office if you do not object to the decision in this letter.

This letter also contains a preliminary jurisdictional determination for your records. Preliminary jurisdictional determinations are not appealable and only state that the aquatic resources therein may be "waters of the U.S."

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

FOR THE DISTRICT ENGINEER:

BALDRIDGE.DAVID.E.1230587490
Digitally signed by BALDRIDGE.DAVID.E.1230587490
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=BALDRIDGE.DAVID.E.1230587490
Date: 2017.01.19 15:02:13 -05'00'

David Baldridge
Chief, South Branch
Regulatory Division

Enclosures

(I accept the conditions of this authorization):

Kentucky Transportation Cabinet

1-19-17
Date

Addresses for Coordinating Agencies

Mr. Duncan Powell
USEPA, Region IV
WCOB c/o SESD (Room A100-13)
980 College Station Road
Athens, Georgia 30605-2720

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

Director
Kentucky Energy & Environment Cabinet
Division of Water
200 Fair Oaks, 4th Floor
Frankfort, KY 40601

Dr. Gregory Johnson
Commissioner
Ky. Dept. of Fish and Wildlife Resources
#1 Game Farm Road
Frankfort, KY 40601

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

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Kentucky Transportation Cabinet	File Number:LRL-2016-964	Date: 01/18/2017
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
X	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
Justin Branham US Army Corps of Engineers – Louisville District 845 Sassafras Creek Road Sassafras, KY 41759 (606) 642-3208	Appeals Officer US Army Corps of Engineers – Great Lakes and Ohio River Div CELRD-CM-O 550 Main Street, Rm 10032 Cincinnati, OH 45201-3222 (513) 684-6212

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

GENERAL CONDITIONS:

1. Discharges of dredged or fill material into “waters of the U.S.” must be minimized or avoided to the maximum extent practicable at the project site (i.e. on-site). In determining the minimal impact threshold, the Districts will consider the direct, secondary, and cumulative impacts of the fill or work and any mitigation measures.

2. The permittee shall provide a mitigation/monitoring plan for impacts resulting from the placement of fill into “waters of the U.S.” in excess of 300 linear feet of intermittent or perennial stream; the filling of greater than 0.10 acre (4,356 sq. feet) of waters of the U.S; or work causing more than minimal effects, to compensate for impacts to the “waters of the U.S.” These impact thresholds are applied for each crossing. When mitigation is required, the permittee will develop the mitigation site concurrently with, or in advance of, the site construction unless the Corps determines on a project specific basis that it is not practical to do so. This will ensure that aquatic functions are not lost for long periods of time (e.g. temporal loss) which could adversely affect water quality and wildlife. The requirement for conservation easements or deed restrictions will be determined on a project specific basis.

3. The permittee shall ensure that sedimentation and soil erosion control measures are in place prior to commencement of construction activities. These measures will remain in place and be properly maintained throughout construction. Sedimentation and soil control measures shall include the installation of straw bale barriers, silt fencing and/or other approved methods to control sedimentation and erosion. Sedimentation and erosion controls will not be placed in “waters of the U.S.” except if specifically approved by the District.

4. The permittee shall ensure that areas disturbed by any construction activity, including channel and stream banks, are immediately stabilized and revegetated with a combination of non-invasive plants (grasses, legumes and shrubs) which are compatible with the affected area and will not compete with native vegetation.

5. The permittee shall ensure that no in-stream construction activity is performed during periods of high stream flow or during the fish spawning season (April 1 through June 30) without first contacting the Kentucky Department of Fish and Wildlife Resources (KDFWR) for their expertise on impacts to the fishery resource. Additionally, the discharge of dredged and/or fill material in known waterfowl breeding and wintering areas must be avoided to the maximum extent practicable.
6. The permittee will ensure that the activity authorized will not

disrupt movement of those aquatic species indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's specific purpose is to impound water.

7. The permittee shall ensure that all construction equipment is refueled and maintained on an upland site away from existing streams, drainageways and wetland areas. Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance.

8. The permittee must comply with any case specific special conditions added by the Corps or by the State Section 401 Water Quality Certification (WQC). The conditions imposed in the State Section 401 WQC are also conditions of this LOP.

9. The permittee shall ensure that no activity authorized by the LOP may cause more than a minimal adverse effect on navigation.

10. The permittee shall ensure proper maintenance of any structure or fill authorized by the LOP, in good condition and in conformance with the terms and conditions of the LOP, including maintenance to ensure public safety. The permittee is not relieved of this requirement if the permitted activity is abandoned, although the permittee may make a good faith transfer to a third party. Should the permittee wish to cease to maintain the authorized activity or desire to abandon it without a good faith transfer, the permittee must obtain a modification to the LOP from the Corps, which may require restoration of the area.

11. The permittee shall not perform any work within any Wild and Scenic Rivers or in any river officially designated as a "study river" for possible inclusion in the system, unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity authorized by the LOP will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal Land Management agency in the area (e.g. U.S. Forest Service, Bureau of Land Management, the National Parks Service, or the U.S. Fish and Wildlife Service).

12. The permittee shall not perform any work under the LOP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. The permittee shall notify the Corps and coordinate the

proposed action with the USFWS to determine if any listed species or critical habitat might be affected and/or adversely modified by the proposed work. No activity is authorized under the LOP which “may affect” a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. At the direction of the Corps, the permittee shall complete the necessary consultation with the USFWS, satisfying the requirements of Section 7(a)(2) of the Endangered Species Act. The permittee shall not begin work until notified by the District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Authorization of an activity under the LOP does not authorize the "take" of a threatened or endangered species as defined under the Federal Endangered Species Act. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. Fish and Wildlife Service, both lethal and non-lethal "takes" of protected species are in violation of the Endangered Species Act.

Obligations under Section 7 of the Act must be reconsidered by the Corps Districts if (1) new information reveals impacts of the proposed action may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

13. The permittee shall not perform any activity under the LOP which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C. The permittee must notify the District Engineer if the activity authorized by the LOP may affect any historic properties listed, determined to be eligible or which the permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin construction until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the Kentucky Heritage Council.

If the permittee discovers any previously unknown historic or archaeological remains while accomplishing the activity authorized by the LOP, work must be immediately stopped and this office immediately notified regarding the discovery. The District will initiate the Federal, Tribal and State coordination required to determine if the

remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

14. The permittee shall not perform any work under the LOP where the discharge of dredged and/or fill material will occur in the proximity of a public water supply intake.

15. No activity, including structures or work in “waters of the U.S.” or discharges of dredged or fill material may consist of unsuitable materials (e.g. trash, debris, car bodies, asphalt, etc.) and that materials used for construction or discharge must be free from toxic pollutants in toxic amounts.

16. The permittee shall, to the maximum extent practicable, design the project to maintain pre-construction downstream flow conditions. Furthermore, the work must not permanently restrict or impede the passage of normal or expected high flows and the structure or discharge of fill must withstand expected high flows. The project must provide, to the maximum extent practicable, for retaining excess flows from the site and for establishing flow rates from the site similar to pre-construction conditions.

17. The permittee shall ensure that all temporary fills, authorized under the LOP, be removed in their entirety and the affected areas returned to pre-construction elevation.

18. Representatives from the Corps of Engineers and/or the State of Kentucky may inspect any authorized activity or mitigation site at any time deemed necessary to ensure compliance with the terms and conditions of the LOP, Section 401 WQC, and applicable laws.

19. All work authorized by this LOP must be completed within five years after the date of the Corps authorization letter. If you find you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least three months before the expiration date.

20. The permittee, after completion of work under the LOP, shall submit a signed certification letter regarding the completed work and required mitigation, if applicable. The certification letter will include a statement that the work was done in accordance with the LOP authorization including compliance with all general and special conditions and completion of mitigation work.

21. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is

being or has been accomplished with the terms and conditions of the LOP.

22. For Section 10 waters, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

October 20, 2016

David Waldner
Kentucky Transportation Cabinet (KYTC)
200 Mero St
Frankfort, KY 40622

Re: Letter of Permission No.: 2016-107-1
AI No.: 131796; Activity ID: APE20160001
KYTC Item No.: 9-1073
USACE ID No.: LRL-2016-964
Bear Run and U.T. to Bear Run
Greenup County, Kentucky

Dear Mr. Waldner:

This letter transmits to you a copy of our General Water Quality Certification for the Letter of Permission Authorizing Transportation Projects for the Kentucky Transportation Cabinet – KY 244 Bridge Replacement Project in Greenup County, Kentucky, in accordance with plans included in the "Application for Permit to Construct Across or Along a Stream and/or Water Quality Certification" dated August 30, 2016, including impacts to 1,056 linear feet of ephemeral, intermittent, and perennial stream (0.1415 acre of channel fill).

An individual Water Quality Certification is not necessary for this activity provided that this project has satisfies the Transportation Letter of Permission from the U.S. Army Corps of Engineers (Letter of Permission for Transportation Projects, Corps ID No. LRL-2006-259, issued October 03, 2007 and revised October 28, 2010) and all conditions of the attached General Water Quality Certification - Letter of Permission Authorizing Transportation Projects are met.

Although an Individual WQC is not needed, other permits from the Division of Water may be required. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) stormwater permit shall be required from the Surface Water Permits Branch. This permit requires the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include erosion prevention and sediment control measures. Contact: Surface Water Permits Branch (SWPB) Support (502-564-3410 or SWPBSupport@ky.gov)

All future correspondence on this project must reference **AI No. 131796**. If you should have any questions concerning this letter, please contact Cody Thayer of my staff, at (502) 782-7090 or Cody.Thayer@ky.gov.

Sincerely,

Stephanie Hayes, Supervisor
Water Quality Certification Section
Kentucky Division of Water

Attachment

cc: Adam Michels, KYTC: Frankfort (via email: Adam.Michels@ky.gov)
Danny Peake, KYTC: Frankfort (via email: Danny.Peake@ky.gov)
Dave Harmon, KYTC: Frankfort (via email: Dave.Harmon@ky.gov)
Justin Branham, USACE: Louisville (via email: Justin.L.Branham@usace.army.mil)
Lee Andrews, USFWS: Frankfort (via email: Teresa_Hyatt@fws.gov)
Danny Fraley, KDOW: Morehead Regional Office (via email: Daniel.Fraley@ky.gov)
Jim Roe, KDOW: River Basin Supervisor (via email: James.Roe@ky.gov)

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
Department for Environmental Protection

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

ATTENTION APPLICANT

If your project involves one or more of the following activities, you may need more than one permit from the Kentucky Division of Water.

***building in a floodplain *road culvert in a stream**
***streambank stabilization *stream cleanout**
***utility line crossing a stream**
***construction sites greater than 1 acre**

- **Construction sites greater than 1 acre will require the filing of a Notice of Intent to be covered under the KPDES General Stormwater Permit. This permit requires the creation of an erosion control plan.**
  Contact: Surface Water Permits Branch (SWPB) Support at SWPBSupport@ky.gov

- **Projects that involve filling in the floodplain will require a floodplain construction permit from the Water Resources Branch.**
  Contact: Ron Dutta at (502) 782-6941

- **Projects that involve work IN a stream, such as bank stabilization, road culverts, utility line crossings, and stream alteration will require a floodplain permit and a Water Quality Certification from the Division of Water.**
  Contact: Stephanie Hayes at (502) 782-6970

A complete listing of environmental programs administered by the Kentucky Department for Environmental Protection is available from Pete Goodmann by calling (502) 782-6956.

GENERAL CONDITIONS FOR WATER QUALITY CERTIFICATION

1. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.

2. All dredged material shall be removed to an upland location and/or graded on adjacent areas (so long as such areas are not regulated wetlands), to obtain original streamside elevations, i.e. overbank flooding shall not be artificially obstructed.

3. In areas not riprapped or otherwise stabilized, revegetation of stream banks and riparian zones shall occur concurrently with project progression. At a minimum, revegetation will approximate pre-disturbance conditions.

4. To the maximum extent practicable, all instream work under this certification shall be performed during low flow.

5. Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances where such instream work is unavoidable, then it shall be performed in such a manner and duration as to minimize resuspension of sediments and disturbance to substrates and bank or riparian vegetation.

6. Any fill or riprap including refuse fill, shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If riprap is utilized, it is to be of such weight and size that bank stress or slump conditions will not be created because of its placement.

7. If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when work will be done.

8. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.

9. Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/928-2380.

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification -- Letter of Permission Authorizing Transportation Projects (LRL-2006-259-pgj- Date: 28 Oct 2010)

This general certification is issued February 26, 2016, by the Kentucky Division of Water, 401 Water Quality Certification Program in conformity with the requirements of Sections 301, 302, 304, 306 and 401, as amended (33 U.S.C. §1341), of the Clean Water Act, as well as Kentucky Statute KRS 224.16-050 and Kentucky Administrative Regulations Title 401, Chapter 9 and 10.

For this and all general permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): Surface Waters mean those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered surface waters of the commonwealth.

In addition to all the restrictions and conditions of the U.S. Army Corps of Engineers, Louisville District Letter of Permission Issuance (LRL-2006-259-pgj) hereby incorporated into this general certification (included herein), the following 401 Water Quality Certification criteria applies to all transportation projects certified under a Certified Letter of Permission issued by the Kentucky Division of Water, 401 Water Quality Certification Program:

1. The activity will not qualify for this general certification if it is proposed to occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Water.

2. The activity will not qualify for this general certification if it is proposed to occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) stream and/or wetland mitigation sites permitted by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Certification of Transportation Letter of Permission
Page 2

3. The Kentucky Division of Water may require an individual certification for any project if the project is likely to have adverse impacts to water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
4. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:

- The proposed relocation of an existing stream or channel will be designed and constructed to ensure the stability of the relocated stream or channel. Stream habitat enhancements, such as bioengineering methods and/or best management practices for protecting water quality will be considered, on a case-by-case basis, during the design process. Documentation must be provided if stream habitat enhancements will not be used for the proposed stream relocation.

- Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that state water quality are maintained (401 KAR Chapter 10).

- Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without notifying the Kentucky Division of Water. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.

- Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.

- Removal of riparian vegetation in the right-of-way shall be limited to that necessary.

- To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.

- Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it should be performed in low-flow or no-flow instances or in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

Certification of Transportation Letter of Permission
Page 3

- Fill shall not be of such composition that it will adversely affect the biological, chemical, or physical properties of the receiving waters and associated water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.

- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the public supply system when such work will be done.

- Should evidence of stream and/or wetland pollution impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Environmental Response Team (ERT) shall be notified immediately by calling 1-800-928-2380 or 502-564-2380.

This general certification does not have an expiration date, however if the need for changes develop or if the U.S. Army Corps of Engineers, Louisville District makes modifications to the Letter of Permission (LRL-2006-259-pgj- Date: 28 Oct 2010) then a certification modification may be issued. Non-compliance with the conditions of this general certification or failure to maintain Kentucky state water quality standards may result in civil penalties.

Kentucky Transportation Cabinet

Highway District _9_

And

_____(2), Construction

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

Groundwater protection plan

For Highway Construction Activities

For

Greenup County; KY 244 Address deficiencies of bridge on KY 244 (MP 0.103) over CSX Railroad; 0.05 mi NE of Junction US 23 (045B00039N)

Project: CID ## -

Revised 3/4/2016

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

Project information

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

1. Owner – Kentucky Transportation Cabinet, District _9_

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) - KY 244

6. Latitude/Longitude (project mid-point) -82° 41' 17.11928W / 38° 31' 31.92636N

7. County (project mid-point) - Greenup

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

9. Projected completion date: (2)

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

A. Site description:

1. Nature of Construction Activity (from letting project description) – Address deficiencies of bridge on KY 244 (MP 0.103) over CSX Railroad; 0.05 mi NE of Jct US 23 (045B00039N)

2. Order of major soil disturbing activities (2) and (3)

3. Projected volume of material to be moved – 225,576 cubic yards

4. Estimate of total project area (acres) – 17.32 acres

5. Estimate of area to be disturbed (acres) – 17.32 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.

7. Data describing existing soil condition - The Geotechnical Report states that some of the soil horizons and slopes on the project are subject to erosion. & (2)

8. Data describing existing discharge water quality (if any) None known. & (2)

9. Receiving water name – Bear Run & Ohio River

10. TMDLs and Pollutants of Concern in Receiving Waters: There are no TMDLs for Bear Run or the Ohio River at this location according to the KDOW 2016 Integrated Report.

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 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. <u>All DDA’s will have adequate BMP’s in place before being disturbed.</u>

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
    - 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 : None.

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 basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

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

4. Spill Prevention

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

- **Good Housekeeping:**

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

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

- **Hazardous Products:**

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

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

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:**

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

- **Spill Control Practices**

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

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

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, 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. The project falls within the City of Russell, which is a MS4 community. A copy of the eNOI should be submitted to the MS4 Coordinator for the City of Russell at the same time it is submitted to the KY Division of Water. Contact info is: Mayor Bill Hopkins, PH: (606) 836-9666, email: russelljec@aol.com. Additionally, a copy of the eNOI should be submitted to the Greenup County Fiscal Court MS4 Coordinator. Contact info is: Judge Robert Carpenter, PH: (606) 473-6440; email: Rcarpenter@zoominternet.net.

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. None.

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.

- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

G. Non – Storm Water discharges

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

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

_____ 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 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.)

Contractor and Resident Engineer Plan certification

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

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

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

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

Signed _____title_____, _____
Typed or printed name[2] signature

(3) Signed _____title_____, _____
Typed or printed name[1] signature

1. Contractors Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, Surface Water Permits Branch, Division of Water, 300 Sower Boulevard, 3rd Floor, Frankfort, Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

2. KyTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the

resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, Surface Water Permits Branch, Division of Water, 300 Sower Boulevard, 3rd Floor, Frankfort, Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

Sub-Contractor Certification

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

Subcontractor

Name:
Address:
Address:

Phone:

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

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

Signed _____title_____, _____
Typed or printed name[1] signature

1. Sub Contractor Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, Surface Water Permits Branch, Division of Water, 300 Sower Boulevard, 3rd Floor, Frankfort, Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

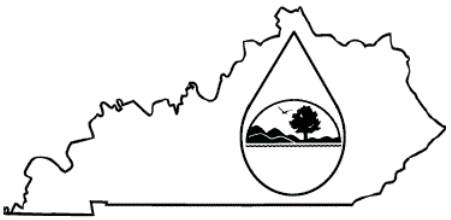
SPECIAL NOTE

Filing of eNOI for KPDES Construction Stormwater Permit

County: Greenup **Route: KY 244**
Item No.: 9-1073.00 **KDOW Submittal ID: 125998**
Project Description: Address Deficiencies of Bridge on KY 244 (MP 0.103) over CSX Railroad; 0.05 mi NE of Jct US 23 (045B00039N)

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 Director, Division of Environmental Analysis, TCOB, 200 Mero Street, Frankfort, KY 40622, Phone: (502) 564-7250.



KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)

Notice of Intent (NOI) for coverage of Storm Water Discharge Associated with Construction Activities Under the KPDES Storm Water General Permit KYR100000

Click here for Instructions (Controls/KPDES_FormKYR10_Instructions.htm)

Click here to obtain information and a copy of the KPDES General Permit. (http://dep.ky.gov/formslibrary/Documents/KYR10PermitPage.pdf)

(*) indicates a required field; (✓) indicates a field may be required based on user input or is an optionally required field

Reason for Submittal:(*)	Agency Interest ID:	Permit Number:(✓)
Application for New Permit Coverage	Agency Interest ID	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:(✓)	First Name:(✓)	M.I.:	Last Name:(✓)
Kentucky Transportation Cabinet - D9 Flemingsburg	Bart	B	Bryant

Mailing Address:(*)	City:(*)	State:(*)	Zip:(*)
822 Elizaville Road	Flemingsburg	Kentucky	41041

eMail Address:(*)	Business Phone:(*)	Alternate Phone:
bart.bryant@ky.gov	606-845-2551	Phone

SECTION II -- GENERAL SITE LOCATION INFORMATION

Project Name:(*)	Status of Owner/Operator(*)	SIC Code(*)
KY 244 Bridge Replacement Project; Item No. 9-1073.00	State Government	1622 Bridge, Tunnel, and I

Company Name:(✓)	First Name:(✓)	M.I.:	Last Name:(✓)
Kentucky Transportation Cabinet	Bart	B	Bryant

Site Physical Address:(*)
KY 244 Viaduct

City:(*)	State:(*)	Zip:(*)
Russell	Kentucky	41169

County:(*)	Latitude(decimal degrees)(*)DMS to DD Converter (https://www.fcc.gov/media/radio/dms-decimal)	Longitude(decimal degrees)(*)
Greenup	38.525770	-82.688265

SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION

Project Description:(*)
Replace bridge on KY 244 (MP 0.103) over CSX Railroad; 0.05 mi NE of Jct US 23 (045B00039N)

a. For single projects provide the following information

Total Number of Acres in Project:(✓)	Total Number of Acres Disturbed:(✓)

17.32	17.32
Anticipated Start Date:(✓)	Anticipated Completion Date:(✓)

b. For common plans of development provide the following information

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

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	
1	No	38.524200	-82.689879	Bear Run	Delete
2	No	38.524203	-82.692111	Bear Run	Delete
3	No	38.524340	-82.690448	Bear Run	Delete
4	No	38.524342	-82.689326	Bear Run	Delete
5	No	38.524371	-82.691493	Bear Run	Delete
6	No	38.524550	-82.690977	Bear Run	Delete
7	No	38.524631	-82.690755	Bear Run	Delete
8	No	38.524903	-82.690158	Bear Run	Delete
9	No	38.524913	-82.691147	Bear Run	Delete
10	No	38.525006	-82.690974	Bear Run	Delete

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

Name of MS4:

Greenup County Fiscal Court-RUSSELL

Date of application/notification to the MS4 for construction site permit coverage:	Discharge Point(s):(*)
Date	

	Latitude	Longitude	
1	38.524200	-82.689879	Delete
2	38.524203	-82.692111	Delete
3	38.524340	-82.690448	Delete
4	38.524342	-82.689326	Delete
5	38.524371	-82.691493	Delete
6	38.524511	-82.687643	Delete
7	38.524550	-82.690977	Delete
8	38.524566	-82.688264	Delete
9	38.524631	-82.690755	Delete
10	38.524903	-82.690158	Delete

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: (✓)	Stream relocation and culvert replacement
Is a Clean Water Act 404 permit required?:(*)	Yes
Is a Clean Water Act 401 Water Quality Certification required?:(*)	Yes

SECTION VII -- NOI PREPARER INFORMATION

First Name:(*)	M.I.:	Last Name:(*)	Company Name:(*)
Karen	L	Mynhier	Kentucky Transportation Cabinet - D9 Flemingsburg

Mailing Address:(*)	City:(*)	State:(*)	Zip:(*)
822 Elizaville Road	Flemingsburg	Kentucky	41041

eMail Address:(*)	Business Phone:(*)	Alternate Phone:
karen.mynhier@ky.gov	606-845-2551	Phone

SECTION VIII -- ATTACHMENTS

Facility Location Map:(*)	Upload file
Supplemental Information:	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.

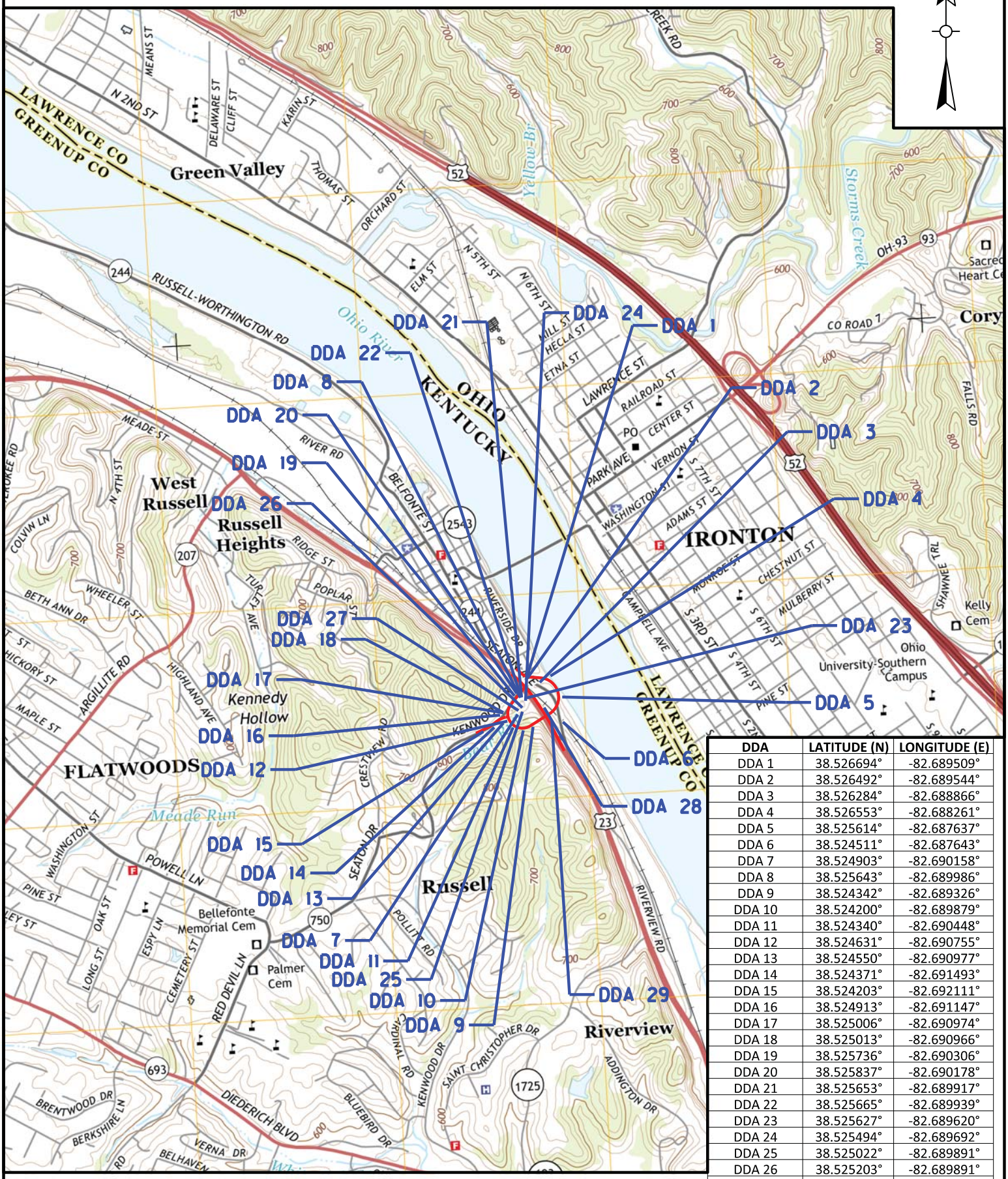
Signature:(*)	Title:(*)
Signature	Title

First Name:(*)	M.I.:	Last Name:(*)
First Name	MI	Last Name

eMail Address:(*)	Business Phone:(*)	Alternate Phone:	Signature Date:(*)
eMail Address	Phone	Phone	Date

Click to Save Values for Future Retrieval | Click to Submit to EEC

EXHIBIT 1



DDA	LATITUDE (N)	LONGITUDE (E)
DDA 1	38.526694°	-82.689509°
DDA 2	38.526492°	-82.689544°
DDA 3	38.526284°	-82.688866°
DDA 4	38.526553°	-82.688261°
DDA 5	38.525614°	-82.687637°
DDA 6	38.524511°	-82.687643°
DDA 7	38.524903°	-82.690158°
DDA 8	38.525643°	-82.689986°
DDA 9	38.524342°	-82.689326°
DDA 10	38.524200°	-82.689879°
DDA 11	38.524340°	-82.690448°
DDA 12	38.524631°	-82.690755°
DDA 13	38.524550°	-82.690977°
DDA 14	38.524371°	-82.691493°
DDA 15	38.524203°	-82.692111°
DDA 16	38.524913°	-82.691147°
DDA 17	38.525006°	-82.690974°
DDA 18	38.525013°	-82.690966°
DDA 19	38.525736°	-82.690306°
DDA 20	38.525837°	-82.690178°
DDA 21	38.525653°	-82.689917°
DDA 22	38.525665°	-82.689939°
DDA 23	38.525627°	-82.689620°
DDA 24	38.525494°	-82.689692°
DDA 25	38.525022°	-82.689891°
DDA 26	38.525203°	-82.689891°
DDA 27	38.525078°	-82.690113°
DDA 28	38.525170°	-82.688668°
DDA 29	38.524566°	-82.688264°

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 2016.*

SUPPLEMENTAL SPECIFICATIONS

The contractor shall use the Supplemental Specifications that are effective at the time of letting. The Supplemental Specifications can be found at the following link:

http://transportation.ky.gov/Construction/Pages/Kentucky-Standard-Specifications.aspx

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SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

1.0 DESCRIPTION. Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
3) Provide a controller consisting of:
   a) Keyboard or keypad.
   b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
   c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
   d) Logic circuitry to control the sequence of messages and flash rate.
4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates.
5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.
9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
11) Provide a photocell control to provide automatic dimming.

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12) Allow an on-off flashing sequence at an adjustable rate.
13) Provide a sight to aim the message.
14) Provide a LED display color of approximately 590 nm amber.
15) Provide a controller that is password protected.
16) Provide a security device that prevents unauthorized individuals from accessing the controller.
17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

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

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

2.3 Power.

1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

3.0 CONSTRUCTION. Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be

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the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

5.0 PAYMENT. The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

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SPECIAL NOTE FOR ROCK BLASTING

This Special Note 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. This work consists of fracturing rock and constructing stable final rock cut faces using presplit blasting and production blasting techniques.

2.0 MATERIALS. Deliver, store, and use explosives according to the manufacturer's recommendations and applicable laws. Do not use explosives outside their recommended use date. Verify date of manufacture and provide copies of the technical data sheets (TDS) and material safety data sheets (MSDS) to the Engineer. Explosives and initiating devices include, but are not necessarily limited to, dynamite and other high explosives, slurries, water gels, emulsions, blasting agents, initiating explosives, detonators, blasting caps, and detonating cord.

3.0 CONSTRUCTION. Furnish copies or other proof of all-applicable permits and licenses. Comply with Federal, State, and local regulations on the purchase, transportation, storage, and use of explosive material. Regulations include but are not limited to the following:

1) KRS 351.310 through 351.9901.
2) 805 KAR 4:005 through 4:165
3) Applicable rules and regulations issued by the Office of Mine Safety and Licensing.
4) Safety and health. OSHA, 29 CFR Part 1926, Subpart U.
5) Storage, security, and accountability. Bureau of Alcohol, Tobacco, and Firearms (BATF), 27 CFR Part 181.
6) Shipment. DOT, 49 CFR Parts 171-179, 390-397.

3.1 Blaster-in-Charge. Designate in writing a blaster-in-charge and any proposed alternates for the position. Submit documentation showing the blaster-in-charge, and alternates, have a valid Kentucky blaster's license. Ensure the blaster-in-charge or approved alternate is present at all times during blasting operations.

3.2 **Blasting Plans.** Blasting plans and reports are for quality control and record keeping purposes. Blasting reports are to be signed by the blaster-in-charge or the alternate blaster-in-charge. The general review and acceptance of blasting plans does not relieve the Contractor of the responsibility whatsoever for conformance to regulations or for obtaining the required results. All blasting plans shall be submitted to the Engineer. The Engineer will be responsible for submitting the plan to the Central Office Division of Construction and the Division of Mine Reclamation and Enforcement, Explosives and Blasting Branch at the following address: 2 Hudson Hollow, Frankfort, Kentucky, 40601.

A) General Blasting Plan. Submit a general blasting plan for acceptance at least 15 working days before drilling operations begin. Include, as a minimum, the following safety and procedural details:

1) Working procedures and safety precautions for storing, transporting, handling, detonating explosives. Include direction on pre and post blast audible procedures, methods of addressing misfires, and methods of addressing inclement weather, including lightning.
2) Proposed product selection for both dry and wet holes. Furnish Manufacturer's TDS and MSDS for all explosives, primers, initiators, and other blasting devices.
3) Proposed initiation and delay methods.
4) Proposed format for providing all the required information for the site specific blasting shot reports.

B) Preblast Meeting. Prior to drilling operations, conduct a preblast meeting to discuss safety and traffic control issues and any site specific conditions that will need to be addressed. Ensure, at a minimum, that the Engineer or lead inspector, Superintendent, blaster-in-charge, and all personnel involved in the blasting operation are present. Site specific conditions include blast techniques; communication procedures; contingency plans and equipment for dealing with errant blast material. The conditions of the General Blasting plan will be discussed at this meeting. Record all revisions and additions made to the blasting plan and obtain written concurrence by the blaster-in-charge. Provide a copy of the signed blast plan to the Engineer along with the sign in sheet from the preblast meeting.

3.3 Preblast Condition Survey and Vibration Monitoring and Control. Before blasting, arrange for a preblast condition survey of nearby buildings, structures, or utilities, within 500 feet of the blast or that could be at risk from blasting damage. Provide the Engineer a listing of all properties surveyed and any owners denying entry or failing to respond. Notify the Engineer and occupants of buildings at risk at least 24 hours before blasting.

Limit ground vibrations and airblast to levels that will not exceed limits of 805 KAR 4:005 through 4:165. More restrictive levels may be specified in the Contract.

Size all blast designs based on vibration, distance to nearest building or utility, blast site geometry, atmospheric conditions and other factors. Ground vibrations are to be controlled according to the blasting standards and scaled distance formulas in 805 KAR 4:020 or by the use of seismographs as allowed in 805 KAR 4:030. The Department will require seismographs at the nearest allowable location to the protected site when blasting occurs within 500 feet of buildings, structures, or utilities.

3.4 Blasting. Drill and blast at the designated slope lines according to the blasting plan. Perform presplitting to obtain smooth faces in the rock and shale formations. Perform the presplitting before blasting and excavating the interior portion of the specified cross section at any location. The Department may allow blasting for fall benches and haul roads prior to presplitting when blasting is a sufficient distance from the final slope and results are satisfactory to the Engineer. Use the types of explosives and blasting accessories necessary to obtain the required results.

Free blast holes of obstructions for their entire depth. Place charges without caving the blast hole walls. Stem the upper portion of all blast holes with dry sand or other granular material passing the 3/8-inch sieve. Dry drill cuttings are acceptable for stemming when blasts are more than 800 feet from the nearest dwelling.

Stop traffic during blasting operations when blasting near any road and ensure traffic does not pass through the Danger Zone. The blaster-in-charge will define the Danger Zone prior to each blast. Ensure traffic is stopped outside the Danger Zone, and in no case within 800 feet of the blast location.

Following a blast, stop work in the entire blast area, and check for misfires before allowing worker to return to excavate the rock.

Remove or stabilize all cut face rock that is loose, hanging, or potentially dangerous. Leave minor irregularities or surface variations in place if they do not create a hazard. Drill the next lift only after the cleanup work and stabilization work is complete.

When blasting operations cause fracturing of the final rock face, repair or stabilize it in an approved manner at no cost to the Department.

Halt blasting operations in areas where any of the following occur:

1) Slopes are unstable;
2) Slopes exceed tolerances or overhangs are created;
3) Backslope damage occurs;
4) Safety of the public is jeopardized;
5) Property or natural features are endangered;
6) Fly rock is generated; or
7) Excessive ground or airblast vibrations occur in an area where damage to buildings, structures, or utilities is possible.
8) The Engineer determines that materials have become unsuitable for blasting

Blasting operations may continue at a reasonable distance from the problem area or in areas where the problems do not exist. Make the necessary modifications to the blasting operations and perform a test blast to demonstrate resolution of the problem.

A) Drill Logs. Maintain a layout drawing designating hole numbers with corresponding drill logs and provide a copy of this information to the blaster prior to loading the hole. Ensure the individual hole logs completed by the driller(s) show their name; date drilled; total depth drilled; and depths and descriptions of significant conditions encountered during drilling that may affect loading such as water, voids, changes in rock type.

B) Presplitting. Conduct presplitting operations in conformance with Subsection 204.03.04 of the Standard Specifications for Road and Bridge Construction.

3.5 Shot Report. Maintain all shot reports on site for review by the Department. Within one day after a blast, complete a shot report according to the record keeping requirements of 805 KAR 4:050. Include all results from airblast and seismograph monitoring.

3.6 Unacceptable Blasting. When unacceptable blasting occurs, the Department will halt all blasting operations. Blasting will not resume until the Department completes its investigation and all concerns are addressed. A blast is unacceptable when it results in fragmentation beyond the final rock face, fly rock, excessive vibration or airblast, overbreak, damage to the final rock face or overhang. Assume the cost for all resulting damages to private and public property and hold the Department harmless.

When an errant blast or fly rock causes damage to or blocks a road or conveyance adjacent to the roadway, remove all debris from the roadway as quickly as practicable and perform any necessary repairs. Additionally, when specified in the Contract, the Department will apply a penalty.

Report all blasting accidents to the Division of Mine Reclamation and Enforcement, Explosives and Blasting Branch at 502-564-2340.

4.0 MEASUREMENT AND PAYMENT. The Department will not measure this work for payment and will consider all items contained in this note to be incidental to either Roadway Excavation or Embankment-in-Place, as applicable. However, if the Engineer directs in writing slope changes, then the Department will pay for the second presplitting operation as Extra Work.

The Department will measure for payment material lying outside the typical section due to seams, broken formations, or earth pockets, including any earth overburden removed with this material, only when the work is performed under authorized adjustments.

The Department will not measure for payment any extra material excavated because of the drill holes being offset outside the designated slope lines.

The Department will not measure for payment any material necessary to be removed due to the inefficient or faulty blasting practices.

June 15, 2012

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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.
[2]Minimum Average Roll Values for tensile strength of sample material machine direction.
[3]Tensile Strength percentage retained after stated 1000 hr duration of exposure under ASTM D4355 testing. Based on nondegradable components exclusively.
[4]Maximum 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:

Code	Pay Item	Pay Unit
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

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).

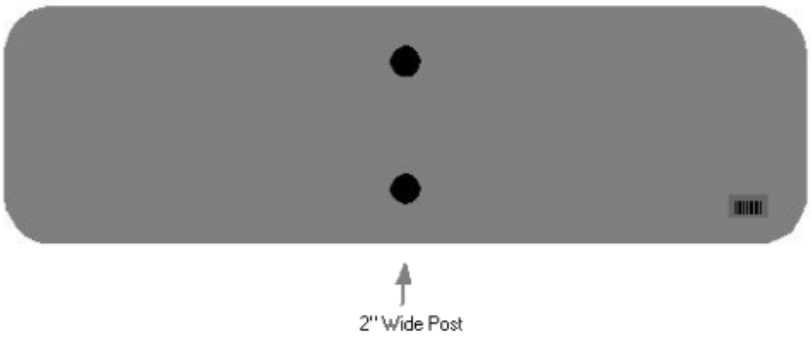
The installation of the permanent sign will be measured in accordance to Section 715.

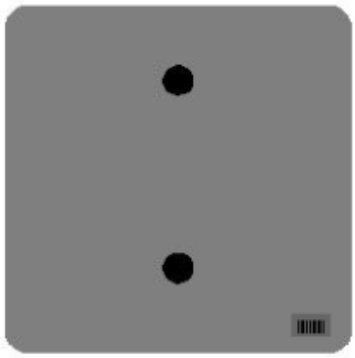
5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
24631EC	Barcode Sign Inventory	Each

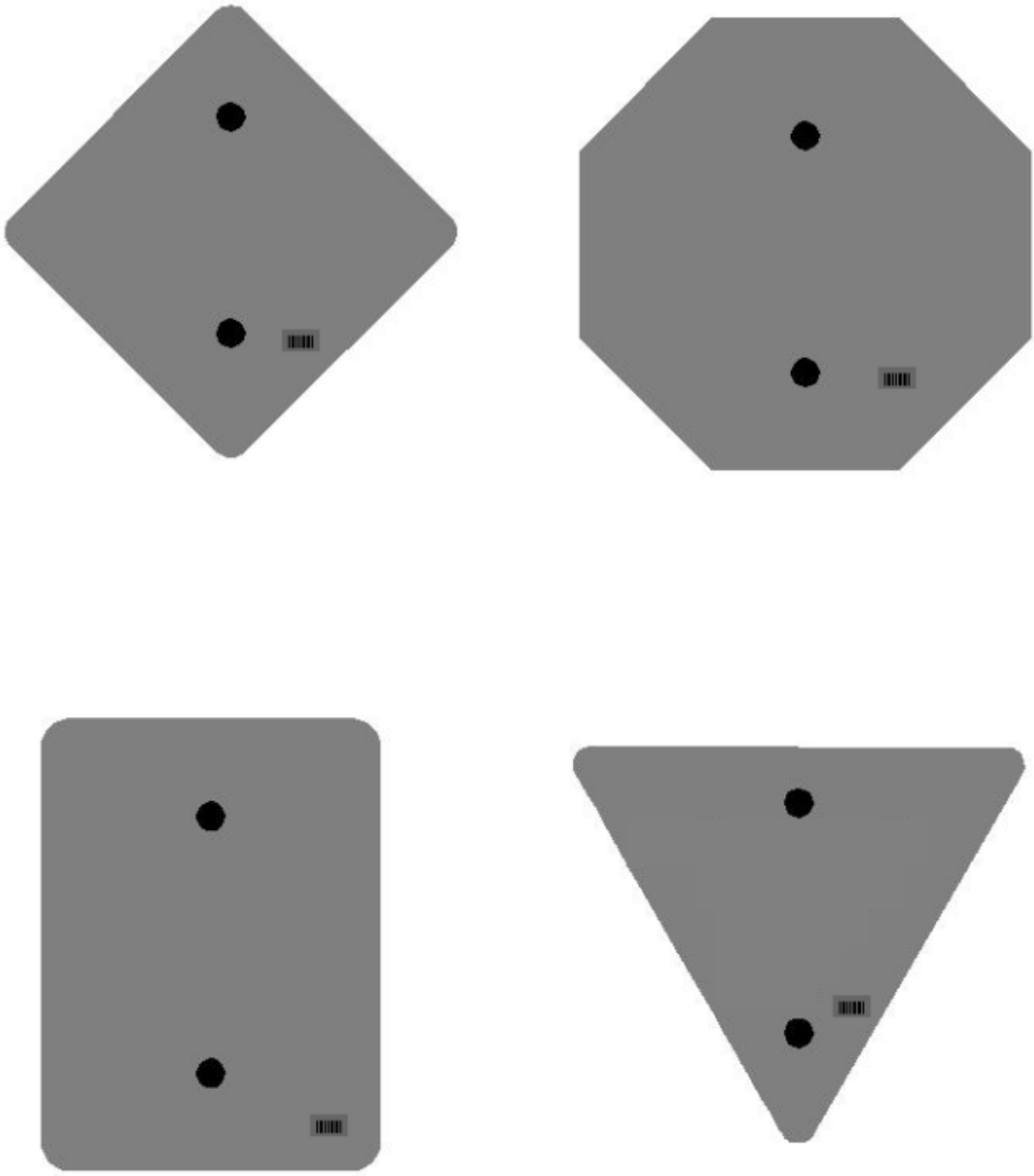
The Department will not make payment for this item until all barcodes are installed and sign inventory is complete on every permanent sign installed on the project. The Department will make payment for installation of the permanent sign in accordance to Section 715. The Department will consider payment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

One Sign Post

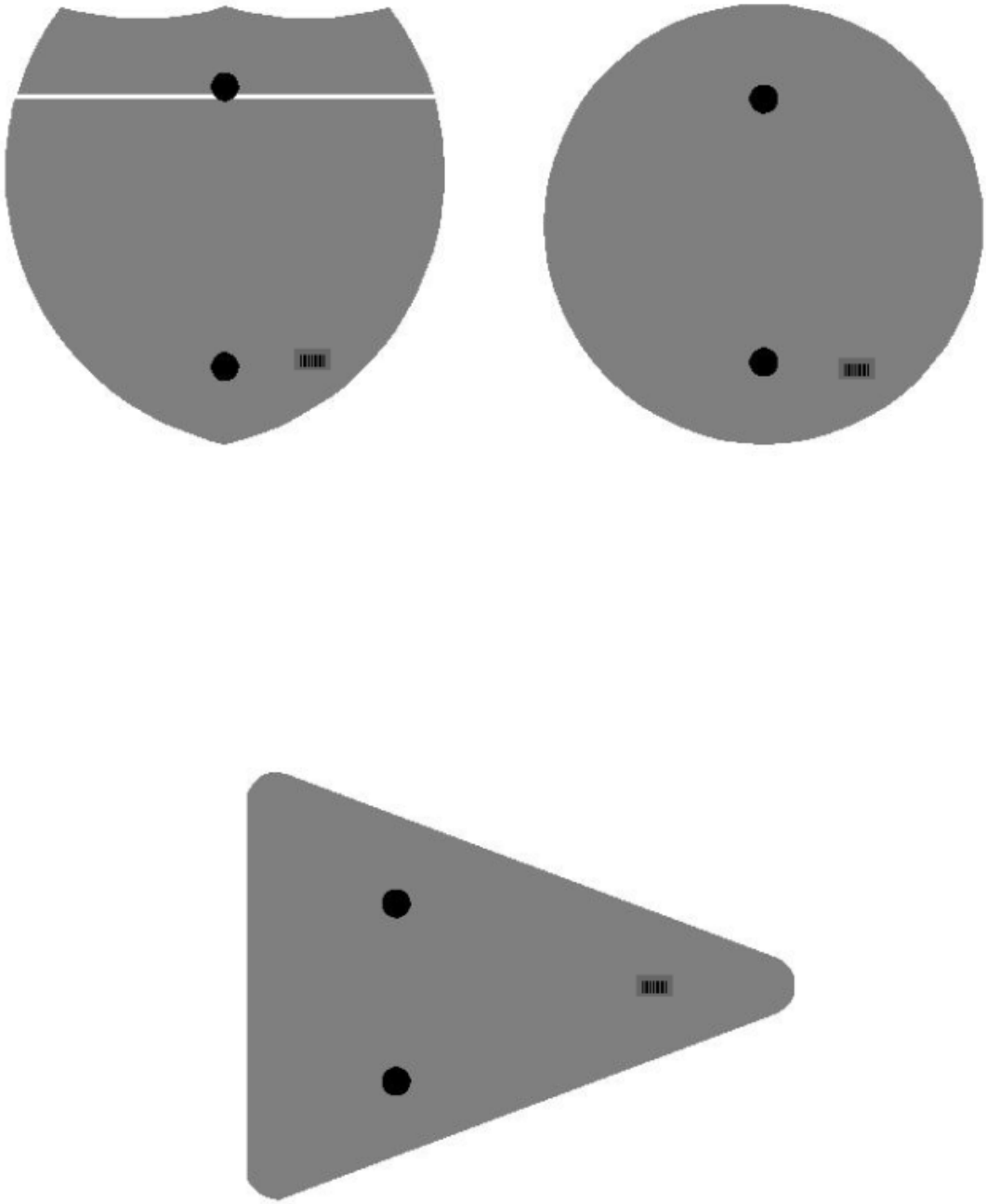




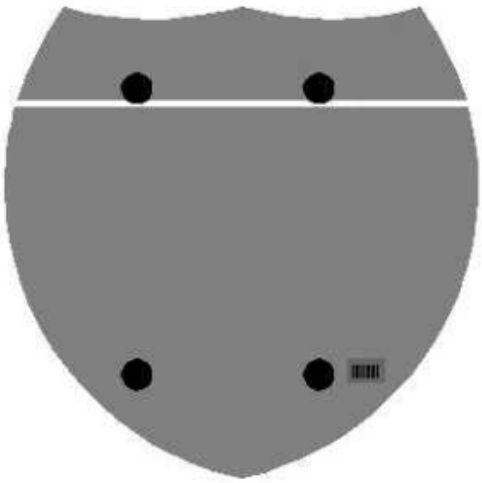
One Sign Post



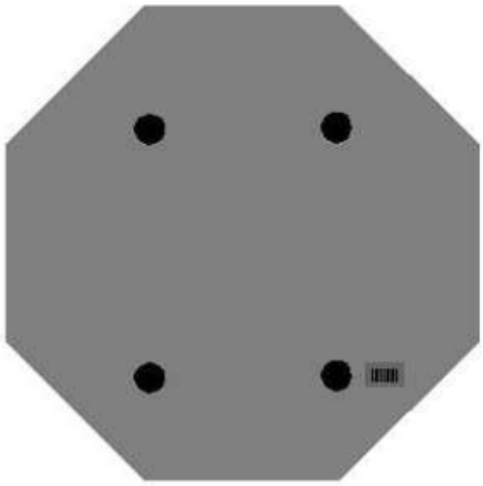
One Sign Post



Double Sign Post

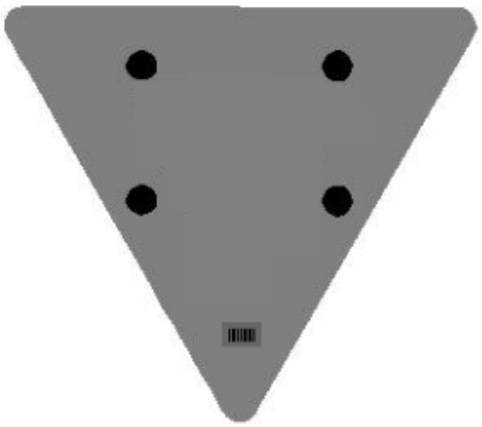


Interstate
Shield



48" Stop

2 Post Signs



SPECIAL PROVISION FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES

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

1.0 DESCRIPTION. Construct a soil, granular, or rock embankment with soil, granular or cohesive pile core and place structure granular backfill, as the Plans require. Construct the embankment according to the requirements of this Special Provision, the Plans, Standard Drawing RGX 100 and 105, and the Standard Specifications, Current Edition.

2.0 MATERIALS.

2.1 Granular Embankment. Conform to Subsection 805.10. When Granular Embankment materials are erodible or unstable according to Subsection 805.03.04, use the Special Construction Methods found in 3.2 of the Special Provision.

2.2 Rock Embankment. Provide durable rock from roadway excavation that consists principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.

2.3 Pile Core. Provide a pile core in the area of the embankments where deep foundations are to be installed unless otherwise specified. The Pile Core is the zone indicated on Standard Drawings RGX 100 and 105 designated as Pile Core. Material control of the pile core area during embankment construction is always required. Proper Pile Core construction is required for installation of foundation elements such as drilled or driven piles or drilled shafts. The type of material used to construct the pile core is as directed in the plans or below. Typically, the pile core area will be constructed from the same material used to construct the surrounding embankment. Pile Core can be classified as one of three types:

A) Pile Core - Conform to Section 206 of the Standard Specifications. Provide pile core material consisting of the same material as the adjacent embankment except the material in the pile core area shall be free of boulders or particle sizes larger than 4 inches in any dimension or any other obstructions that may hinder pile driving operations. If the pile core material hinders pile driving operations, take the appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

B) Granular Pile Core. Granular pile core is required only when specified in the plans. Select a gradation of durable rock to facilitate pile driving that conforms to Subsection 805.11. If granular pile core material hinders pile driving operations, take appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

C) Cohesive Pile Core. Cohesive Pile Core is required only when specified in the plans. Conform to Section 206 of the Standard Specifications and use soil with at least 50 percent passing a No. 4 sieve having a minimum Plasticity Index (PI) of 10. In addition, keep the cohesive pile core free of boulders, larger than 4 inches in any dimension, or any other obstructions, which would interfere with drilling operations. If cohesive pile core material interferes with drilling operations, take appropriate means necessary to maintain

excavation stability, at no expense to the Department.

2.4 Structure Granular Backfill. Conform to Subsection 805.11

2.5 Geotextile Fabric. Conform to Type I or Type IV in Section 214 and 843.

3.0 CONSTRUCTION.

3.1 General. Construct roadway embankments at end bents according to Section 206 and in accordance with the Special Provision, the Plans, and Standard Drawings for the full embankment section. In some instances, granular or rock embankment will be required for embankment construction for stability purposes, but this special provision does not prevent the use of soil when appropriate. Refer to the plans for specific details regarding material requirements for embankment construction.

Place and compact the pile core and structure granular backfill according to the applicable density requirements for the project. If the embankment and pile core are dissimilar materials (i.e., a granular pile core is used with a soil embankment or a cohesive pile core is used with a granular embankment), a Geotextile Fabric, Type IV, will be required between the pile core and embankment in accordance with Sections 214 and 843 of the Standard Specifications.

When granular or rock embankment is required for embankment construction, conform to the general requirements of Subsection 206.03.02 B. In addition, place the material in no greater than 2-foot loose lifts and compact with a vibrating smooth wheel roller capable of producing a minimum centrifugal force of 15 tons. Apply these requirements to the full width of the embankment for a distance of half the embankment height or 50 feet, whichever is greater, as shown on Standard Drawing RGX-105.

When using granular pile core, install 8-inch perforated underdrain pipe at or near the elevation of the original ground in the approximate locations depicted on the standard drawing, and as the Engineer directs, to ensure positive drainage of the embankment. Wrap the perforated pipe with a fabric of a type recommended by the pipe manufacturer.

After constructing the embankment, excavate for the end bent cap, drive piling, install shafts or other foundation elements, place the mortar bed, construct the end bent, and complete the embankment to finish grade according to the construction sequence shown on the Plans or Standard Drawings and as specified hereinafter.

Certain projects may require widening of existing embankments and the removal of substructures. Construct embankment according to the plans. Substructure removal shall be completed according to the plans and Section 203. Excavation may be required at the existing embankment in order to place the structure granular backfill as shown in the Standard Drawings.

After piles are driven or shafts installed (see design drawings), slope the bottom of the excavation towards the ends of the trench as noted on the plans for drainage. Using a separate pour, place concrete mortar, or any class concrete, to provide a base for forming and placing the cap. Place side forms for the end bent after the mortar has set sufficiently to support workmen and forms without being disturbed.

Install 4-inch perforated pipe in accordance with the plans and Standard Drawings. In the event slope protection extends above the elevation of the perforated pipe, extend the pipe through the slope protection.

After placing the end bent cap and achieving required concrete cylinder strengths, remove adjacent forms and fill the excavation with compacted structure granular backfill material (maximum 1’ loose lifts) to the level of the berm prior to placing beams for the bridge. Place Type IV geotextile fabric between embankment material and structure granular backfill. After completing the end bent backwall, or after completing the span end

wall, place the compacted structure granular backfill (maximum 1' loose lifts) to subgrade elevation. If the original excavation is enlarged, fill the entire volume with compacted structure granular backfill (maximum 1' loose lifts) at no expense to the Department. Do not place backfill before removing adjacent form work. Place structure granular backfill material in trench ditches at the ends of the excavation. Place Geotextile Fabric, Type IV over the surface of the compacted structure granular backfill prior to placing aggregate base course.

Tamp the backfill with hand tampers, pneumatic tampers, or other means approved by the Engineer. Thoroughly compact the backfill under the overhanging portions of the structure to ensure that the backfill is in intimate contact with the sides of the structure.

Do not apply seeding, sodding, or other vegetation to the exposed granular embankment.

3.2 Special Construction Methods. Erodible or unstable materials may erode even when protected by riprap or channel lining; use the special construction method described below when using these materials.

Use fine aggregates or friable sandstone granular embankment at "dry land" structures only. Do not use them at stream crossings or locations subject to flood waters.

For erodible or unstable materials having 50 percent or more passing the No. 4 sieve, protect with geotextile fabric. Extend the fabric from the original ground to the top of slope over the entire area of the embankment slopes on each side of, and in front of, the end bent. Cover the fabric with at least 12 inches of non-erodible material.

For erodible or unstable materials having less than 50 percent passing a No. 4 sieve, cover with at least 12 inches of non-erodible material.

Where erodible or unstable granular embankment will be protected by riprap or channel lining, place Type IV geotextile fabric between the embankment and the specified slope protection.

4.0 MEASUREMENT.

4.1 Granular Embankment. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment any Granular Embankment that is not called for in the plans.

The Department will not measure for payment any special construction caused by using erodible or unstable materials and will consider it incidental to the Granular Embankment regardless of whether the erodible or unstable material was specified or permitted.

4.2 Rock Embankment. The Department will not measure for payment any rock embankment and will consider it incidental to roadway excavation or embankment in place, as applicable. Rock embankments will be constructed using granular embankment on projects where there is no available rock present within the excavation limits of the project.

4.3 Pile Core. Pile core will be measured and paid under roadway excavation or embankment in place, as applicable. The Department will not measure the pile core for separate payment. The Department will not measure for payment the 8-inch perforated underdrain pipe and will consider it incidental to the Pile Core.

4.4 Structure Granular Backfill. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure any additional material required for backfill outside the limits shown on the Plans and Standard Drawings for payment and will

consider it incidental to the work.

The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Structure Granular Backfill.

4.5 Geotextile Fabric. The Department will not measure the quantity of fabric used for separating dissimilar materials when constructing the embankment and pile core and will consider it incidental to embankment construction.

The Department will not measure for payment the Geotextile Fabric used to separate the Structure Granular Backfill from the embankment and aggregate base course and will consider it incidental to Structure Granular Backfill.

The Department will not measure for payment the Geotextile Fabric required for construction with erodible or unstable materials and will consider it incidental to embankment construction.

4.6 End Bent. The Department will measure the quantities according to the Contract. The Department will not measure furnishing and placing the 2-inch mortar or concrete bed for payment and will consider it incidental to the end bent construction.

4.7 Structure Excavation. The Department will not measure structure excavation on new embankments for payment and will consider it incidental to the Structure Granular Backfill or Concrete as applicable.

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

Code	Pay Item	Pay Unit
02223	Granular Embankment	Cubic Yards
02231	Structure Granular Backfill	Cubic Yards

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

September 16, 2016

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

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

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.

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.

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).

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.

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.

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.

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 contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 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.

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.

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 contacting 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 administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

Revised: January 25, 2017

Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

No present or former public servant shall, within six (6) months following termination of his office or employment, accept employment, compensation, or other economic benefit from any person or business that contracts or does business with, or is regulated by, the state in matters in which he was directly involved during the last thirty-six (36) months of his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, or for which he received, prior to his state employment, a professional degree or license, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his tenure in state government. This subsection shall not prohibit the performance of ministerial functions, including but not limited to filing tax returns, filing applications for permits or licenses, or filing incorporation papers, nor shall it prohibit the former officer or public servant from receiving public funds disbursed through entitlement programs.

KRS 11A.040 (9) states:

A former public servant shall not represent a person or business before a state agency in a matter in which the former public servant was directly involved during the last thirty-six (36) months of his tenure, for a period of one (1) year after the latter of:

a) The date of leaving office or termination of employment; or
b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, 3 Fountain Place, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: January 27, 2017

"General Decision Number: KY20190038 09/27/2019

Superseded General Decision Number: KY20180100

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: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth

in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate,if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	02/15/2019
2	09/27/2019

BRIN0004-003 06/01/2017

BRECKENRIDGE COUNTY

	Rates	Fringes
BRICKLAYER	$ 26.80	12.38

BRKY0001-005 06/01/2017

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

	Rates	Fringes
BRICKLAYER	$ 26.80	12.38

BRKY0002-006 06/01/2017

BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

	Rates	Fringes

BRICKLAYER.....$ 27.81 13.01

BRKY0007-004 06/01/2017

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

	Rates	Fringes
BRICKLAYER	$ 32.98	19.02

BRKY0017-004 06/01/2017

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

	Rates	Fringes
BRICKLAYER	$ 26.47	12.76

CARP0064-001 05/01/2015

	Rates	Fringes
CARPENTER	$ 27.50	16.06
Diver	$ 41.63	16.06
PILEDRIVERMAN	$ 27.75	16.06

ELEC0212-008 06/04/2018

BRACKEN, GALLATIN and GRANT COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 28.39	18.98

ELEC0212-014 11/26/2018

BRACKEN, GALLATIN & GRANT COUNTIES:

	Rates	Fringes
Sound & Communication Technician	$ 24.35	10.99

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* ELEC0317-012 06/01/2019

BOYD, CARTER, ELLIOT & ROWAN COUNTIES:

	Rates	Fringes
ELECTRICIAN (Wiremen)		
Electrician	$ 34.35	25.70

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* ELEC0369-007 05/28/2019

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	$ 32.44	17.22

ELEC0575-002 12/31/2018

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 32.75	16.69

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* ENGI0181-018 07/01/2019

	Rates	Fringes
POWER EQUIPMENT OPERATOR		

GROUP 1	$ 33.30	16.50
GROUP 2	$ 30.44	16.50
GROUP 3	$ 30.89	16.50
GROUP 4	$ 30.12	16.50

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Cherry Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loaders; Grade-All; Gurries; Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Conrete Pump; Skid

Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points; & Whirley Oiler

GROUP 3 - All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling 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.

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* IRON0044-009 06/01/2019

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	$ 28.00	21.20
Structural	$ 29.47	21.20

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* IRON0070-006 06/01/2019

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, Stampling Ground & Woodlake);

	Rates	Fringes
IRONWORKER	$ 29.68	22.75

IRON0769-007 06/01/2019

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	$ 32.00	25.95
ZONE 2	$ 32.40	25.95
ZONE 3	$ 34.00	25.95

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 07/01/2018

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	$ 23.07	14.21
GROUP 2	$ 23.32	14.21
GROUP 3	$ 23.37	14.21
GROUP 4	$ 23.97	14.21

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; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0189-008 07/01/2018

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

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.07	14.21
GROUP 2	$ 23.32	14.21
GROUP 3	$ 23.37	14.21
GROUP 4	$ 23.97	14.21

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; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler;

Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0189-009 07/01/2018

BRECKINRIDGE & GRAYSON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 23.07	14.21
GROUP 2	$ 23.32	14.21
GROUP 3	$ 23.37	14.21
GROUP 4	$ 23.97	14.21

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; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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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 06/01/2018

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

	Rates	Fringes
Plumber and Steamfitter	$ 36.00	20.23

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 08/01/2019

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	$ 35.77	20.78

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

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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 Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL 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
2.9%	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 Greenup County.

PART IV

INSURANCE

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

PART V

BID ITEMS

191062

PROPOSAL BID ITEMS

Report Date 10/2/19

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	4,527.00	TON		$	
0020	00100		ASPHALT SEAL AGGREGATE	34.00	TON		$	
0030	00103		ASPHALT SEAL COAT	4.00	TON		$	
0040	00190		LEVELING & WEDGING PG64-22	74.00	TON		$	
0050	00212		CL2 ASPH BASE 1.00D PG64-22	3,868.00	TON		$	
0060	00214		CL3 ASPH BASE 1.00D PG64-22	207.00	TON		$	
0070	00216		CL3 ASPH BASE 1.00D PG76-22	103.00	TON		$	
0080	00301		CL2 ASPH SURF 0.38D PG64-22	594.00	TON		$	
0090	00356		ASPHALT MATERIAL FOR TACK	13.00	TON		$	
0100	00387		CL3 ASPH SURF 0.38B PG76-22	262.00	TON		$	
0110	02101		CEM CONC ENT PAVEMENT-8 IN	117.00	SQYD		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0120	00078		CRUSHED AGGREGATE SIZE NO 2	8,003.00	TON		$	
0130	01001		PERFORATED PIPE-6 IN	1,219.00	LF		$	
0140	01011		NON-PERFORATED PIPE-6 IN	152.00	LF		$	
0150	01029		PERF PIPE HEADWALL TY 3-6 IN	3.00	EACH		$	
0160	01314		PLUG PIPE	1.00	EACH		$	
0170	01585		REMOVE DROP BOX INLET	1.00	EACH		$	
0180	01691		FLUME INLET TYPE 2	3.00	EACH		$	
0190	01786		FILL AND CAP MANHOLE	1.00	EACH		$	
0200	01811		STANDARD CURB AND GUTTER MOD	210.00	LF		$	
0210	01875		STANDARD HEADER CURB	126.00	LF		$	
0220	01891		ISLAND HEADER CURB TYPE 2	46.00	LF		$	
0230	01904		REMOVE CURB	390.00	LF		$	
0240	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	13.00	EACH		$	
0250	01990		DELINEATOR FOR BARRIER WALL-B/W	32.00	EACH		$	
0260	02014		BARRICADE-TYPE III	8.00	EACH		$	
0270	02058		REMOVE PCC PAVEMENT	615.00	SQYD		$	
0280	02159		TEMP DITCH	2,116.00	LF		$	
0290	02160		CLEAN TEMP DITCH	1,058.00	LF		$	
0300	02200		ROADWAY EXCAVATION	225,576.00	CUYD		$	
0310	02242		WATER	682.00	MGAL		$	
0320	02274		FENCE-6 FT CHAIN LINK	139.00	LF		$	
0330	02351		GUARDRAIL-STEEL W BEAM-S FACE	750.00	LF		$	
0340	02360		GUARDRAIL TERMINAL SECTION NO 1	3.00	EACH		$	
0350	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	5.00	EACH		$	
0360	02367		GUARDRAIL END TREATMENT TYPE 1	4.00	EACH		$	
0370	02381		REMOVE GUARDRAIL	357.00	LF		$	
0380	02391		GUARDRAIL END TREATMENT TYPE 4A	2.00	EACH		$	
0390	02429		RIGHT-OF-WAY MONUMENT TYPE 1	22.00	EACH		$	
0400	02432		WITNESS POST	22.00	EACH		$	

PROPOSAL BID ITEMS

191062

Report Date 10/2/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	02488		CHANNEL LINING CLASS IV	23,518.00	CUYD		$	
0420	02545		CLEARING AND GRUBBING 17.32 ACRES	1.00	LS		$	
0430	02562		TEMPORARY SIGNS	750.00	SQFT		$	
0440	02585		EDGE KEY	166.00	LF		$	
0450	02596		FABRIC-GEOTEXTILE TYPE I	36,648.00	SQYD		$	
0460	02598		FABRIC-GEOTEXTILE TYPE III	5,386.00	SQYD		$	
0470	02599		FABRIC-GEOTEXTILE TYPE IV	41,425.00	SQYD		$	
0480	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0490	02671		PORTABLE CHANGEABLE MESSAGE SIGN	8.00	EACH		$	
0500	02690		SAFELOADING	210.00	CUYD		$	
0510	02701		TEMP SILT FENCE	2,116.00	LF		$	
0520	02703		SILT TRAP TYPE A	17.00	EACH		$	
0530	02704		SILT TRAP TYPE B	17.00	EACH		$	
0540	02705		SILT TRAP TYPE C	17.00	EACH		$	
0550	02706		CLEAN SILT TRAP TYPE A	17.00	EACH		$	
0560	02707		CLEAN SILT TRAP TYPE B	17.00	EACH		$	
0570	02708		CLEAN SILT TRAP TYPE C	17.00	EACH		$	
0580	02720		SIDEWALK-4 IN CONCRETE	96.00	SQYD		$	
0590	02726		STAKING	1.00	LS		$	
0600	02731		REMOVE STRUCTURE	1.00	LS		$	
0610	03171		CONCRETE BARRIER WALL TYPE 9T	120.00	LF		$	
0620	05950		EROSION CONTROL BLANKET	491.00	SQYD		$	
0630	05952		TEMP MULCH	54,854.00	SQYD		$	
0640	05953		TEMP SEEDING AND PROTECTION	41,140.00	SQYD		$	
0650	05963		INITIAL FERTILIZER	3.00	TON		$	
0660	05964		MAINTENANCE FERTILIZER	4.00	TON		$	
0670	05985		SEEDING AND PROTECTION	62,632.00	SQYD		$	
0680	05990		SODDING	803.00	SQYD		$	
0690	05998		SPREADING STOCKPILED TOPSOIL	501.00	CUYD		$	
0700	06514		PAVE STRIPING-PERM PAINT-4 IN	12,127.00	LF		$	
0710	06542		PAVE STRIPING-THERMO-6 IN W	1,199.00	LF		$	
0720	06543		PAVE STRIPING-THERMO-6 IN Y	887.00	LF		$	
0730	06568		PAVE MARKING-THERMO STOP BAR-24IN	114.00	LF		$	
0740	06572		PAVE MARKING-DOTTED LANE EXTEN	83.00	LF		$	
0750	06573		PAVE MARKING-THERMO STR ARROW	9.00	EACH		$	
0760	06574		PAVE MARKING-THERMO CURV ARROW	18.00	EACH		$	
0770	06575		PAVE MARKING-THERMO COMB ARROW	1.00	EACH		$	
0780	08901		CRASH CUSHION TY VI CLASS BT TL2	2.00	EACH		$	
0790	10020NS		FUEL ADJUSTMENT	57,487.00	DOLL	$1.00	$	$57,487.00
0800	10030NS		ASPHALT ADJUSTMENT	19,970.00	DOLL	$1.00	$	$19,970.00
0810	20191ED		OBJECT MARKER TY 3	4.00	EACH		$	
0820	20432ES112		REMOVE CRASH CUSHION	2.00	EACH		$	
0830	20550ND		SAWCUT PAVEMENT	760.00	LF		$	
0840	21289ED		LONGITUDINAL EDGE KEY	996.00	LF		$	
0850	23055N		REMOVE BUILDING	1.00	LS		$	
0860	23274EN11F		TURF REINFORCEMENT MAT 1	3,092.00	SQYD		$	
0870	23875NC		REMOVE THERMOPLASTIC ARROWS	6.00	EACH		$	
0880	24489EC		INLAID PAVEMENT MARKER	14.00	EACH		$	

191062

PROPOSAL BID ITEMS

Report Date 10/2/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0890	24544EC		REMOVE STOP BAR	38.00	LF		$	
0900	24640ED		OBJECT MARKER TYPE 1	2.00	EACH		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0910	00441		ENTRANCE PIPE-18 IN	38.00	LF		$	
0920	00445		ENTRANCE PIPE-30 IN	72.00	LF		$	
0930	00464		CULVERT PIPE-24 IN	83.00	LF		$	
0940	00468		CULVERT PIPE-36 IN	127.00	LF		$	
0950	00469		CULVERT PIPE-42 IN	180.00	LF		$	
0960	00522		STORM SEWER PIPE-18 IN	26.00	LF		$	
0970	00524		STORM SEWER PIPE-24 IN	420.00	LF		$	
0980	00530		STORM SEWER PIPE-48 IN	45.00	LF		$	
0990	01204		PIPE CULVERT HEADWALL-18 IN	1.00	EACH		$	
1000	01208		PIPE CULVERT HEADWALL-24 IN	5.00	EACH		$	
1010	01212		PIPE CULVERT HEADWALL-36 IN	2.00	EACH		$	
1020	01214		PIPE CULVERT HEADWALL-42 IN	2.00	EACH		$	
1030	01216		PIPE CULVERT HEADWALL-48 IN	2.00	EACH		$	
1040	01450		S & F BOX INLET-OUTLET-18 IN	1.00	EACH		$	
1050	01452		S & F BOX INLET-OUTLET-30 IN	4.00	EACH		$	
1060	01453		S & F BOX INLET-OUTLET-36 IN	2.00	EACH		$	
1070	01480		CURB BOX INLET TYPE B	1.00	EACH		$	
1080	01496		DROP BOX INLET TYPE 3	1.00	EACH		$	
1090	01497		DROP BOX INLET TYPE 3 MOD	3.00	EACH		$	
1100	01539		DROP BOX INLET TYPE 7 MOD	1.00	EACH		$	
1110	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	3,089.00	SQYD	$2.00	$	$6,178.00
1120	08100		CONCRETE-CLASS A	3.75	CUYD		$	
1130	22581EN		ENTRANCE PIPE-36 IN	36.00	LF		$	
1140	23124EN		BORE AND JACK PIPE-48 IN	293.00	LF		$	
1150	24814EC		PIPELINE INSPECTION	881.00	LF		$	

Section: 0004 - BRIDGE -NO. 27626

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1160	02273		FENCE-4 FT CHAIN LINK	744.00	LF		$	
1170	02274		FENCE-6 FT CHAIN LINK	790.00	LF		$	
1180	02998		MASONRY COATING	3,762.00	SQYD		$	
1190	03299		ARMORED EDGE FOR CONCRETE	68.00	LF		$	
1200	08002		STRUCTURE EXCAV-SOLID ROCK	580.00	CUYD		$	
1210	08003		FOUNDATION PREPARATION	1.00	LS		$	
1220	08017		REINF CONC SLOPE WALL-8 IN	183.00	SQYD		$	
1230	08033		TEST PILES	780.00	LF		$	
1240	08039		PRE-DRILLING FOR PILES	170.00	LF		$	
1250	08051		PILES-STEEL HP14X89	6,930.00	LF		$	
1260	08095		PILE POINTS-14 IN	179.00	EACH		$	

PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1270	08100		CONCRETE-CLASS A	1,823.00	CUYD		$	
1280	08104		CONCRETE-CLASS AA	1,669.00	CUYD		$	
1290	08140		MECHANICAL REINF COUPLER #5 EPOXY COATED	576.00	EACH		$	
1300	08150		STEEL REINFORCEMENT	358,440.00	LB		$	
1310	08151		STEEL REINFORCEMENT-EPOXY COATED	572,860.00	LB		$	
1320	08160		STRUCTURAL STEEL 2,204,000 LB	1.00	LS		$	
1330	08170		SHEAR CONNECTORS 15,430 LB	1.00	LS		$	
1340	08472		EXPANSION DAM-4 IN NEOPRENE	80.00	LF		$	
1350	08474		EXPANSION DAM-5 IN NEOPRENE	40.00	LF		$	
1360	20209EP69		GRANULAR PILE CORE	75.00	CUYD		$	
1370	21532ED		RAIL SYSTEM TYPE III	2,266.00	LF		$	
1380	23026ED		ARCHITECTURAL TREATMENT	1,200.00	SQYD		$	
1390	23813EC		DECK DRAIN	22.00	EACH		$	
1400	24404EC		MECHANICAL REINF COUPLER-#7 EPOXY COATED	48.00	EACH		$	
1410	24596EN		GRANULAR BACKFILL	420.00	CUYD		$	
1420	24614EC		DISC EXPANSION BEARING	50.00	EACH		$	

Section: 0005 - MISCELLANEOUS-UTILITY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1430	01875		STANDARD HEADER CURB	488.00	LF		$	
1440	02720		SIDEWALK-4 IN CONCRETE	187.00	SQYD		$	
1450	05953		TEMP SEEDING AND PROTECTION	1,638.00	SQYD		$	
1460	21741NC		MAINTAIN & CONTROL TRAFFIC	1.00	EACH		$	

Section: 0006 - SEWER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1470	15000		S BYPASS PUMPING	1.00	EACH		$	
1480	15051		S FORCE MAIN PE/PLASTIC 04 INCH	386.00	LF		$	
1490	15073		S FORCE MAIN TIE-IN 04 INCH	1.00	EACH		$	
1500	15086		S LATERAL CLEANOUT	1.00	EACH		$	
1510	15089		S LATERAL SHORT SIDE 04 INCH	4.00	EACH		$	
1520	15090		S LATERAL SHORT SIDE 06 INCH	1.00	EACH		$	
1530	15092		S MANHOLE	11.00	EACH		$	
1540	15093		S MANHOLE ABANDON/REMOVE	6.00	EACH		$	
1550	15095		S MANHOLE CASTING STANDARD	7.00	EACH		$	
1560	15096		S MANHOLE CASTING WATERTIGHT	4.00	EACH		$	
1570	15099		S MANHOLE TAP EXISTING	1.00	EACH		$	
1580	15114		S PIPE PVC 12 INCH	1,963.00	LF		$	
1590	15119		S PUMP STATION	1.00	EACH		$	
1600	15122		S STRUCTURE REMOVAL	4.00	EACH		$	
1610	15136		S LATERAL LOCATE	11.00	EACH		$	

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PROPOSAL BID ITEMS

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Section: 0007 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1620	06406		SBM ALUM SHEET SIGNS .080 IN	507.00	SQFT		$	
1630	06410		STEEL POST TYPE 1	1,170.00	LF		$	
1640	21373ND		REMOVE SIGN	25.00	EACH		$	
1650	24631EC		BARCODE SIGN INVENTORY	126.00	EACH		$	
1660	24955ED		REMOVE SIGNAL EQUIPMENT	1.00	EACH		$	

Section: 0008 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1670	14009		W ENCASEMENT STEEL BORED RANGE 4	65.00	LF		$	
1680	14019		W FIRE HYDRANT ASSEMBLY	2.00	EACH		$	
1690	14021		W FIRE HYDRANT REMOVE	3.00	EACH		$	
1700	14030		W METER RELOCATE	1.00	EACH		$	
1710	14035		W PIPE DUCTILE IRON 04 INCH	10.00	LF		$	
1720	14039		W PIPE DUCTILE IRON 12 INCH	2,094.00	LF		$	
1730	14085		W SERV PE/PLST SHORT SIDE 3/4 IN	9.00	EACH		$	
1740	14090		W TAPPING SLEEVE AND VALVE SIZE 2	2.00	EACH		$	
1750	14093		W TIE-IN 04 INCH	1.00	EACH		$	
1760	14120		W VALVE CUT-IN 12 INCH	2.00	EACH		$	
1770	14144		W LINE MARKER	2.00	EACH		$	
1780	14156		W METER REMOVE	5.00	EACH		$	
1790	24569ED		PRESSURE REDUCING VALVE 3/4 IN	9.00	EACH		$	

Section: 0009 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1800	02568		MOBILIZATION	1.00	LS		$	
1810	02569		DEMOBILIZATION	1.00	LS		$	