CALL NO. 200

CONTRACT ID. 191044

OWSLEY - JACKSON COUNTIES

FED/STATE PROJECT NUMBER 121GR19D044-STP

DESCRIPTION LONDON-BOONEVILLE ROAD(KY-30)

WORK TYPE GRADE, DRAIN & SURFACE WITH BRIDGE

PRIMARY COMPLETION DATE 340 WORKING DAYS

LETTING DATE: August 23,2019

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME August 23,2019. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

DBE CERTIFICATION REQUIRED - 8.50%

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

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SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 11

CONTRACT ID - 191044

121GR19D044-STP

COUNTY - JACKSON

PCN - DE05500301944
STP 0302(025)

LONDON-BOONEVILLE ROAD(KY-30) (MP 9.121) IMPROVE KY-30 FROM US-421 TO THE OWSLEY COUNTY LINE (MP 17.517), A DISTANCE OF 09.00 MILES.GRADE, DRAIN & SURFACE WITH BRIDGE SYP NO. 11-00278.30.

GEOGRAPHIC COORDINATES LATITUDE 37:23:44.00 LONGITUDE 83:50:42.00

COUNTY - OWSLEY

PCN - DE09500301944
STP 0302(025)

LONDON-BOONEVILLE ROAD(KY-30) (MP 0.000) IMPROVE KY-30 FROM KY-847 IN OWSLEY COUNTY TO JACKSON COUNTY LINE. (MP 5.132), A DISTANCE OF 04.00 MILES.GRADE & DRAIN WITH ASPHALT SURFACE SYP NO. 10-00279.61.

GEOGRAPHIC COORDINATES LATITUDE 37:23:44.00 LONGITUDE 83:50:42.00

COMPLETION DATE(S):

340 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 our 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.

TRAINEES

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

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.

MATERIAL TRANSFER VEHICLE (MTV)

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

SPECIAL NOTE FOR EXPERIMENTAL KYCT AND HAMBURG TESTING

1.0 General

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

2.0 Equipment

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

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

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

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

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

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

3.0 Testing Requirements

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

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

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

3.2.2 Number of Specimens and Conditioning. Fabricate specimens in accordance with the Kentucky Method for KYCT Index Testing. Contrary to the method, fabricate a minimum of 3 and up to 6 test specimens. The specimens shall be compacted at the temperature in accordance to KM 64-411. KYCT mix design specimens shall be short-term aged conditioned for four hours at compaction temperature in accordance to KM 64-411. Plant produced bituminous material will not be required for age conditioning and shall be fabricated immediately after the gyratory acceptance specimens have been fabricated. An acceptable transport container will be required to prevent the asphalt mixture from losing heat and to maintain the compaction temperature of the asphalt mixture until the KYCT gyratory samples can be fabricated. This will eliminate reheating of the asphalt mixture. To insure confidence and reliability of the test results provided by KYCT testing and Hamburg testing, reheating of the asphalt mixture is strongly discouraged. If reheating does occur, provide documentation on the Asphalt Mixtures Acceptance Workbook (AMAW).

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

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

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

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

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

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

4.0 Data

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

5.0 KYCT Video Demonstration

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

6.0 Payment

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

June 3, 2019

SPECIAL NOTE FOR HMA ELECTRONIC DELIVERY MANAGEMENT SYSTEM
(HMA e-Ticketing)

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. Incorporate a GPS Fleet Management System for all HMA delivered to the project in order to monitor, track, and report loads of HMA during the construction processes from the point of measurement and loading to the point of incorporation to the project.

2.0 MATERIALS AND EQUIPMENT. Submit to the Engineer for approval, no fewer than 30 days prior to HMA placement activities, a GPS fleet management system supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verifications, and data management and processing as needed during the Project to maintain equipment.

Provide operator settings, user manuals, training videos, and required viewing/export software for review. Provide equipment that will meet the following:

1. A wireless fleet management or GPS device that is capable of tracking all delivery trucks (both company-owned and third-party) must be installed on all trucks and equipment (dump trucks, belly dumps, side-load dumps, transfer vehicles, pavers, or any other trucks/vehicles) used to transfer and incorporate HMA into the project. KYTC personnel shall have the ability to access Real Time monitoring through the use of a mobile device such as an iPad, smartphone, etc.

2. The fleet management system shall be fully integrated with the Contractor's Load Read-Out scale system at the HMA plant site.

3. The fleet management system shall have the ability to measure and track vehicles and their contents (weights and material types) continuously from the plant site to the project site. The system shall have internal battery backup capabilities due to loss of power, and have the ability to store data if GPS connectivity is lost and transmit that same data when unit re-establishes connectivity. To be considered continuous, no two data points shall be more than 60 seconds apart unless the vehicle is stopped. Duration of stop time for any reason shall be recorded.

3.0 CONSTRUCTION. Provide the Engineer with the manufacturer's specifications and all required documentation for data access at the pre-construction conference.

A. Construction Requirements

1. Install and operate equipment in accordance with the manufacturer's specifications.

2. Verify the GPS is working within the requirements of this Special Note.

B. Data Deliverables

Provide to the Engineer a means in which to gather report summaries by way of iOS apps, web pages, or any other method at the disposal of the Engineer. The Engineer may request data at any time during paving operations.

1. Real-time Continuous Data Items

Provide the Engineer access to a GIS map-based data viewer which displays the following information in real-time with a web-based system compatible with iOS and Windows environments.

- Each Truck
  - UniqueTruck ID
  - Truck status
    - Time At Source
    - Time At Destination
    - Time At Paver
    - Time At Scale
    - Time to and from plant/job
    - Time Stopped with Engine Running
  - Time of last transmission
  - Location (Latitude and Longitude in decimal degrees to nearest 0.0000001) every 60 seconds
  - Description of Material being transported (i.e. asphalt base, asphalt surface)
  - Mix Design Number
  - Net Weight of material being transported to the nearest 0.01 ton
  - Running Daily Total of Net Weight of material being transported to nearest 0.01 ton.
  - Project Number

- Scale Location
- Project Location
- Point of Delivery (i.e. paver)

2. Daily Summary

The following summary information shall be provided to the Engineer electronically within 4 hours of beginning operations on the next working day

- For each Material
  - List of Individual Loads
    - Contractor Name
    - Project Number
    - Unique Truck ID
    - Net Weight For Payment (nearest 0.01 tons)
    - Date
    - Mix Temperature at Time of Loading, Fahrenheit (to be key entered by plant)
    - Time Loaded
    - Time Unloaded
    - Delivery Location (Latitude/Longitude in decimal degrees to nearest 0.0000001)
- For each Bid Item
    - Total Quantity for Payment (nearest 0.01 tons)

4.0 MEASUREMENT. The Department will measure the HMA electronic delivery management system as a lump sum item.

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

1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.
2. Delays due to GPS satellite reception of signals or equipment breakdowns will not be considered justification for contract modifications or contract extensions.
3. Payment will be full compensation for costs related to providing the GPS system, including all equipped pavers and transfer vehicles, integration with plant load-out systems, and any software required for the construction and reporting process. All quality control procedures including the GPS systems representative's technical support and on-site training shall be included in the Contract lump sum price.

Code	Pay Item	Pay Unit
24986EC	HMA ELECTRONIC DELIVERY MANAGEMENT SYSTEM	LS

SPECIAL NOTE FOR INLAID PAVEMENT MARKERS

I. DESCRIPTION

Except as provided herein, perform all work in accordance with the Department's Standard and Supplemental Specifications and applicable Standard and Sepia Drawings, current editions. Article references are to the Standard Specifications. This work shall consist of:

(1) Maintain and Control Traffic; and (2) furnish and install Inlaid Pavement Markers (IPMs) in recessed grooves; and (3) any other work as specified by these notes and the Contract.

II. MATERIALS

The Department will sample all materials in accordance with the Department's Sampling Manual. Make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

A. Maintain and Control Traffic. See Traffic Control Plan.

B. Markers. Provide reflective lenses with depth control breakaway positioning tabs. Before furnishing the markers, provide to the Engineer the manufacturer's current recommendations for adhesives and installation procedures. Use one brand and design throughout the project. Use markers meeting the specifications in the table below.

SPECIFICATIONS FOR HOUSING AND REFLECTOR	
Material:	Polycarbonate Plastic
Weight:	Housing 2.00 oz.
	Reflector 2.00oz.
Housing Size:	5.00" x 3.00" x 0.70" high
Specific Intensity of Reflectivity at 0.2° Observation Angle	
White:	3.0 at 0°entrance angle
	1.2 at 20°entrance angle
Yellow:	60% of white values
Red:	25% of white values

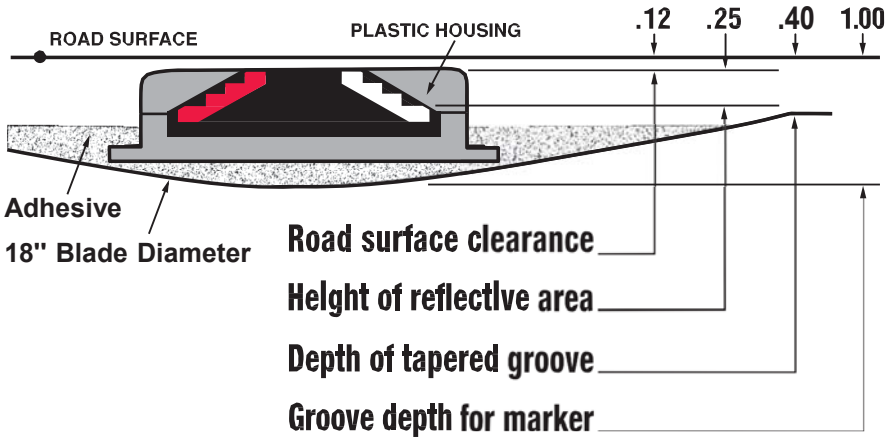
C. **Adhesives.** Use adhesives that conform to the manufacturer's recommendations.

III. CONSTRUCTION

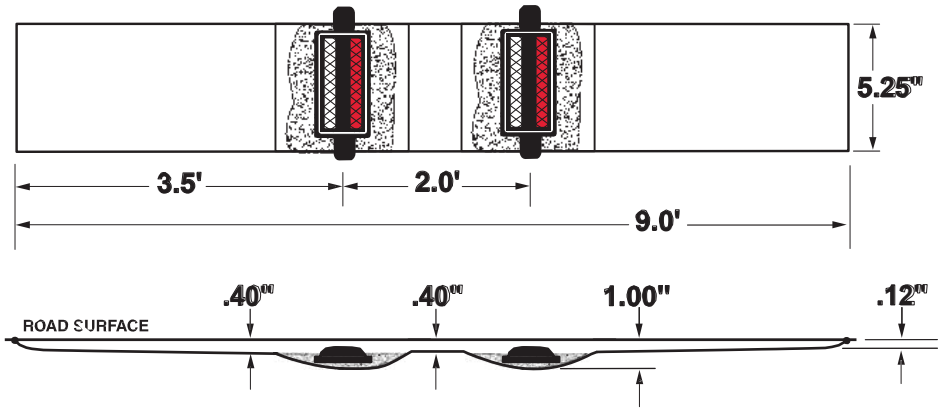
A. **Maintain and Control Traffic.** See Traffic Control Plan.

B. **Installation.** Install IPMs in recessed grooves cut into the final course of pavement according to the manufacturer's recommendations. Do not cut the grooves until the pavement has cured sufficiently to prevent damaging the pavement. Cut installation grooves using diamond blades on saws that accurately control groove dimensions. Remove all dirt, grease, oil, loose or unsound layers, and any other material from the marker area which would reduce the bond of the adhesive. Maintain pavement surfaces in a clean condition until placing markers.

Prepare the pavement surfaces, and install the markers in the recessed groove according to the drawing below. Use an approved snowplowable epoxy adhesive. Ensure that the adhesive bed area is equal to the bottom area of the marker, and apply adhesive in sufficient quantity to force excess out around the entire perimeter of the marker. Use materials, equipment, and construction procedures that ensure proper adhesion of the markers to the pavement surface according to the manufacturer's recommendations. Remove all excess adhesive from in front of the reflective faces. If any adhesive or foreign matter cannot be removed from the reflective faces, or if any marker fails to properly adhere to the pavement surface, remove and replace the marker at no additional cost to the Department.



C. Location and Spacing. Install the markers in the pattern for high reflectivity with two (2) IPMs per groove. Locate and space markers as shown in the current standard drawings or sepias (note: use Inlaid Pavement Markers wherever Type V Pavement Markers are called for). Do not install markers on bridge decks. Do not install a marker on top of a pavement joint or crack. Offset the recessed groove a minimum of **3** inches from any longitudinal pavement joint or crack and at least one inch from the painted stripe, ensuring that the finished line of markers is straight with minimal lateral deviation. Give preference to maintaining the **3**-inch offset between recessed groove and joint as opposed to keeping the line of markers straight.



Place inlaid markers as much in line with existing pavement striping as possible. Place markers installed along an edge line or channelizing line so that the near edge of the plastic housing is no more than one inch from the near edge of the line. Place markers installed along a lane line between and in line with the dashes. Do not place markers over the lines except where the lines deviate visibly from their correct alignment, and then only after obtaining the Engineer's prior approval of the location.

If conflicts between recessed groove placement in relation to pavement joint and striping cannot be resolved, obtain the Engineer's approval to eliminate the marker or revise the alignment.

D. Disposal of Waste. Dispose of all removed pavement, debris, and other waste at sites off the right of way obtained by the Contractor at no additional cost to the Department. See Special Note for waste and Borrow.

E. Restoration. Be responsible for all damage to public and/or private property resulting from the work. Restore all damaged features in like kind materials and design at no additional cost to the Department.

F. On-Site Inspection. Make a thorough inspection of the site prior to submitting a bid and be thoroughly familiar with existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid as evidence of this inspection having been made and will not honor any claims for money or grant Contract time extensions resulting from site conditions.

G. Caution. Do not take information shown on the drawings and in this proposal and the types and quantities of work listed as an accurate or complete evaluation of the material and conditions to be encountered during construction, but consider the types and quantities of work listed as approximate only. The bidder must draw his own conclusion as to the conditions encountered. The Department does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation or extension of Contract time if the conditions encountered are not in accordance with the information shown.

IV. MEASUREMENT

A. Maintain and Control Traffic. See Traffic Control Plan.

B. "INLAID PAYMENT MARKER" shall be measured as each. One (1) installation of "INLAID PAVEMENT MARKER" will consist of grooving the pavement, removing cuttings and debris, preheating pavement to remove moisture, adhesives, and installation of two (2) markers with all lenses in accordance with this note.

Note: Each pay item of Inlaid Pavement Marker will require two markers.

V. PAYMENT

A. Maintain and Control Traffic. See Traffic Control Plan.

B. Inlaid Pavement Markers. The Department will make payment for the completed and accepted quantity of completely installed "INLAID PAVEMENT MARKERS" at the Contract unit price, each. Accept payment as full compensation for all labor, equipment, materials, and incidentals to accomplish this work to the satisfaction of the Engineer. A system of one (1) groove and two (2) markers shall be paid as one "INLAID PAVEMENT MARKER". The bid item "INLAID PAVEMENT MARKER" shall be used regardless of the color and type of lenses required.

SPECIAL NOTE FOR SPRAY APPLIED THERMOPLASTIC PAVEMENT MARKING MATERIALS

I. DESCRIPTION

Except as provided herein, all work shall be performed in accordance with the Department's Standard Specifications, Interim Supplemental Specifications, applicable Standard and Sepia Drawings, applicable Special Provisions and Special Notes, current editions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials and incidentals for the following:

(1) Spray applied thermoplastic pavement marking materials with reflectorized glass beads for permanent applications

II. MATERIALS

A. DROP ON BEADS. Use beads that will ensure the pavement marking material will meet retroreflectivity requirements. The Department will evaluate the beads as part of the marking system through retroreflectivity readings.

B. APPROVAL. Select materials that conform to the composition and physical characteristic requirements below when evaluated in accordance with AASHTO T-250 or other test methods as cited. The Department will sample and evaluate for approval each lot of thermoplastic material delivered for use per contract prior to installation of the thermoplastic material. Do not allow the installation of thermoplastic material until it has been approved by the Division of Materials. Allow the Department a minimum of 10 working days to evaluate and approve thermoplastic material from the date sampled.

C. Composition. Use a maleic-modified glycerol ester resin (alkyd binder) to formulate the thermoplastic material. Ensure the pigment, pre-mix beads, and filler are uniformly dispersed in the resin. Use material that is free from all dirt and foreign material. Provide independent analysis data and certification for each formulation stating the total concentration of each heavy metal present, the test method used for each determination, and compliance to 40 CFR 261 for leachable heavy metals content.

COMPOSITION
(Percentage by Weight)

Component	White	Yellow
Binder, [(1)]	26.0 min.	26.0 min.
Glass Beads (Premixed)	30 - 40	30 - 40
Titanium Dioxide (Rutile, Type II)	10.0 min.	—
Calcium Carbonate & Inert Fillers [(2)]	42.0 max.	50.0 max.
Heavy Metals Content	Comply with 40 CFR 261	Comply with 40 CFR 261

[(1)]Use a binder that consists of a mixture of synthetic resins, at least one being solid at room temperature, and high boiling point plasticizers. Ensure that at least one-third of the binder composition is solid maleic-modified glycerol ester resin and is not less than 8 percent by weight of the entire material formulation. Do not use alkyd binder that contains petroleum based hydrocarbon resins.

[(2)]The manufacturer may choose the amount of calcium carbonate and inert fillers, providing all other requirements of this section are met.

D. Physical Characteristics. For thermoplastic material heated for 4 hours at 425ºF under agitation, conform to the following requirements.

a) Color. As determined with a spectrophotometer using D65 illuminant with a 45 degree entrance angle and 0 degree observation angle geometry.

CIELAB Color Coordinates		
	Yellow	White
Daytime Color (CIELAB) Spectrophotometer using illuminant D65 at 45º illumination and 0º viewing with a 2º observer	L* 81.76 a* 19.79 b* 89.89 Maximum allowable variation 6.0ΔE*	L* 93.51 a* -1.01 b* 0.70 Maximum allowable variation 6.0ΔE*
Nighttime Color (CIELAB) Spectrophotometer using illuminant A at 45º illumination and 0º viewing with a 2º observer	L* 86.90 a* 24.80 b* 95.45 Maximum allowable variation 6.0ΔE*	L* 93.45 a* -0.79 b* 0.43 Maximum allowable variation 6.0ΔE*

b) Set Time. Use material that, when applied at a temperature range of 375 ± 25 ºF and thickness of 60 ± 10 mils, sets to bear traffic in not more than 2 minutes when the air and road surface temperature is approximately ≥ 50 ± 3 ºF, and not more than 10 minutes when the air and road surface temperature is approximately < 50 ± 3 ºF.

c) Softening Point. Ensure that the thermoplastic material has a softening point of 180 ± 15 ºF.

d) Bond Strength. Ensure that the bond strength of the thermoplastic material to concrete exceeds 180 psi.

e) Cracking Resistance at Low Temperature. Ensure that the thermoplastic material shows no cracks when observed from a distance exceeding one foot.

f) Impact Resistance. Ensure the impact resistance of the thermoplastic material is a minimum of 50 inch-pounds.

g) Flash Point. Use thermoplastic material that has a flash point not less than 475 °F.

E. PACKAGING. Package thermoplastic material in suitable 50 pound containers to which the material shall not adhere during shipment or storage. Include a label stating that the thermoplastic material is to be maintained with a temperature range of 350 – 400ºF during application. Provide the thermoplastic material in granular form.

F. SHELF LIFE. Ensure that the thermoplastic material conforms to this section for a period of one year. Replace any thermoplastic material not conforming to the above requirements.

G. MANUFACTURER'S TESTING. Perform testing in accordance with AASHTO T-250 on a minimum of one composite sample per 10,000 pounds, or portion thereof, per lot of thermoplastic produced.

H. CERTIFICATION. Submit manufacturer's certification stating conformance to the requirements of this section for each lot of extruded thermoplastic delivered for use on projects. Clearly state the manufacture, formulation identification, product name, color, date of manufacturer, total quantity of lot produced, actual quantity of thermoplastic material represented, sampling method utilized to obtain the samples, and required manufacturer's testing data for each composite sample tested to represent each lot produced.

III. CONSTRUCTION METHODS

A. SURFACE PREPARATION. The contractor will be required to sweep all pavement surfaces prior to striping and maintain the cleaning operation far enough in advance of the striping operation to prevent any dust from the cleaning operation from mixing with the paint. The sweeper must maintain contact with the roadway. When the Engineer determines abnormal amounts of debris or other material have accumulated beyond the capability of the required sweeping unit which will require shoveling or other means to remove, the Engineer will make arrangements, prior to painting, to have the material removed by the Department.

B. INSTALLATION. Install thermoplastic materials in accordance with Section 714, Durable Pavement Striping, and the following exceptions:

- Install the thermoplastic materials at a minimum thickness of 60 mils.
- Ensure the material temperature is maintained between 350 and 400°F.
- Do not allow the material temperature to exceed 400°F.
- Removal of existing stripe on asphalt surfaces is not required.

C. RETROREFLECTIVITY. The Department will evaluate installed markings in accordance with Section 714.03.06, Proving Period for Durable Markings.

IV. METHOD OF MEASUREMENT

A. ACCEPTANCE AND PAYMENT. The Department will accept spray applied thermoplastic materials based on compliance of the manufacturer's certification and conformance of test results obtained by the Department to the requirements of this special note.

Contrary to Section 714.03.08, Acceptance of Non-Specification Thermoplastic Markings, the Department will not accept non-specification compliant markings. Remove non-specification compliant markings by water blasting. The Department will perform random thickness tests on applied markings to determine compliance to thickness requirements

IV. BASIS OF PAYMENT

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

Code	Pay Item	Pay Unit
24995EC	PAVE STRIPING-SPRAY THERMO-6 IN W	LF
24996EC	PAVE STRIPING-SPRAY THERMO-6 IN Y	LF

The Department will consider payment as full compensation for furnishing all labor, materials, equipment, and incidentals required to construct spray applied thermoplastic pavement markings.

SPECIAL NOTE FOR
TREATMENT OF END BENT OR ABUTMENT BACKFILLS USING GEOTEXTILE REINFORCEMENT AND ELASTIC INCLUSION

May 21, 2013

I. DESCRIPTION

Geotextile Reinforced Backfill and Elastic Inclusion work shall consist of installation of an elasticized Expanded Polystyrene (EPS) and geotextile separation fabric between the back of concrete surfaces and backfill material, in accordance with these specifications and in conformity with manufacturer's recommendations, the lines shown on the plans or as established by the Engineer. It also includes placing Geotextile reinforcement within the granular backfill. Construction shall be in accordance with Special Provision No. 69, Embankment at End Bent Structures, Standard Drawing RGX-100, and Standard Drawing RGX-105 except where the requirement of this note direct otherwise.

II. MATERIALS

(a) **Geotextile Reinforcement:** The Geotextile Reinforcement utilized in the backfill shall be a woven fabric meeting the requirements Type V High Strength Geotextile Fabric of Section 843 of the Standard Specifications except that the Geotextile Reinforcement shall have a minimum Ultimate Strength of 1350 lb/ft and a minimum Strength at 2% strain of 380 lb/ft when tested by ASTM D 4595.

(b) **Elasticized Expanded Polystyrene (EPS):** The EPS shall have a size tolerance of 1/8 inch for each dimension and conform to the following:

Physical Property	**ASTM Test Method**	**Requirements**
Compressive strength	D-1621	720 psf +/-60 psf @10% strain
Water absorption	C-272	Max. 3% by volume
Insect Resistance	D-3345-74	Resistance to ants, termites, etc.

The EPS shall be elasticized, with a linear-elastic stress-strain behavior up to 10 percent strain and linear proportional stress-strain behavior up to 30 percent strain.

The EPS shall contain no chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs) or formaldehyde. It shall be chemically and biologically inert when in contact with acidic and alkaline soils. It shall be treated to prevent insect attack.

Materials shall withstand temperature variations from 0ºF to 140ºF without deforming and shall maintain their original dimensions and placement without chipping, spalling, or cracking. Material shall not deteriorate because of contact with sodium chloride, calcium chloride, mild alkalis and acids, or other ice control materials.

The EPS shall contain a flame retardant additive.

(c) **Spill Protection Layer**: The exposed top and side surfaces of the blocks shall be protected against chemical spill, particularly petroleum products, using a geomembrane liner. The geomembrane shall be resistant to petroleum products such as gasoline and diesel fuel. The geomembrance shall be manufactured from a tripolymer consisting of polyvinyl chloride, ethylene interpolymer alloy, and polyurethane, or a similar combination. The geomembrane shall have a minimum thickness of 0.7 mm. Seaming, if required, shall be by thermal or solvent methods. The geomembrance shall extend a minimum of twelve inches beyond the EPS surface and overlap with adjacent concrete surfaces. The geomembrane shall be stored and installed according to the manufacturer's recommendations or as directed by the Engineer.

(d) **Geotextile Separation Fabric**: Geotextile Fabric Type IV meeting the requirements of Section 843 of the Standard Specifications shall be placed between the geomembrane wrapped EPS and the backfill material. Fabric joints shall have a minimum overlap of twelve inches. Fabric shall extend a minimum of twelve inches beyond the EPS surface and overlap with adjacent concrete or geomembrane surfaces. Geotextile separation fabric for subsurface installation shall not be exposed to direct sunlight for more than 24 hours during installation.

(e) **Adhesive**: Adhesive shall be used to bond the EPS to concrete surfaces, the geomembrane to the EPS and concrete, and the separation fabric to the geomembrane wrapped EPS or concrete. It shall be applied in accordance with the EPS, geomembrane, and separation fabric manufacturer's recommendations.

(f) **Granular Backfill:** Granular Backfill material shall be crushed stone meeting the requirements of Section 805 of the Standard Specifications and conform to the following gradation:

Sieve Size	**Percent Passing**
1-1/2 inch	100%
No. 4	0 – 25%
No. 8	0 – 5%

III. PROCEDURES

(a) **Preparation of Concrete Surface:** Before placement of EPS, concrete surfaces shall be abrasive blast cleaned with a positive contact sandblaster or adhesives manufacturer's recommendation and approved by the Engineer to remove all non-adherent laitance, oil, grease or other foreign or deleterious matter.

(b) **Installation of EPS Material and Geotextile Separation Fabric:** The EPS shall be attached to the back of the concrete surfaces with an adhesive compatible with the material.

The concrete surface must be thoroughly dry and clean for adhesive for the application of the EPS. Adhesive shall be applied in accordance with the adhesive manufacturer's recommendation or approval.

The geomembrane and separation fabric may be installed after the EPS has been installed or it may be pre-attached to the EPS. The geomembrane shall cover all exposed surfaces of the EPS. The separation fabric shall cover all exposed surfaces of the geomembrane.

EPS, geomembrane, and separation fabric shall be installed in accordance with the manufacturer's recommendations.

(c) **Installation of Wrapped Geotextile Reinforcement and Backfill:** Place Geotextile Fabric Type IV in accordance with Section 214 of the Standard Specifications where the Granular Backfill material will come in contact with embankment material. The Granular Backfill material shall be completely wrapped with Geotextile Fabric Type IV.

Place two 4-inch perforated underdrain pipes wrapped with Geotextile fabric in the bottom of the backfill trench at the base of the end bent/abutment as shown on the attached drawing. Place Granular Backfill in the bottom of the trench and compact as noted below. A minimum of 1 foot but no more than 2 feet of Granular Backfill should be placed in the bottom of the trench, and the actual depth should be determined in the field such that the 1 foot lifts of Geotextile Reinforcement and Granular Backfill will result in the required final grade.

Place Geotextile Reinforcement and Granular Backfill as shown in the attached drawing in lifts not to exceed 1 foot. The Geotextile Reinforcement shall be placed so that the strongest direction is perpendicular to the end bent/abutment and shall be laid so that it is taut and free of wrinkles prior to

backfilling. If needed the Geotextile fabric may be overlapped or mechanically connected (sewn) in accordance with the manufacturer's specifications except that overlaps may not be used within 4 feet of the back wall of the end bent/abutment. Vehicles shall not be allowed to operate directly on the fabric. The Geotextile Reinforcement shall wrap around to enclose the backfill material on three sides (at the end bent and side slopes).

Granular Backfill material shall be placed and spread starting at the back of the End Bent/Abutment and moving perpendicularly away from the End Bent/Abutment so that the Geotextile Reinforcement does not become wrinkled or develop slack. Each lift of the backfill material shall be compacted using a suitable compactor until there is no visible sign of further compression. A minimum of four passes shall be applied per lift. Hand operated compaction equipment such as lightweight mechanical tampers, vibratory plates, or rollers are required within 3 feet of the back of the end bent/abutment.

IV. TESTING

Elasticized EPS shall be tested by an independent commercial laboratory, to verify the material requirements specified herein. The Contractor shall provide written documentation of all tests specified. Documentation shall include style, lot, roll numbers, and actual results of each test. In addition, the name, address, phone number of the testing laboratory, and date of testing shall be provided.

Geotextile Reinforcement and geomembranes shall be tested by an independent commercial laboratory, to verify the material requirements specified herein. The Contractor shall provide written documentation of all tests specified. Documentation shall include style, lot, roll numbers, and actual results of each test. In addition, the name, address, phone number of the testing laboratory, and date of testing shall be provided.

After the EPS has been installed and before the work has been accepted, the Contractor and Inspector shall perform a visual inspection of EPS coverage and adhesion to the concrete surface. Any area deemed unacceptable and questionable as to remaining in position during the placement of the backfill material shall be replaced or repaired, as required.

V. REPAIR OF FAILED AREA OF EPS

Unacceptable portion of the EPS shall be removed and the concrete surface shall be prepared and the EPS installed in accordance with this special provision. New EPS in the repair areas shall be visually inspected after curing. The cost of all additional work for repairing or replacing of the defective joint material shall be borne by the Contractor.

VI. MEASUREMENT AND PAYMENT

Elasticized EPS will be measured in square yards along the back of backwall surface area, complete-in-place, and will be paid for at the contract unit price per square yard. Such price shall be full compensation for cleaning surface, for furnishing and installing the EPS material in accordance with these Specifications and the manufacturer's recommendations, testing, and for all material, labor, tools, equipment and incidentals necessary to complete the work. The department will not measure for payment the geomembrane and will consider it incidental to the Elasiticized EPS.

Granular Backfill will be measured in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204 of the Standard Specifications. The Department will not measure for payment any Granular Backfill not called for in the plans. The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Granular Backfill.

Geotextile Reinforcement and Geotextile Fabric Type IV will be measured as specified in Section 214 of the Standard Specifications.

Special Note for Treatment of End Bent or Abutment Backfills
Using Geotextile Reinforcement and Elastic Inclusion
May 21, 2013

Payment will be made under:

Pay Item	**Pay Unit**
Elasticized EPS (Thickness)	Square Yard
Geotextile Reinforcement	Square Yard
Fabric-Geotextile, Type IV	Square Yard
Granular Backfill	Cubic Yard

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

County: Jackson / Owsley Item No.: 11-278.30 / 10-279.61

Federal Project No.: STP 0302 (025)

Project Description:

11-278.30 – Improve KY-30 from US-421 to the Owsley County line.
10-279.61 – Improve KY-30 from KY-847 in Owsley County to Jackson County line.

Roadway Classification: ☐ Urban ☒ Rural

☐ Local ☐ Collector ☒ Arterial ☐ Interstate

ADT (current) 1300 AM Peak Current 150 PM Peak Current _____ % Trucks 6.7%

Project Designation: ☒ Significant ☐ Other: _____

Traffic Control Plan Design:

Taper and Diversion Design Speeds N/A

Minimum Lane Width 10 ft. Minimum Shoulder Width 0 ft. – 2 ft.

Minimum Bridge Width 20 ft.

Minimum Radius 150 ft. Maximum Grade 9.00%

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

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

Comments:

The majority of construction work is occurring off the existing alignment with minimal traffic disturbance. The minimum geometry above reflects values from the existing alignment. The maintenance of traffic for this project is broken into 4 phases.

Item No. 11-278.30 / 10-279.61

Discussion:

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

Stakeholders

- Utility Companies
  - Booneville Water & Sewer: (606)454-8506
  - Jackson County Water Association: (606)287-7000
  - Delta Gas: (859)744-6171
  - East Kentucky Power: (859)745-9605
  - Jackson Energy Cooperative: (606)364-9217
  - Peoples Rural Telephone Coop Corp.: (606)287-7101
  - C&W Cable Inc.: (606)364-5357
- Government Agencies / Emergency Response
  - Owsley County Judge Executive: (606)593-6202
  - Owsley County Board of Education: (606)593-6363
  - Owsley County Sheriff: (606)593-5161
  - Owsley County Emergency Management: (606)593-6666
  - Allen's Ambulance Services: (606)593-5849
  - Vincent Fire Department: (606)593-7006
  - Vincent Post Office: (606)593-6220
  - Jackson County Judge Executive: (606)287-8562
  - Jackson County Board of Education: (606)287-7181
  - Jackson County Sheriff: (606)287-7121
  - Jackson County EMS: (606)287-7782
  - Tyner Post Office: (800)275-8777
  - Gray Hawk Fire Department: (606)287-7224
  - Kentucky State Police, Post 7, Richmond: (859)623-2404

Local Media Outlets

- Booneville Sentinel: (606)593-6627
- Jackson County Times: (606)287-8528

- Jackson County Sun: (606)287-7197
- Radio Station WWAG 107.9FM: (606)287-9924

Prior to Construction

- KYTC will issue press releases and social media updates announcing the advertisement for bids and when the project is awarded.
- The contractor will prepare and submit a detailed traffic management plan to the engineer for review and approval at least one month prior to any construction activity beginning. This plan will include, but not be limited to: a public information plan to be implemented before and during construction; maintenance of traffic procedures and signage; flagging and traffic control personnel and equipment; debris clean-up crews and equipment; construction equipment to be used on and around road work; passage or restriction of wide loads; and safety of traffic and construction personnel.
- Initial contact by the awarded contractor will be made to all stakeholders listed previously to inform them of the time the construction will begin, the expected times and dates of roadway and lane closures, any other anticipated impacts to travel and access, and where to find and follow information about the project. This contact is to be made sufficiently ahead of time to allow each stakeholder time to adjust to the changes.
- A public information campaign, communicating by way of local radio, newspaper, TV stations, portable changeable message boards, and the District 10 & District 11 social media presence on Facebook and Twitter will be made to inform the traveling public at large of the impending construction. The information should include: anticipated lane closures, roadway closures, and the dates and times they are expected. The awarded contractor will initiate the campaign and work through the District Public Information Officers to disseminate information.
- Anticipated times of lane restrictions and total closures should be adjusted, if necessary, to accommodate special needs of the stakeholders or public at large.

During Construction

- The public information campaign will continue, using the same methods as prior to construction. Updates to travel impacts will be made, including those times which no closures are anticipated (such as periods of construction inactivity and holidays).
- The awarded contractor will provide a contact name and number to all identified stakeholders to allow for individual updates and information during regular business hours. A 24-hour, 7-days a week name and number will also be made available for contact in emergency situations.
- The Engineer and contractor will regularly review both the public information campaign and maintenance of traffic plan to ensure the needs and safety of the public are being met. This would include both method and timing of traffic management procedures.
- In addition to the normal placement of signs, variable message boards should be placed well in advance of the project to forewarn long-distance travelers who may not have had advance warning through local media.

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 11-278.30 / 10-279.61

2) Temporary Traffic Control Plan (For Each Phase of Construction)
Phase I

Exposure Control Measures		**Positive Protection Measures**	
a) Is Road Closure Allowed Type:	Referenced	a) Address Drop Off Protection Criteria	Referenced
b) Detour Conditions	Referenced	b) Temporary Barrier Requirements	Referenced
c) Working Hour Restrictions	Referenced	c) Evaluation of Existing Guardrail Conditions	Referenced
d) Holiday or Special Event Work Restrictions	Referenced	d) Address Temporary Drainage	Referenced
e) Evaluation of Intersection LOS	N/A	**Uniformed Law Enforcement Officers**	N/A
f) Evaluation of Queue Lengths	N/A	**Payment for Traffic Control***	
g) Evaluation of User Costs and Incentives/Disincentives	Referenced	a) Method of Project Bidding	Referenced
h) Address Pedestrians, Bikes, Mass Transit	N/A	b) Special Notes	Referenced
Work Vehicles and Equipment	Referenced	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction	

Comments:

PHASE I NOTES:
WHILE MAINTAINING TRAFFIC ON EXISTING ROADWAYS, CLOSE KY 1431 FROM APPROACH RT. 120+25 (WOODLAND DR) TO APPROACH RT. 148+00 (KY 1431 CONN. 2), APPROACH 280+00 (BATES VICKERS RD), AND EXISTING MADDENTOWN RD, AND UTILIZE DETOUR 1 AND 2
1. CONSTRUCT MAINLINE FROM STA. 101+56.50 TO STA. 119+50 AND APPROACH RT. 108+00 TO THE SUBGRADE.

2. CONSTRUCT MAINLINE FROM STA. 130+00 TO STA. 209+15 THROUGH FINAL BASE COURSE. PLACE PERM. BARRICADE AND CLOSE ZEKE'S POINT ROAD.

3. CONSTRUCT APPROACH RT STA. 148+00 (KY 1431 CONN. 2) FROM STA. 50+00 TO STA. 56+00 THROUGH FINAL BASE COURSE.

4. CONSTRUCT MAINLINE FROM STA. 210+50 TO STA. 279+00 TO THE SUBGRADE.

5. CONSTRUCT MAINLINE FROM STA. 279+00 TO STA. 281+00 AND APPROACH LT & RT STA.

280+00 (BATES VICKERS RD) THROUGH FINAL BASE COURSE.

6. CONSTRUCT MAINLINE FROM STA. 281+00 TO STA. 460+00 TO THE SUBGRADE INCLUDING BRIDGES AT 356+97.50 AND 429+44.50
6A. THE RELOCATION OF CREECH ROAD (LT STA. 358+32), PROPOSED CULVERT PIPE CONSTRUCTION ALONG EXISTING KY 30 (STA. 51+05), AND KY 1071 (STA. 49+76 AND 50+88) MUST BE COMPLETED PRIOR TO BEGINNING THE ADJACENT MAINLINE CONSTRUCTION. THE RELOCATION OF CREECH ROAD WILL BE COMPLETED UNDER TRAFFIC. THE PROPOSED CULVERT PIPES ALONG EXISTING KY 30 AND KY 1071 SHALL BE CONSTRUCTED AS FOLLOWS.

EXISTING KY 30 STA. 51+05 (ML. RT. STA. 357+87)

THIS PROPOSED CULVERT PIPE WILL BE INSTALLED UNDER TRAFFIC UTILIZING ALTERNATING LANE CLOSURES AND FLAGGERS. THE CONTRACTOR AND ENGINEER WILL COORDINATE TO DETERMINE THE TIMING OF THIS WORK. THE CONTRACTOR WILL PROVIDE 48 HOURS NOTIFICATION TO THE EMS AND SHERIFF OFFICES FOR BOTH JACKSON AND OWSLEY COUNTIES. THE CONTRACTOR WILL BE ALLOWED ONE SHIFT TO COMPLETE THIS ITEM. WORK SHALL BE CONDUCTED BETWEEN 7PM AND 7AM. TWO WAY TRAFFIC MUST BE RESTORED AT THE COMPLETION OF THE SHIFT UTILIZING METAL PLATES TO COVER THE EXPOSED TRENCH, IF NECESSARY. THE CONTRACTOR SHALL REPLACE THE ASPHALT PAVEMENT ALONG THE PIPE TRENCH WITHIN 48 HOURS OF OPEN CUTTING THE ROAD.

THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED CULVERT PIPE AS INDICATED ON THE PROPOSED PIPE SECTION. INSTALL THE EASTBOUND LANE CLOSURE AND PROVIDE A MINIMUM LANE WIDTH OF 9 FT WITH AN ADDITIONAL 4 FT BUFFER FROM THE PIPE TRENCH. COMPLETE PHASE I INSTALLATION WHERE INDICATED ON THE PIPE SECTION. UTILIZING METAL PLATES AND TRAFFIC BOUND BASE (TBB) TEMPORARY PAVEMENT, SHIFT TRAFFIC ONTO THE NEWLY CONSTRUCTED PIPE ON THE EASTBOUND SIDE OF KY 30, THEN COMPLETE PHASE II PIPE CONSTRUCTION.

EXISTING KY 1071 48+76 (ML. LT. STA. 430+73) AND 50+88 (ML. RT. STA. 430+43)

THE PROPOSED CULVERT PIPES WILL BE INSTALLED UNDER TRAFFIC UTILIZING A CLOSURE OF KY 1071. THE CONTRACTOR AND ENGINEER WILL COORDINATE TO DETERMINE THE TIMING OF THIS WORK. THE CONTRACTOR WILL PROVIDE 14 CALENDAR DAYS NOTIFICATION TO THE EMS, SHERIFF OFFICES, AND LOCAL MEDIA FOR BOTH JACKSON AND OWSLEY COUNTIES. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE INSTALLED NEAR THE WORK ZONE 14 CALENDAR DAYS PRIOR TO THE CLOSURE. THE CONTRACTOR WILL BE ALLOWED ONE SHIFT TO COMPLETE THIS WORK. WORK SHALL BE CONDUCTED BETWEEN 7PM AND 7AM. TWO WAY TRAFFIC MUST BE RESTORED AT THE COMPLETION OF THE SHIFT UTILIZING METAL PLATES TO COVER THE EXPOSED TRENCHES, IF NECESSARY. THE CONTRACTOR SHALL REPLACE THE ASPHALT PAVEMENT ALONG THE PIPE TRENCHES WITHIN 48 HOURS OF OPEN CUTTING THE ROAD.

7. CONSTRUCT APPROACH LT. STA. 339+00 FROM STA. 47+00 TO STA. 50+00 TO THE SUBGRADE.

8. CONSTRUCT MAINLINE FROM STA. 463+00 TO STA. 513+00 TO THE SUBGRADE.

9. CONSTRUCT MAINLINE FROM STA. 513+00 TO 514+00 AND APPROACH LT. & RT. 513+50 (CANDY BRANCH RD) THROUGH THE FINAL BASE COURSE. COMPLETE APPROACH TIE-INS UNDER TRAFFIC.

10. CONSTRUCT MAINLINE FROM STA. 525+00 TO STA. 550+00 THROUGH THE FINAL BASE COURSE.

11. CONSTRUCT APPROACH LT. STA. 549+00 (BARRETT RD) FROM STA. 48+40 TO STA. 50+00 THROUGH THE FINAL BASE COURSE. COMPLETE TIE-IN UNDER TRAFFIC.

12. CONSTRUCT MAINLINE FROM STA. 559+50 TO STA. 592+00 TO THE SUBGRADE.

13. CONSTRUCT MAINLINE FROM STA. 595+75 TO STA. 604+50 THROUGH THE FINAL BASE COURSE AND TEMPORARY TIE 2 (STA. 604+00) TO KY 30.

14. CONSTRUCT APPROACH LT. STA. 596+00 (BOTNER RD) FROM STA. 43+25 TO STA. 50+25 TO THE FINAL BASE COURSE. COMPLETE APPROACH TIE-INS UNDER TRAFFIC.

15. CONSTRUCT THE EAST END SUBSTRUCTRE FOR THE PROPOSED BRIDGE OVER US 421.

PHASE IA NOTES:
WHILE MAINTAINING TRAFFIC ON EXISTING ROADWAYS AND DETOUR 1 (KY 1431), CLOSE APPROACH LT. 129+27 (WOODLAND DR) DIRECTING WHISPERING PINES TRAFFIC TO EXIT ON ZEKES POINT RD. REMOVE DETOUR 2 (BATES VICKERS RD) AND PLACE TRAFFIC ON NEWLY CONSTRUCTED APPROACH LT. AND RT. 280+00 (BATES VICKERS RD) AND APPROACH LT. 596+00 (BOTNER RD) TO MAINLINE TO TEMPORARY TIE 2.

1. CONSTRUCT MAINLINE FROM STA. 125+35 TO STA. 130+00 AND APPROACH LT. 129+27 (WOODLAND DR) THROUGH FINAL BASE COURSE.

2. UPON APPROVAL OF THE ENGINEER, THE 8" CEMENT STABILIZED ROADBED FROM STA. 125+35 TO STA. 130+00 CAN BE REPLACED WITH ROCK ROADBED FROM THE PROJECT (MEETING SPECIFICATION 204.03.09) TO EXPEDITE MAINTENANCE OF TRAFFIC AT NO ADDITIONAL COSTS TO KYTC.

3. CONSTRUCT TEMPORARY ENTRANCE TO PARCEL 54.

4. ONSTRUCT MAINLINE FROM STA. 514+00 TO STA. 525+00 TO THE FINAL BASE COURSE.

5. CONSTRUCT MAINLINE FROM STA. 592+00 TO STA. 595+75 AND APPROACH RT. STA. 596+00 (BOTNER RD) FROM STA. 50+25 TO 58+02 THROUGH THE FINAL BASE COURSE.

PHASE IB NOTES:
WHILE MAINTAINING TRAFFIC ON EXISTING ROADWAYS AND DETOUR 1 (KY 1431), ALLOW WHISPERING PINES TRAFFIC ON NEWLY CONSTRUCTION MAINLINE - STA. 125+35 TO APPROACH RT. 148+00 (KY 1431 CONN. 2).

1. CONSTRUCT MAINLINE FROM STA. 119+50 TO STA. 125+35 AND APPROACH LT. 120+25 (KY 1431 CONN. 1) THROUGH FINAL BASE COURSE.

2. CONSTRUCT MAINLINE FROM STA. 550+00 TO STA. 559+50 THROUGH FINAL BASE COURSE.

3. CONSTRUCT APPROACH LT. STA. 549+00 (BARRETT RD) FROM STA. 47+50 TO STA. 48+40 AND CUL-DE-SAC ON SOUTH BARRETT RD THROUGH THE FINAL BASE COURSE

PHASE IC NOTES:
WHILE MAINTAINING TRAFFIC ON EXISTING ROADWAYS, REMOVE DETOUR 1 (KY 1431) AND ALLOW

KY 1431 TRAFFIC TO USE APPROACH LT. 120+25 (KY 1431 CONN. 1), MAINLINE, AND APPROACH

RT. 148+00 (KY 1431 CONN. 2). CLOSE KY 30 AT STA. 87+00 AND UTILIZE DETOUR 3. ONCE KY 30

IS CLOSED TO THROUGH TRAFFIC, THE CONTRACTOR WILL HAVE 150 CALENDAR DAYS TO COMPLETE THIS PHASE AND RESTORE TRAFFIC TO PROPOSED KY 30. A PENALTY EQUAL TO THE PROJECT LIQUIDATED DAMAGES WILL APPLY TO EACH DAY OR FRACTION OF A DAY THAT THE CLOSURE EXCEEDS 150 CALENDAR DAYS. NOTE - ALL EARTH WORK, PROPOSED US 421 CONNECTOR BOX CULVERT (STA 60+70) CONSTRUCTION, AND EAST END SUBSTRUCTURE FOR THE PROPOSED BRIDGE OVER US 421 MUST BE COMPLETED PRIOR TO BEGINNING WORK FOR THIS PHASE.

1. CONSTRUCT MAINLINE PAVING FROM STA. 88+00 TO 120+00 THROUGH THE FINAL BASE COURSE, INCLUDING THE PROPOSED BRIDGE OVER US 421.

2. CONSTRUCT APPROACH RT. 108+10 (US 421 CONN.) PAVING.

3. CONSTRUCT US 421 ASPHALT MILLING, RESURFACING, FULL DEPTH SHOULDERS, AND STA. 43+60 TO 57+50 UNDER TRAFFIC. UTILIZE LANE CLOSURES IF NECESSARY.

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

12/2010
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Item No. 11-278.30 / 10-279.61

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase II

Exposure Control Measures		**Positive Protection Measures**	
a) Is Road Closure Allowed Type:	Referenced	a) Address Drop Off Protection Criteria	Referenced
b) Detour Conditions	Referenced	b) Temporary Barrier Requirements	Referenced
c) Working Hour Restrictions	Referenced	c) Evaluation of Existing Guardrail Conditions	Referenced
d) Holiday or Special Event Work Restrictions	Referenced	d) Address Temporary Drainage	Referenced
e) Evaluation of Intersection LOS	N/A	**Uniformed Law Enforcement Officers**	N/A
f) Evaluation of Queue Lengths	N/A	**Payment for Traffic Control***	
g) Evaluation of User Costs and Incentives/Disincentives	Referenced	a) Method of Project Bidding	Referenced
h) Address Pedestrians, Bikes, Mass Transit	N/A	b) Special Notes	Referenced
Work Vehicles and Equipment	Referenced	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction	

Comments:

PHASE II NOTES:
WHILE MAINTAINING TRAFFIC ON PROPOSED KY 30 FROM STA. 88+00 TO 148+00, ALLOWING ACCESS TO US 421 VIA APPROACH RT. 108+10 (US 421 CONN.), THEN THE EXISTING US 421 / KY 30.

1. CONSTRUCT MAINLINE PAVING FROM STA. 210+50 TO STA. 279+00 THROUGH FINAL BASE COURSE.

2. CONSTRUCT MAINLINE PAVING FROM STA. 281+50 TO STA. 460+00 AND APPROACH 339+00 (EXIST. KY 30 CONN. 1) FROM STA. 47+00 TO STA. 50+00 THROUGH FINAL BASE COURSE.

3. CONSTRUCT MAINLINE PAVING FROM STA. 463+00 TO STA. 513+00 THROUGH FINAL BASE COURSE.

4. CONSTRUCT MAINLINE PAVING FROM STA. 559+50 TO STA. 592+00 THROUGH FINAL BASE COURSE.

PHASE IIA NOTES:
REMOVE DETOUR 3 AND MAINTAIN TRAFFIC ON PROPOSED KY 30 FROM STA. 88+00 TO 148+00.

ALLOWING ACCESS TO KY 421 VIA APPROACH RT. 108+10 (US 421 CONN.), THEN THE EXISTING ROADWAY, UTILIZING DETOUR 4 FOR KY 1431 TRAFFIC.

1. CONSTRUCT MAINLINE FROM STA. 209+00 TO STA. 210+50 AND APPROACH LT. & RT. 50+00 (KY 1431 CONN. 3) FROM STA. 49+25 TO 53+25 THROUGH FINAL BASE COURSE.

PHASE IIB NOTES:
WHILE MAINTAINING TRAFFIC ON PROPOSED KY 30 FROM STA. 88+00 TO 148+00, ALLOWING

ACCESS TO KY 421 VIA APPROACH RT. 108+10 (US 421 CONN.), THEN THE EXISTING ROADWAY,

UTILIZING DETOUR 5 FOR STURGEON CREEK RD TRAFFIC.

1. CONSTRUCT MAINLINE FROM STA. 460+00 TO STA. 463+00 AND APPROACH LT. & RT. 462+00

(STURGEON CREEK RD) FROM STA. 42+50 TO 51+00 THROUGH FINAL BASE COURSE.

2. CONSTRUCT MAINLINE FROM STA. 604+50 TO STA. 610+89.30 THROUGH THE FINAL BASE COURSE

AND CONSTRUCT TIE-IN TO EXISTING KY 30 UNDER TRAFFIC.

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 11-278.30 / 10-279.61

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase III

Exposure Control Measures		**Positive Protection Measures**	
a) Is Road Closure Allowed Type:	Referenced	a) Address Drop Off Protection Criteria	Referenced
b) Detour Conditions	Referenced	b) Temporary Barrier Requirements	Referenced
c) Working Hour Restrictions	Referenced	c) Evaluation of Existing Guardrail Conditions	Referenced
d) Holiday or Special Event Work Restrictions	Referenced	d) Address Temporary Drainage	Referenced
e) Evaluation of Intersection LOS	N/A	**Uniformed Law Enforcement Officers**	N/A
f) Evaluation of Queue Lengths	N/A	**Payment for Traffic Control***	
g) Evaluation of User Costs and Incentives/Disincentives	Referenced	a) Method of Project Bidding	Referenced
h) Address Pedestrians, Bikes, Mass Transit	N/A	b) Special Notes	Referenced
Work Vehicles and Equipment	Referenced	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction	

Comments:

PHASE III NOTES:
REMOVE DETOUR 5 AND PLACE TRAFFIC ON NEWLY CONSTRUCTED MAINLINE (UTILIZING DETOUR 6), ALLOWING FULL ACCESS TO ALL APPROACHES WITH THE EXCEPTION OF APPROACH LT. 209+75 (KY 1431 CONN. 3), APPROACHLT. 339+00 (EXIST. KY 30 CONN. 1), AND APPROACH RT. 462+00 (STURGEON CREEK RD).

1. CONSTRUCT APPROACH LT. 339+00 (EXIST. KY 30 CONN. 1) FROM STA. 43+50 TO STA. 47+00 AND APPROACH LT 46+90 (EXIST. KY 30 CONN. 2) FROM STA. 46+25 TO STA. 50+00 THROUGH FINAL BASE COURSE.

PHASE IIIA NOTES:
REMOVE DETOUR 6 AND UTILIZE DETOUR 7 WHILE LEAVING TRAFFIC ON CONSTRUCTED MAINLINE, ALLOWING FULL ACCESS TO ALL APPROACHES WITH THE EXCEPTION OF APPROACH LT. 209+75 (KY 1431 CONN. 3), APPROACH LT. 339+00 (EXIST. KY 30 CONN. 1), AND APPROACH RT. 462+00 (STURGEON CREEK RD).

TRAFFIC MANAGEMENT PLAN

1. CONSTRUCT APPROACH RT. 462+00 (STURGEON CREEK RD) FROM STA. 51+00 TO STA. 56+00 AND APPROACH RT. 52+00 (EXIST. KY 30 CONN. 4) FROM STA. 50+00 TO 58+10 THROUGH FINAL BASE COURSE.

PHASE IIIB NOTES:

WHILE MAINTAINING TRAFFIC CONSTRUCTED MAINLINE, REMOVE DETOUR 7 AND UTILIZE DETOUR 8, ALLOWING FULL ACCESS TO ALL APPROACHES WITH THE EXCEPTION OF APPROACH LT. 209+75 (KY 1431 CONN. 3).

1. CONSTRUCT APPROACH LT. 209+75 (KY 1431 CONN. 3) FROM STA. 46+48.75 TO 49+25 THROUGH FINAL BASE COURSE.

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 11-278.30 / 10-279.61

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase IV

Exposure Control Measures		**Positive Protection Measures**	
a) Is Road Closure Allowed Type:	N/A	a) Address Drop Off Protection Criteria	Referenced
b) Detour Conditions	N/A	b) Temporary Barrier Requirements	Referenced
c) Working Hour Restrictions	N/A	c) Evaluation of Existing Guardrail Conditions	Referenced
d) Holiday or Special Event Work Restrictions	N/A	d) Address Temporary Drainage	Referenced
e) Evaluation of Intersection LOS	N/A	**Uniformed Law Enforcement Officers**	N/A
f) Evaluation of Queue Lengths	Referenced	**Payment for Traffic Control***	
g) Evaluation of User Costs and Incentives/Disincentives	Referenced	a) Method of Project Bidding	Referenced
h) Address Pedestrians, Bikes, Mass Transit	N/A	b) Special Notes	Referenced
Work Vehicles and Equipment	Referenced	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction	

Comments:

COMPLETE FINAL SURFACING, PAVEMENT MARKINGS, PERMANENT SIGNS, AND PROJECT CLEAN UP UNDER TRAFFIC.

Item No. 11-278.30 / 10-279.61

APPROVAL:

Project Manager — Date: 7/10/19

Project Delivery and Preservation Manager — Date: 7-10-19

Engineering Support Manager — Date: 7/10/19

FHWA Representative — Date: 7/12/19

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

SPECIAL NOTE FOR EXCESS MATERIAL SITES

JACKSON / OWSLEY COUNTY
RECONSTRUCT KY 30
ITEM 10-279.61 / 11-278.30

The construction activities of this project may result in a considerable amount of excess material. It is the contractor's responsibility to dispose of any material in compliance with the United States Army Corps of Engineers (USACE) and Kentucky Division of Water (DOW) rules and regulations pertaining to discharges into Waters of the U.S. The contractor is also responsible to ensure material disposal actions are also in compliance with the US Fish and Wildlife Service (USFWS) rules and regulations pertaining to the Endangered Species Act, Section 106 of the National Historic Preservation Act, Floodplains, as well as any other pertinent regulations.

The Kentucky Transportation Cabinet (KYTC) has not identified any excess material sites, acquired property to be used as an excess material site, or acquired Section 404 (USACE) & 401 (DOW) permits for any excess material sites on this project.

If the contractor finds that an excess material site is necessary, it will be the responsibility of the contractor to:

- Identify excess material sites
  - A list of potential sites shall presented at the Pre-Construction Meeting
  - Sites that minimize environmental impacts will be preferred
  - Sites that impact Outstanding State Resource Waters (http://eppcapp.ky.gov/spwaters/, https://apps.legislature.ky.gov/Law/KAR/401/010/026.pdf) will not be permitted
- Secure property rights and access to the excess material site(s)
- Obtain environmental clearances through a KYTC pre-qualified firm for Section 7, Section 106, and Wetlands
- Coordinate with the KYTC Central Office Division of Environmental Analysis (DEA) (Contact: Ellen Mullins 502.782.5008) and provide all the information necessary to modify the existing permits (Section 404, Section 401, and Section 7 including a Biological Opinion from U.S. Fish & Wildlife Service) for this project.

No additional contract time will be allowed for this process

The contractor will be allowed only two (2) permit modifications of the existing 404 permit.

The contractor will be responsible for any fees associated with these sites including but not limited to: USFWS fees for tree cutting, in-lieu fees for stream mitigation, etc. The method of payment will be discussed during coordination with KYTC DEA.

The contractor is responsible for obtaining, maintaining, and repairing accesses to sites through public or private property.

Any work associated with excess material sites will be incidental to the excavation cost including but not limited to the following items: Environmental Fees, Access Road Acquisition/Maintenance/Repair, Erosion Control Devices, Clearing and Grubbing, Seeding and Protection, Temporary and Permanent Drainage Ditches, and Structures (including pipes, culverts, etc.)

Questions concerning any potential impacts to “Waters of the United States” should be brought to the attention of the appropriate District Office for the Corps of Engineers for determination, prior to disturbance. Any fees associated with obtaining new or modified permit approvals for the disposal of excess material from the USFWS, USACE or other appropriate regulatory agencies are the responsibility of the contractor.

All new or modified permit approvals (401/404, Section 7, Section 106, etc.) must be completed prior to disturbance of excess material site(s).

Any communications made by the contractor with regulatory agencies must copy:
KYTC DEA (ellen.mullins@ky.gov)
< OR >
Attn: Ellen Mullins
KYTC Division Environmental Analysis
200 Mero Street, Frankfort KY 40622).

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R1

REVISED PLAN DATE: JULY 15, 2019

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

PLANS OF
PROPOSED PROJECT
JACKSON & OWSLEY COUNTIES
LONDON – BOONEVILLE ROAD (KY 30)
FD52 055 0030 009–018 / FD52 095 0030 000–004 / STP 0302 (025)
GRADE, DRAIN AND SURFACE PLANS

INDEX OF SHEETS

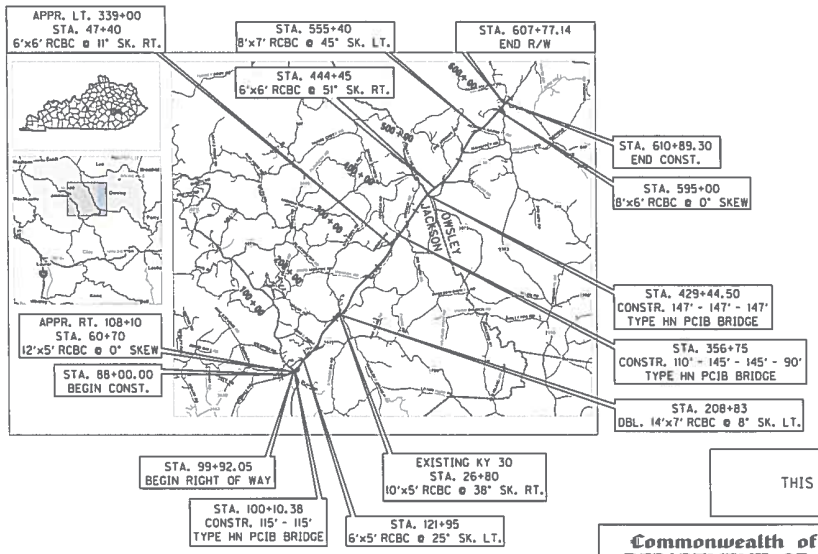
SHEET NO.	DESCRIPTION
R1	LAYOUT SHEET
R2 - R21	TYPICAL SECTIONS
R3 - R98	PLAN AND PROFILE SHEETS
R99 - R103	RIGHT OF WAY SUMMARY SHEETS
R104 - R110	RIGHT OF WAY STRIP MAP SHEETS
R111 - R115	RIGHT OF WAY MONUMENTATION SHEETS
R116 - R122	COORDINATE CONTROL SHEETS

SHEETS NOT INCLUDED IN TOTAL SHEETS
R1a, R2c, R2b, R2c, R2d, R2e, R2f, R2g, R2h, R2i, R2j, R2k, R2l, R44a, R48a, R54a, R8Ca, R87a

STANDARD DRAWINGS

RDE-002-03	RDH-210-03	RDI-026-01	RGX-010-04
RBI-002-07	RBH-212-02	RBI-040-01	
RBM-020-09	RDH-214-03	RDI-041-01	RPM-100-10
RBR-085-11	RDH-216-02	RDP-001-06	RPM-110-07
RBH-010-06	RDH-310-04	RDP-006-04	
	RDH-320-04	RDP-007-04	TPM-115-03
RDB-005-09	RDH-330-04	RDP-010-09	
RDB-105-06	RDH-340-05	RDX-160-06	TTC-100-04
RDB-106-05		RDX-210-03	TTC-135-02
RDD-021-07	RDI-001-10	RDX-220-05	TTS-100-02
RDD-040-05	RDI-002-05	RDX-275-01	TTS-105-07
	RDI-003-05	RDX-230-01	
RDH-020-03	RDI-020-09	RGS-001-07	
RDH-030-03	RDI-021-01	RGX-001-06	
RDH-110-02	RDI-025-05	RGX-005-06	
RDH-120-02			

TOTAL NUMBER OF STANDARD DRAWINGS = 49



LAYOUT MAP
SCALE IN MILES
0 MILES 1 MILE 2 MILES 4 MILES

RIGHT OF WAY PLANS

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

THIS PROJECT IS OFF THE NH SYSTEM

DESIGN CRITERIA

CLASS OF HIGHWAY	ARTERIAL
TYPE OF TERRAIN	MOUNTAINOUS
DESIGN SPEED	55
REQUIRED NPSD	495'
REQUIRED PSD	1,985'
LEVEL OF SERVICE	
ADT PRESENT (2015)	1,300
ADT FUTURE (2035)	1,800
DHV	210
D %	
T %	

GEOGRAPHIC COORDINATES
LATITUDE 37° DEGREES 23' MINUTES 44" SECONDS NORTH
LONGITUDE 83° DEGREES 50' MINUTES 42" SECONDS WEST

DESIGNED
% RESTRICTED SD
LEVEL OF SERVICE
MAX. DISTANCE W/O PASSING

LENGTH 51.119 LIN. FT. 9,682 MILES	LENGTH LIN. FT. MILES	LENGTH LIN. FT. MILES	LENGTH LIN. FT. MILES
ADDED (DEDUCTED) FOR EQUALITIES LIN. FT. NOT INCLUDED	ADDED (DEDUCTED) FOR EQUALITIES LIN. FT. NOT INCLUDED	ADDED (DEDUCTED) FOR EQUALITIES LIN. FT. NOT INCLUDED	ADDED (DEDUCTED) FOR EQUALITIES LIN. FT. NOT INCLUDED
RAILROAD CROSSINGS NO. LIN. FT.	RAILROAD CROSSINGS NO. LIN. FT.	RAILROAD CROSSINGS NO. LIN. FT.	RAILROAD CROSSINGS NO. LIN. FT.
BRIDGES 1,170 LIN. FT.	BRIDGES LIN. FT.	BRIDGES LIN. FT.	BRIDGES LIN. FT.

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF
JACKSON & OWSLEY
LONDON – BOONEVILLE ROAD (KY 30)

ITEM NO. 10-279.61 & 11-278.30
PROJECT NUMBER: FD52 095 0030 000-004 STP 0302 (025)
FD52 055 0030 009-018
LETTING DATE: AUGUST 23, 2019

RECOMMENDED BY: DARREN BACK, P.E. PROJECT MANAGER DATE:
PLAN APPROVED BY: STATE HIGHWAY ENGINEER DATE:

HMB Professional Engineers, Inc
3 HMB Circle
Frankfort, KY 40601
(502) 695-9800
(502) 695 9810 Fax

STATE OF KENTUCKY
CLINTON D. YOUNG
25369
LICENSED
PROFESSIONAL ENGINEER

Clinton D. Young
Digitally signed by Clinton D Young
Date: 2019.07.15 17:45:26 -04'00'

FILE NAME: G:\ENGR\WD239.00 KY 30 JACKSON CNTY\S-LEVEL\PHASE II\SUBUTIL\ALSV\DH RW REV *3\NP-ANS JULY 2019\RDD00LS.DGN
USER: jmcgarner
DATE PLOTTED: July 11, 2019
E SHELL NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R99

REVISED PLAN DATE: JULY 15, 2019

JACKSON COUNTY RIGHT OF WAY SUMMARY

PARCEL NO.	OWNERS	TOTAL AREA OF TRACT		PERM R/W ACQUIRED		EASEMENTS		AREA SEVERED				EXCESS PURCHASED		PORTION REMAINING		SEWER SYSTEM TYPE	SEWER SYSTEM AFFECTED		BUILDINGS ACQUIRED NUMBER				SOURCE OF TITLE	REMARKS*
								LEFT		RIGHT														
		ACRES	SQ. FT.	ACRES	SQ. FT.	PERMANENT SQ. FT.	TEMPORARY SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.		YES	NO	C	R	F	S		
48	GLEN & WANDA HAMMONS	1.296 c.		1.296										TOTAL TAKE		1	☑	☐		1		1	DB 152 PG 517	
49	GENE & THERESA MCQUEEN	12.090 c.		10.884						1.206				1.206		1	☑	☐		1	1		DB 153 PG 235	
49X	GENE & THERESA MCQUEEN	12.090 c.								1.206						5	☐	☑					DB 153 PG 235	IF ACCESS IS NEEDED TO THIS PARCEL, CONTACT KYTC D-10
50	BENNIE & DEBBIE FIELDS	4.524 b.			13,578					4.212				4.212		5	☐	☑					DB 117 PG 249 DB 120 PG 93	
51	JOHN & MYRTLE YORK	6.666 c.		1.961			23,747	4.705						4.705		1	☑	☐		1		2	DB 160 PG 409	
52	CHRISTINE ANDERSON	18.000 b.		3.096				13.049		1.855				14.904		5	☐	☑					DB 106 PG 25	
53	HELEN S. RIDNOUR & DANIEL L. RIDNOUR	13.718 a.		7.433				5.330		0.955				6.285		5	☐	☑					DB 84 PG 359	
54	HELEN RIDNOUR	39.963 a.		1.395			4,645	38.568						38.568		5	☐	☑					DB 182 PG 541	
55	JOHN M. MOORE	158.626 a.		3.528			51,765	15.295		139.803				155.098		5	☐	☑			1		DB 161 PG 1	
56	CLAYTON BANK AND TRUST		14,987 c.		14,987									TOTAL TAKE		1	☑	☐				1	DB 209 PG 221	
57	FRANKLIN ROWLAND		40,713 c.		40,713									TOTAL TAKE		1	☑	☐		2		1	DB 105 PG 308 DB 105 PG 379	
58	NOT USED																☐	☐						NOT USED
59	HOWARD GENE & TERESA MCQUEEN		20,873 c.		20,873									TOTAL TAKE		1	☑	☐	1	1			DB 150 PG 603 DB 189 PG 451	
60	LOUIS MARKS		13,858 c.		13,858									TOTAL TAKE		1	☑	☐		1			DB 209 PG 545 DB 209 PG 548	
61	LONNIE & YVONNE GABBARD		30,818 c.		30,818									TOTAL TAKE		1	☑	☐		2		3	DB 144 PG 184	
62	GLENNA JO SANDERS		7,402 c.		7,402									TOTAL TAKE		1	☑	☐		1		1	DB 185 PG 312	
63	WILLIAM & WANDA FIELDS		23,320 c.		23,320									TOTAL TAKE		1	☑	☐		1		1	DB 152 PG 335 DB 153 PG 64	
64	NOT USED																☐	☐						NOT USED
65	LONNIE & YVONNE GABBARD	1.297 c.		1.297										TOTAL TAKE		1	☑	☐		1		4	DB 193 PG 70 DB 195 PG 259	
66	NOT USED																☐	☐						NOT USED
67	NOT USED																☐	☐						NOT USED
68	NOT USED																☐	☐						NOT USED
69	PAUL MARKS		18,320 c.		18,320									TOTAL TAKE		1	☑	☐		1		2	DB 191 PG 918	
70	JENNY L. YARBOURGH		22,669 c.		22,669									TOTAL TAKE		1	☑	☐		1		2	DB 185 PG 293	
71	TERRY & MICHELLE COOMER		40,010 c.		40,010									TOTAL TAKE		1	☑	☐		2			DB 171 PG 731	
72	NOT USED																☐	☐						NOT USED
73	NOT USED																☐	☐						NOT USED
74	RANDY & TERESA WHICKER		29,543 c.		29,543									TOTAL TAKE		1	☑	☐		1			DB 202 PG 668	

NOTE: PERMANENT R/W ACQUIRED + AREA SEVERED + TOTAL AREA OF TRACT.

BASIS FOR DETERMINATION OF AREA
a. P.V.A.
b. DEED
c. CALCULATED
d. PLAT

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

RIGHT OF WAY PLANS

TYPE SEWER SYSTEM
1. PRIVATE - INDIVIDUAL
2. PRIVATE - MULTI PARTY
3. PUBLIC
4. NONE
5. NOT APPLICABLE

BUILDINGS ACQUIRED CODE
C - COMMERICAL
R - RESIDENTIAL
F - FARM
S - STORAGE

*INCLUDES HAZARDOUS WASTE (UST = UNDERGROUND STORAGE TANKS)

RIGHT OF WAY SUMMARY SHEET

FILE NAME: G:\ENGR\RD\239.00 KY 30 JACKSON GWS.LEY\PHASE II\SUBMITTALS\FOR RW REV *3\JP-ANS JULY 2019\R99001#.DGN
USER: pogers
DATE PLOTTED: July 11, 2019
MicroStation v8.11.9.459
L SHELL NAME:

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R100

REVISED PLAN DATE: JULY 15, 2019

JACKSON COUNTY RIGHT OF WAY SUMMARY

PARCEL NO.	OWNERS	TOTAL AREA OF TRACT		PERM R/W ACQUIRED		EASEMENTS		AREA SEVERED				EXCESS PURCHASED		PORTION REMAINING		SEWER SYSTEM TYPE	SEWER SYSTEM AFFECTED		BUILDINGS ACQUIRED NUMBER				SOURCE OF TITLE	REMARKS*
								LEFT		RIGHT														
		ACRES	SQ. FT.	ACRES	SQ. FT.	PERMANENT SQ. FT.	TEMPORARY SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.		YES	NO	C	R	F	S		
75	ELBERT & LEONA BOWLES		7,340 c.		7,340									TOTAL TAKE		1	☑	☐				1	DB 108 PG 428	
76	MARY BOWLES		13,046 c.		13,046									TOTAL TAKE		1	☑	☐		1			DB 144 PG 560 DB 178 PG 332	
77	NOT USED																☐	☐						NOT USED
78	LINDA DARLENE MADDEN	3.041 a.					1,652							3.041		5	☐	☑					DB 185 PG 343	
79	EDWARD & MAUDIE MADDEN		24,628 b.				1,221								24,628	5	☐	☑					DB 99 PG 239	
80	PHILLIP & LINDA AKEMON	18.421 a.		8.371			8,221	6.586		3.464				10.050		1	☑	☐		1		2	DB 195 PG 407	
80X	PHILLIP & LINDA AKEMON	18.421 a.										3.464				5	☐	☑					DB 195 PG 407	IF ACCESS IS NEEDED TO THIS PARCEL, CONTACT KYTC D-10
81	CHESTER L. SMITH	42.000 b.		9.343			36,372	4.931		27.726				32.657		5	☐	☑			1		DB 187 PG 725	
82	NOT USED																☐	☐						NOT USED
83	RENA RHNEA PRIVETT CONNER	40.000 b.		1.960						38.040				38.040		5	☐	☑					DB 203 PG 743	
84	DONALD RAY CUNAGIN	91.873 a.		18.242			4,013	73.631						73.631		5	☐	☑					DB 72 PG 225 DB 113 PG 265	
85	ALAN BOWLING	23.557 a.		10.987			5,970	4.316		8.254				12.570		5	☐	☑					DB 208 PG 326	
86	VERNON & NICKI BALDWIN	21.490 b.		12.729			12,744			8.761				8.761		1	☑	☐		1		4	DB 213 PG 27	
87	RONNIE & SHARON HICKS	1.450 c.		1.450										TOTAL TAKE		5	☐	☑					DB 162 PG 419	
88	KETTISHA & GAIL MCDOWELL KETTISHA MCDOWELL REV TRUST	38.073 b.		11.887						26.186				26.186		5	☐	☑					DB 173 PG 666 DB 173 PG 491	WB 1 PG 274
89	CLAUDE SR., & ADRIAN, & NEIL HUDSON		10,807 c.		10,807									TOTAL TAKE		1	☑	☐	1				DB 184 PG 688	
90	IVAN MCQUEEN	2.500 b.		1.130						1.370				1.370		1	☑	☐		1		1	DB 195 PG 164	
91	JOHN & SALLY HORNSBY	7.575 a.				22,264								7.575		5	☐	☑					DB 126 PG 176	
92	SHANNON & RHONDA ROBINSON	106.986 a.		20.494			3,839	84.989		1.503				86.492		5	☐	☑					DB 172 PG 93	
93	MARLON & CARLA COFFEY		30,448 c.		30,448									TOTAL TAKE		1	☑	☐		1		1	DB 196 PG 450	
94	EDWARD & SHEILA HARTSOCK	20.000 b.		9.910			100,199	1.044		9.046				10.090		5	☐	☑			2		DB 158 PG 744	
95	PHILLIP & LINDA AKEMON PHILLIP JR. & MELISSA AKEMON	110.237 a.		23.614			10,708	9.928		76.695				86.623		5	☐	☑					DB 168 PG 402	
96	JAMES E. & SHEILA STRONG	13.815 a.			11,494		4,855	13.551						13.551		5	☐	☑					DB 89 PG 16 WB 3 PG 468	
97	MARJORIE MADDEN, GALE MADDEN BOGGS, RICKY BOGGS, & CHRIS BOGGS	444.806 c.		33.294			7,403	397.924		13.588				411.512		5	☐	☑					DB 202 PG 175	
98	NOT USED																☐	☐						NOT USED
99	GERALD, RONALD, & EDWARD BOWLING	24.091 c.		6.538			7,148	11.158		6.395				17.553		5	☐	☑					DB 181 PG 143	
100	MICHAEL SCOTT FLANNERY	40.000 b.			32,867		3,557	39.245						39.245		5	☐	☑					DB 173 PG 595	
101	NOT USED																☐	☐						NOT USED

NOTE: PERMANENT R/W ACQUIRED + AREA SEVERED + TOTAL AREA OF TRACT.

BASIS FOR DETERMINATION OF AREA
a. P.V.A.
b. DEED
c. CALCULATED
d. PLAT

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

RIGHT OF WAY PLANS

TYPE SEWER SYSTEM
1. PRIVATE - INDIVIDUAL
2. PRIVATE - MULTI PARTY
3. PUBLIC
4. NONE
5. NOT APPLICABLE

BUILDINGS ACQUIRED CODE
C - COMMERICAL
R - RESIDENTIAL
F - FARM
S - STORAGE

*INCLUDES HAZARDOUS WASTE (UST - UNDERGROUND STORAGE TANKS)

RIGHT OF WAY SUMMARY SHEET

FILE NAME: G:\ENGR\R0129.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FOR RW REV #1\PLANS JULY 2019\R0000RWSUM
USER: e0rcon
DATE PLOTTED: July 11, 2019
E SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R101

REVISED PLAN DATE: JULY 15, 2019

JACKSON COUNTY RIGHT OF WAY SUMMARY

PARCEL NO.	OWNERS	TOTAL AREA OF TRACT		PERM R/W ACQUIRED		EASEMENTS		AREA SEVERED				EXCESS PURCHASED		PORTION REMAINING		SEWER SYSTEM TYPE	SEWER SYSTEM AFFECTED		BUILDINGS ACQUIRED NUMBER				SOURCE OF TITLE	REMARKS*
						PERMANENT	TEMPORARY	LEFT		RIGHT														
		ACRES	SQ. FT.	ACRES	SQ. FT.	SQ. FT.	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.		YES	NO	C	R	F	S		
102	JASON WAYNE FLANNERY & JENNIFER M. WILSON	91.312 a.		25.773			4,759	6.763		58.776				65.539		5	☐	☑			1		DB 200 PG 32	
103	**NOT USED**																☐	☐						**NOT USED**
104	LENA FLANNERY, ET AL	188.000 b.		23.237				41.435		123.328				164.763		5	☐	☑					DB 153 PG 446 DB 153 PG 449	
105	DAVID MILLER & SANDRA MILLER (WF)	7.250 d.			35,264		1,632	6.440						6.440		5	☐	☑					DB 201 PG 239	PROPERTY OWNER PLAT
106	WENDELL KILBURN & LINDA KILBURN (WF)	66.544 a. b.		11.513			2,065	27.032		27.999				55.031		5	☐	☑			1		DB 95 PG 125 DB 96 PG 419	DB 182 PG 656
107	CYNTHIA BINGHAM & BRENT BINGHAM (HUSB)	43.53 a.		11.506			9,832	12.352		19.672				32.024		5	☐	☑			1		DB 182 PG 508	
108	BRENT BINGHAM & CYNTHIA BINGHAM (WF)	64.285 b.		7.123			7,601	55.634		1.528				57.162		5	☐	☑					DB 146 PG 636	
109	**NOT USED**																☐	☐						**NOT USED**
110	KATHLEEN BROWN & ANNETTE OSBORNE	204.000 b.		10.626			11,223	191.012		2.362				193.374		5	☐	☑					WB 10 PG 545 DB 201 PG 140	
111	MAGNUM UNLIMITED, LLC	92.485 c.		3.992			7,146	4.717		83.776				88.493		5	☐	☑					DB 184 PG 638	
112	**NOT USED**																☐	☐						**NOT USED**
113	DONALD HURST & PEGGY HURST (WF)	33.919 c.		10.973			10,928	11.283		11.663				22.946		5	☐	☑					DB 78 PG 229 DB 164 PG 538	DB 199 PG 213
160	MARLENE BALDWIN		14,196 c.		14,196									**TOTAL TAKE**		1	☑	☐		1		1	DB 181 PG 738 DB 203 PG 72	
161	TIM & RHONDA NEELEY	20.271 c.		1.038						19.233				19.233		5	☐	☑					DB 130 PG 525	
162	LENA FLANNERY, ET AL	164.763 c.			14,021			41.113		123.328				164.441		5	☐	☑					DB 153 PG 446 DB 153 PG 449	ADDITIONAL ROW TAKING FROM ORIGINAL PARCEL 104
																	☐	☐						
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																	☐	☐						

NOTE: PERMANENT R/W ACQUIRED + AREA SEVERED = TOTAL AREA OF TRACT.

BASIS FOR DETERMINATION OF AREA
a. P.V.A.
b. DEED
c. CALCULATED
d. PLAT

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

RIGHT OF WAY PLANS

TYPE SEWER SYSTEM
1. PRIVATE - INDIVIDUAL
2. PRIVATE - MULTI PARTY
3. PUBLIC
4. NONE
5. NOT APPLICABLE

BUILDINGS ACQUIRED CODE
C - COMMERICAL
R - RESIDENTIAL
F - FARM
S - STORAGE

*INCLUDES HAZARDOUS WASTE (UST - UNDERGROUND STORAGE TANKS)

RIGHT OF WAY SUMMARY SHEET

FILE NAME: G:\ENGNRD\239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITALS\ROW RW REV *SUP-ANS JULY 2019\ROD0RW.DGN
USER: ajordan
DATE PLOTTED: July 11, 2019
E-SHEET NAME:
MicroStation V8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R102

REVISED PLAN DATE: JULY 15, 2019

OWSLEY COUNTY RIGHT OF WAY SUMMARY

PARCEL NO.	OWNERS	TOTAL AREA OF TRACT		PERM R/W ACQUIRED		EASEMENTS		AREA SEVERED				EXCESS PURCHASED		PORTION REMAINING		SEWER SYSTEM TYPE	SEWER SYSTEM AFFECTED		BUILDINGS ACQUIRED NUMBER				SOURCE OF TITLE	REMARKS*
						PERMANENT	TEMPORARY	LEFT		RIGHT														
		ACRES	SQ. FT.	ACRES	SQ. FT.	SQ. FT.	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.		YES	NO	C	R	F	S		
114	DONALD K. HURST & PEGGY HURST (WF)	19.655 a.		7.716				2.504		9.435				11.939		5	☐	☑					DB 164 PG 538	
115	MICHAEL WILSON & WANDA WILSON (WF)	49.817 a.			14,370		1,466	49.487						49.487		5	☐	☑					DB 77 PG 491 DB 89 PG 379	
116	NOT USED																☐	☐						NOT USED
117	WALLACE EDWARDS & RITA EDWARDS (WF)	19.000 b.		1.396						17.604				17.604		5	☐	☑					DB 63 PG 427	
118	FREDA MARCUM	10.000 b.		4.030			436	0.543		5.427				5.970		5	☐	☑					DB 70 PG 182	
119	ROBERT STRONG HEIRS & BERNARD WILSON	0.788 c.			13,486		1,241	0.478						0.478		5	☐	☑					DB 25 PG 504 DB 20 PG 41	DB 55 PG 275
120	LARRY D. CHADWELL & FRANCES LOUISE CHADWELL (WF)	115.472 a.		10.400			1,521	1.798		103.274				105.072		5	☐	☑				1	DB 67 PG 294	
121	NOT USED																☐	☐						NOT USED
122	BERNARD WILSON & RUTH ANN WILSON (WF)	225.013 a.		22.065			8,594	201.459		1.489				202.948		5	☐	☑					DB 55 PG 283	
123	JOYCE ROBERTS, ET AL	89.953 a.		17.614			6,719	39.537		32.802				72.339		5	☐	☑					DB 86 PG 457	
																	☐	☐						
																	☐	☐						
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NOTE: PERMANENT R/W ACQUIRED + AREA SEVERED + TOTAL AREA OF TRACT.

BASIS FOR DETERMINATION OF AREA
a. P.V.A.
b. DEED
c. CALCULATED
d. PLAT

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

RIGHT OF WAY PLANS

TYPE SEWER SYSTEM
1. PRIVATE - INDIVIDUAL
2. PRIVATE - MULTI PARTY
3. PUBLIC
4. NONE
5. NOT APPLICABLE

BUILDINGS ACQUIRED CODE
C - COMMERICAL
R - RESIDENTIAL
F - FARM
S - STORAGE

*INCLUDES HAZARDOUS WASTE (UST - UNDERGROUND STORAGE TANKS)

RIGHT OF WAY SUMMARY SHEET

FILE NAME: G:\ENGRNOI239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\OR RW REV "3\OR_ANS JULY 2019\RNO200RW.DGN
USER: ajordan
DATE PLOTTED: July 11, 2019
SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R103

REVISED PLAN DATE: JULY 15, 2019

OWSLEY COUNTY RIGHT OF WAY SUMMARY

PARCEL NO.	OWNERS	TOTAL AREA OF TRACT		PERM R/W ACQUIRED		EASEMENTS		AREA SEVERED				EXCESS PURCHASED		PORTION REMAINING		SEWER SYSTEM TYPE	SEWER SYSTEM AFFECTED		BUILDINGS ACQUIRED NUMBER				SOURCE OF TITLE	REMARKS*
						PERMANENT	TEMPORARY	LEFT		RIGHT														
		ACRES	SQ. FT.	ACRES	SQ. FT.	SQ. FT.	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.		YES	NO	C	R	F	S		
124	PATRICIA COLLINSWORTH	87.518 a.		5.659				81.859						81.859		5	☐	☑					DB 87 PG 415	
125	ROBERT STRONG	9.339 a.		1.643				4.169		3.527				7.696		5	☐	☑					DB 92 PG 550 DB 91 PG 284	
126	MARIE MILLER, ET AL	12.662 b.		2.881			2,215	1.595		8.186				9.781		5	☐	☑					DB 72 PG 176	
127	ROBERT STRONG	62.000 b.		18.952			25,214	3.464		39.584				43.048		5	☐	☑					DB 92 PG 537	
128	ROBERT STRONG	37.604 a.		5.801			14,217	30.272		1.531				31.803		5	☐	☑			2	1	DB 92 PG 546 DB 56 PG 517	
129	**NOT USED**																☐	☐						**NOT USED**
130	**NOT USED**																☐	☐						**NOT USED**
131	DELLA ROWENA OLIVER (LIFE ESTATE), WILMA LEE OLIVER (LIFE ESTATE), DENNIS COY GRAY & JULIE GRAY (WF)	90.000 b.		9.418				77.671		2.911				80.582		1	☑	☐		1	1	1	DB 96 PG 33	
132	BETTY J. FLANNERY	54.936 a.		13.892				7.800		33.244				41.044		5	☐	☑					DB 48 PG 235 DB 92 PG 608	WB 9 PG 427
133	JEFF DOOLEY, MELISSA DOOLEY (WF), & ROBERT N. STRONG	121.000 a.		1.339			3,926	119.661						119.661		5	☐	☑					DB 98 PG 87 DB 98 PG 192	
134	PETERS FARMS, LLC	67.035 a.		5.815				8.572		52.648				61.220		5	☐	☑					DB 77 PG 79	
135	THE CHURCH OF PANTHEOS, INC.	110.175 a.		18.834			1,254	34.560		56.781				91.341		5	☐	☑					DB 76 PG 391	
136	VIRGIL H. THOMAS & SARA MAE HAYMONS (WF)	3.460 b.		3.460										TOTAL TAKE		1	☑	☐		1	2	1	DB 80 PG 94	
137	MICHAEL ALLEN BOTNER	71.130 b.		3.808			619	67.322						67.322		5	☐	☑					DB 70 PG 801	
138	L-M ASPHALT PARTNERS, LTD	15.670 b.		1.514			1,060			14.156				14.156		5	☐	☑					DB 98 PG 9	
139	**NOT USED**																☐	☐						**NOT USED**
140	ANNA HELEN BREWER	0.095 a.			1,738					0.055				0.055		5	☐	☑					DB 64 PG 677 DB 53 PG 590	DB 34 PG 260
141	GLENDON BREWER (SINGLE), GLEMA DOOLEY, & JAMES DOOLEY (HUSB)	1.000 b.			26,732					0.386				0.386		5	☐	☑					DB 85 PG 156	
142	BRITTANY PRICE, TONY PRICE (LIFE ESTATE), & CONNIE PRICE (LIFE ESTATE)	16.365 a.		5.312			770	5.232		5.821				11.053		5	☐	☑					DB 85 PG 119 DB 93 PG 53	
143	JEFFERY CODY DOOLEY		37,623 c.		37,623									TOTAL TAKE		1	☑	☐		1			DB 94 PG 245	
																	☐	☐						
																	☐	☐						
																	☐	☐						
																	☐	☐						
																	☐	☐						
																	☐	☐						
																	☐	☐						
																	☐	☐						

NOTE: PERMANENT R/W ACQUIRED + AREA SEVERED = TOTAL AREA OF TRACT.

BASIS FOR DETERMINATION OF AREA
a. P.V.A.
b. DEED
c. CALCULATED
d. PLAT

THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

RIGHT OF WAY PLANS

TYPE SEWER SYSTEM
1. PRIVATE - INDIVIDUAL
2. PRIVATE - MULTI PARTY
3. PUBLIC
4. NONE
5. NOT APPLICABLE

BUILDINGS ACQUIRED CODE
C - COMMERICAL
R - RESIDENTIAL
F - FARM
S - STORAGE

*INCLUDES HAZARDOUS WASTE (UST - UNDERGROUND STORAGE TANKS)

RIGHT OF WAY SUMMARY SHEET

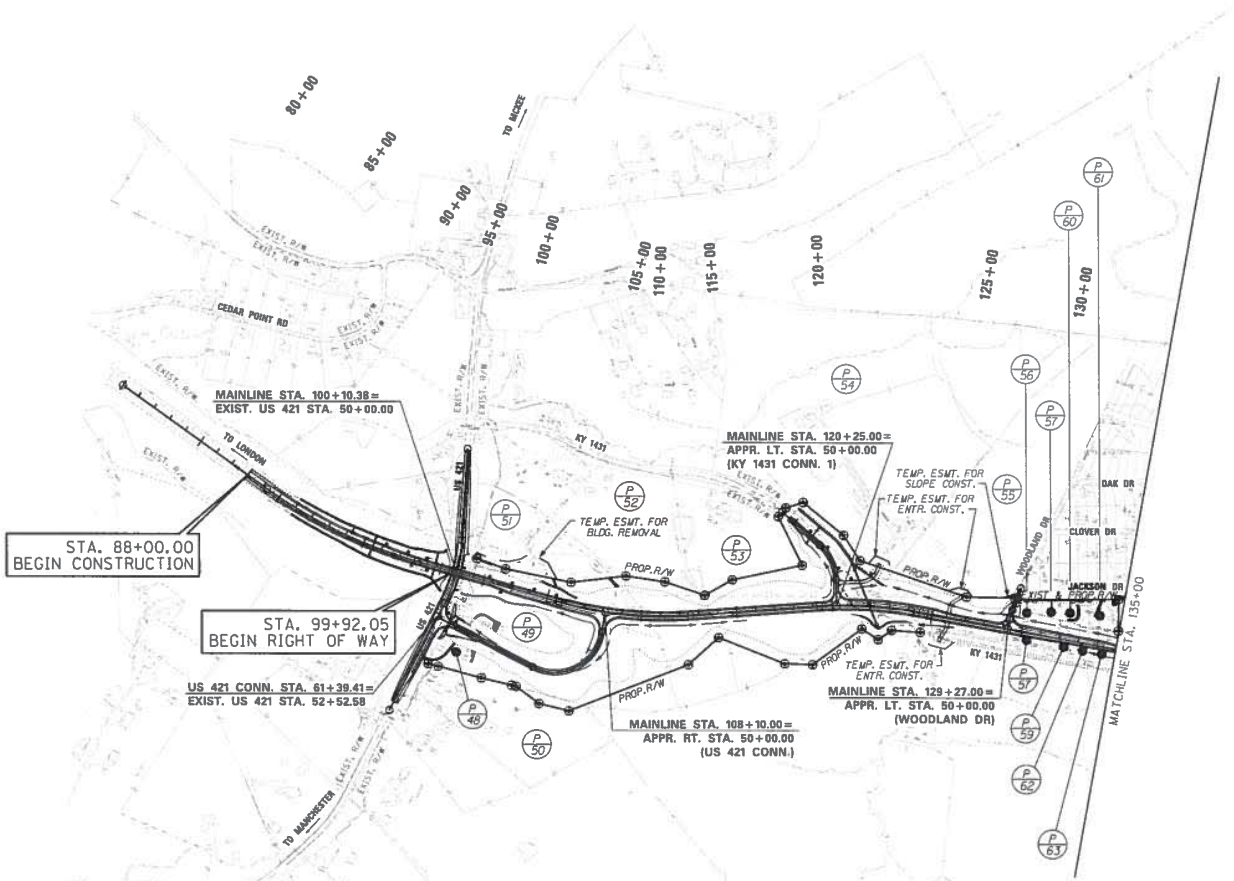
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USER: eJordon
DATE PLOTTED: July 11, 2019
E. SHEET NAME:
MicroStation V8.11.9.459

RIGHT OF WAY STRIP MAP

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R104

REVISED PLAN DATE: JULY 15, 2019

- (P 48) GLEN & WANDA HAMMONS
- (P 49) GENE & THERESA MCQUEEN
- (P 50) BENNIE & DEBBIE FIELDS
- (P 51) JOHN & MYRTLE YORK
- (P 52) CHRISTINE ANDERSON
- (P 53) HELEN S. RIDNOUR & DANIEL L. RIDNOUR
- (P 54) HELEN RIDNOUR
- (P 55) JOHN M. MOORE (HISTORIC)
- (P 56) CLAYTON BANK AND TRUST
- (P 57) FRANKLIN ROWLAND
- (P 59) HOWARD GENE & TERESA McQUEEN
- (P 60) LOUIS MARKS
- (P 61) LONNIE & YVONNE GABBARD
- (P 62) GLENNA JO SANDERS
- (P 63) WILLIAM & WANDA FIELDS



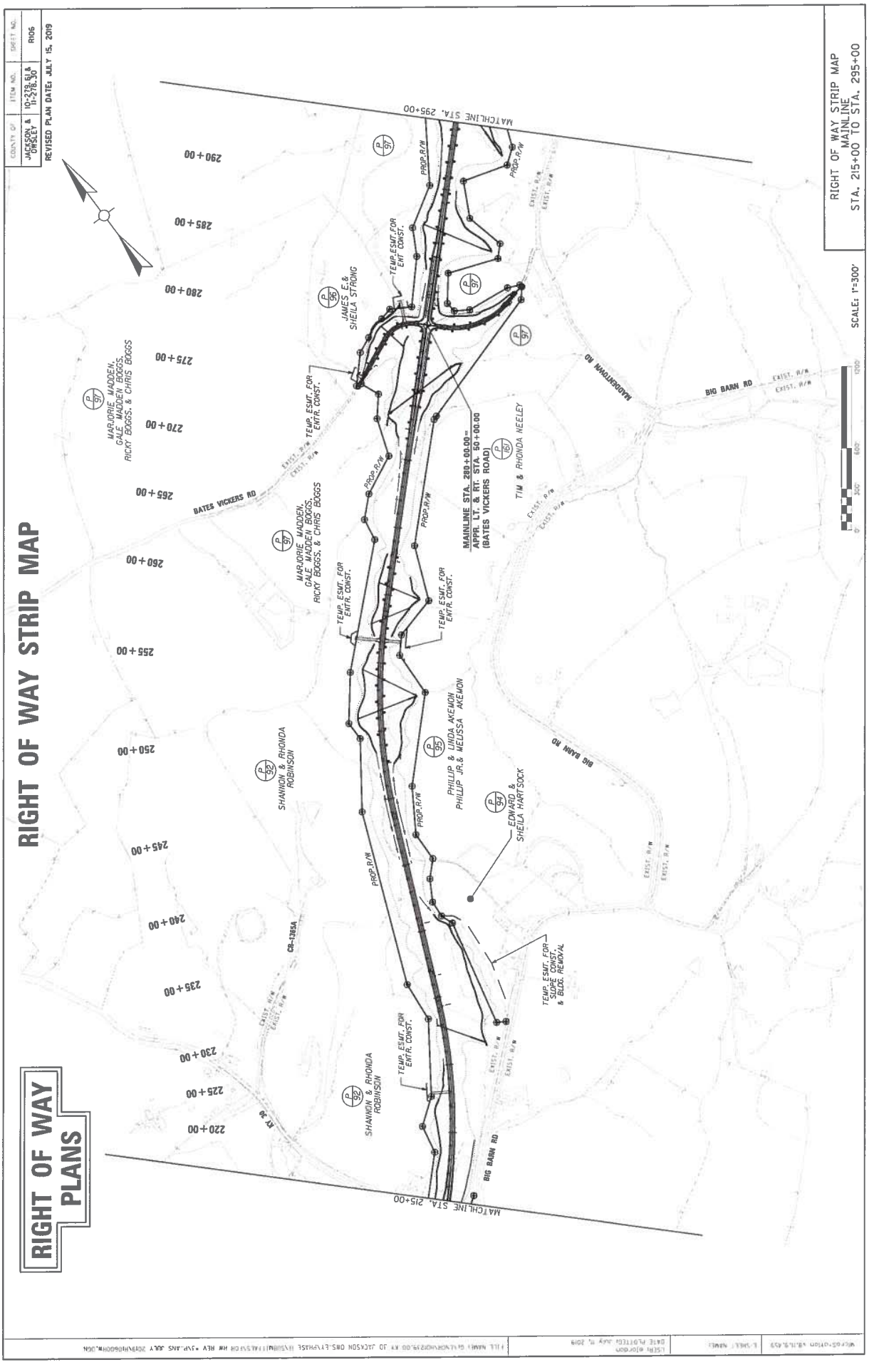
SCALE: 1"=300'

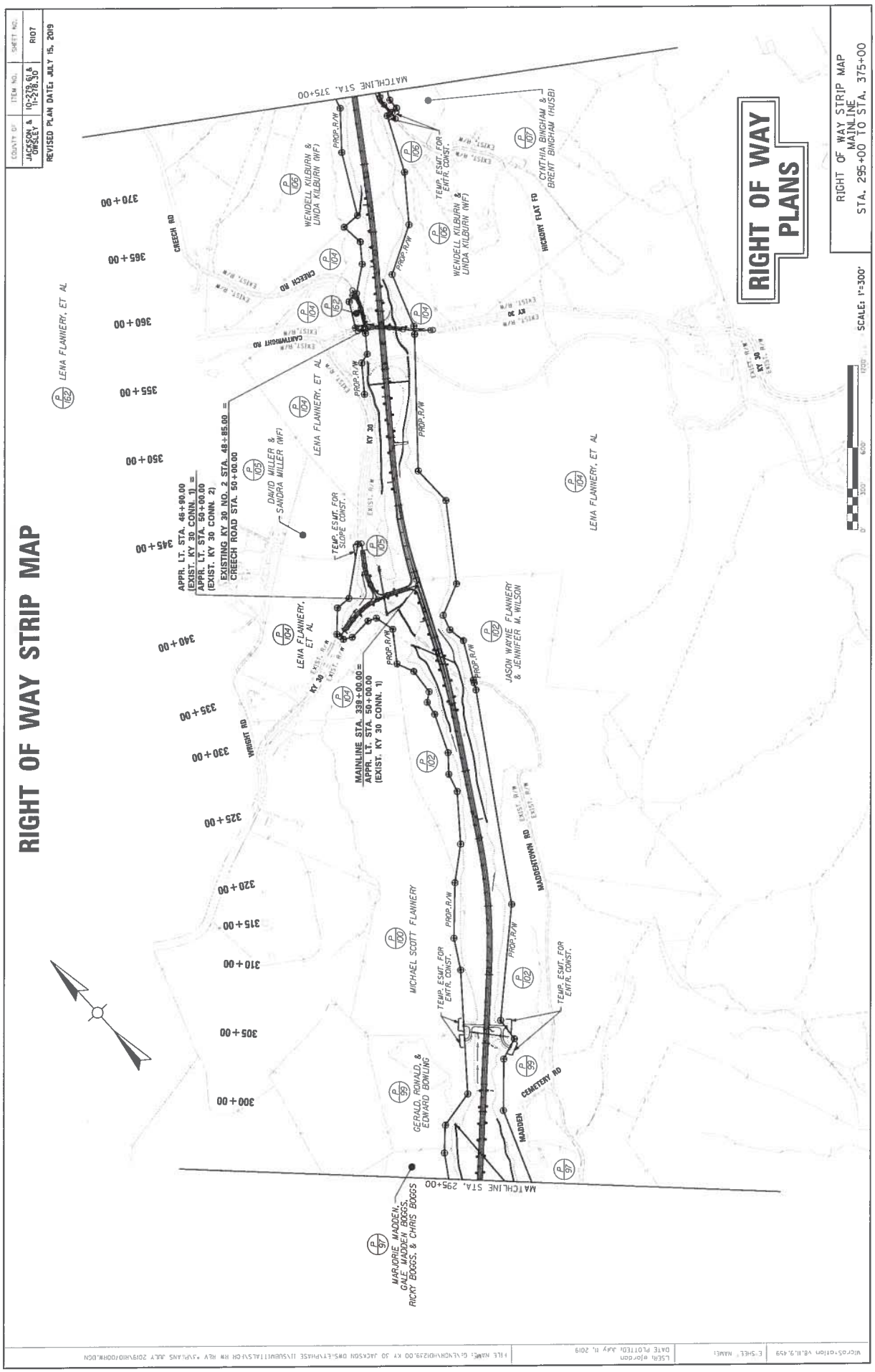
RIGHT OF WAY PLANS

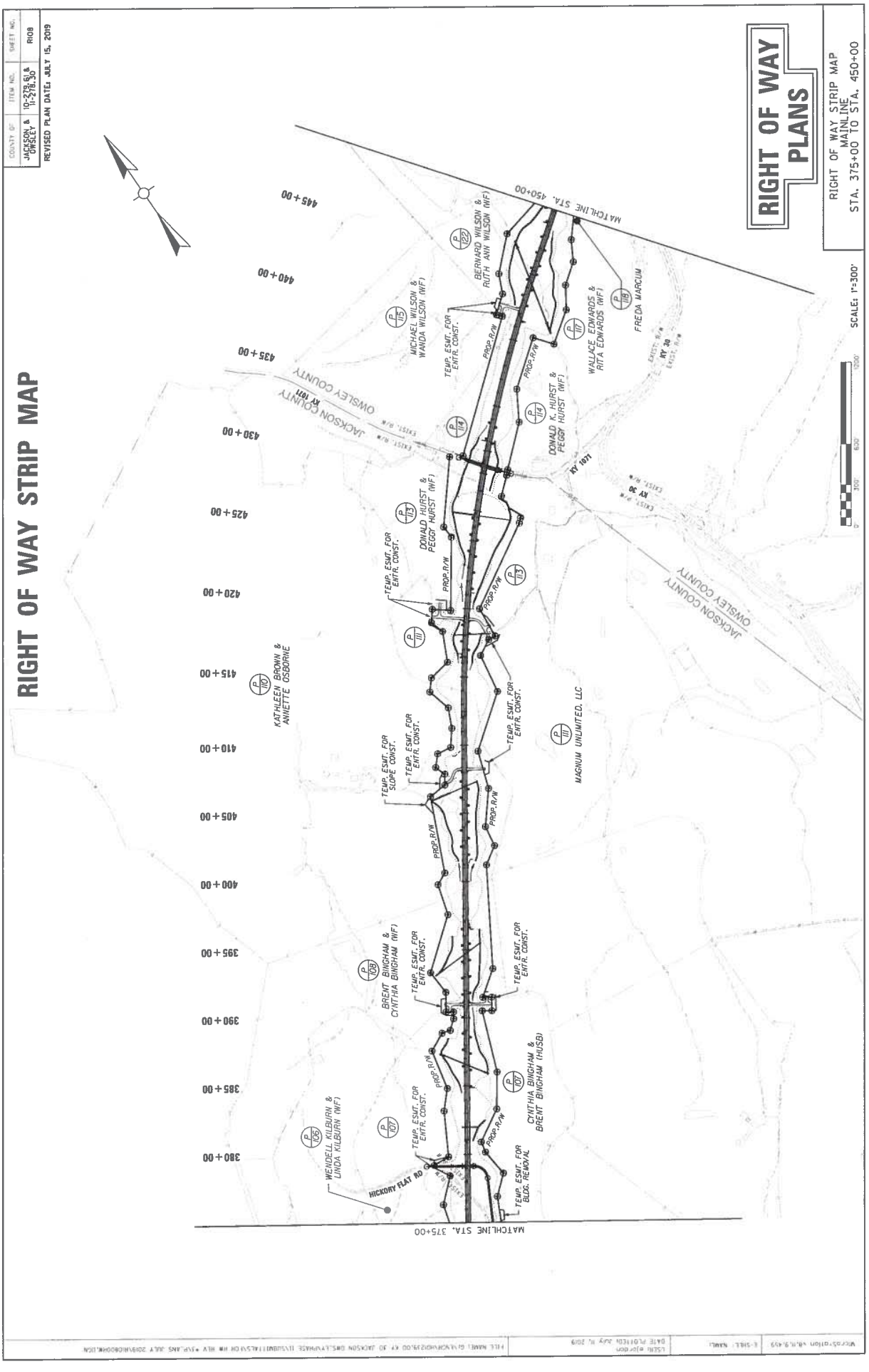
RIGHT OF WAY STRIP MAP
MAINLINE
STA. 65+00 TO STA. 135+00

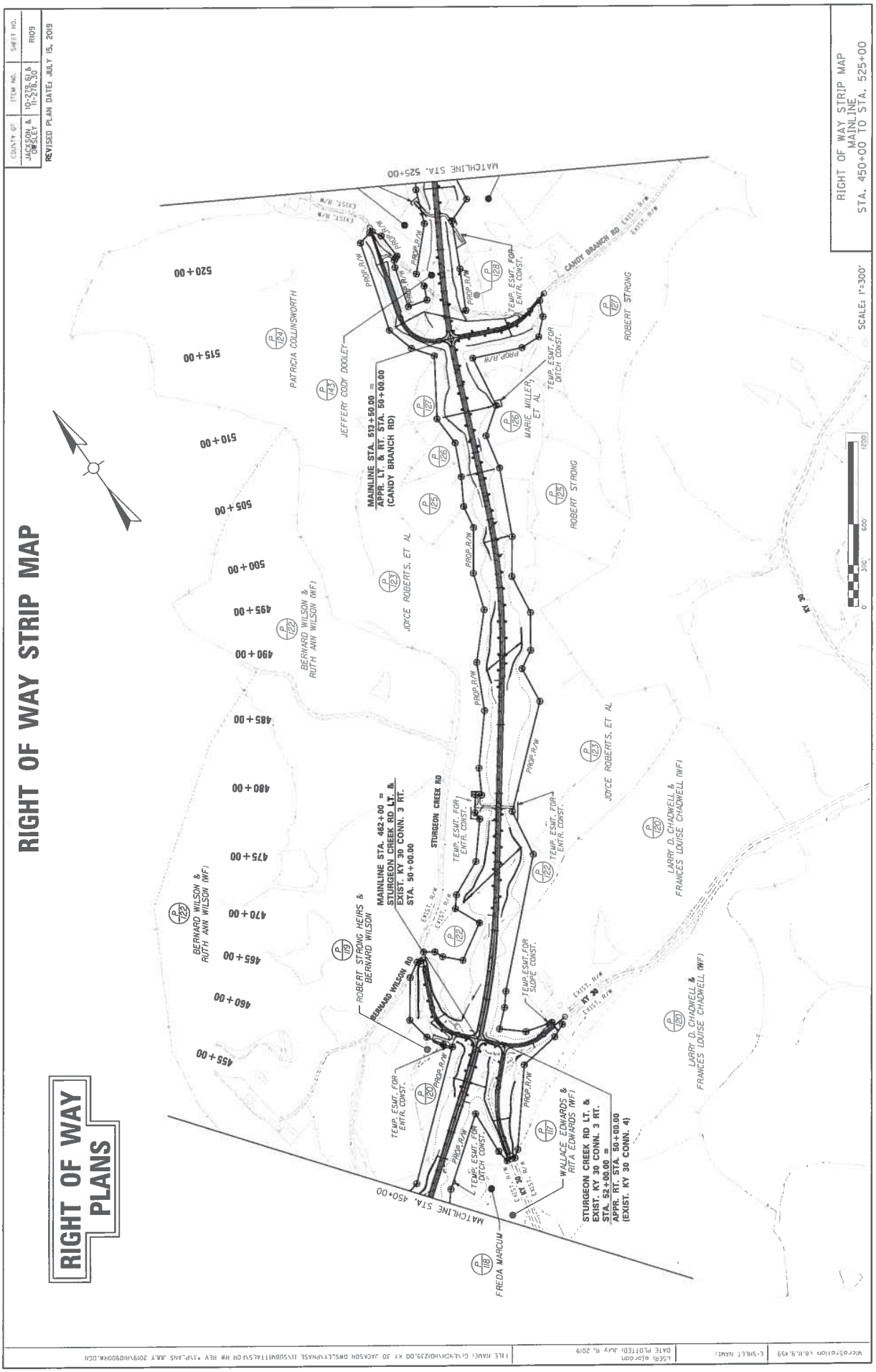
MicroStation V8.11.9.459 | E-SHELL NAME: | USER: mjordon | DATE PLOTTED: July 11, 2019 | FILE NAME: G:\ENGINEER\0219.00 KY 30 JACKSON CNTY\E-PHASE PLANS\SUBMITTALS\FOR RW REV *\SP-ANS JULY 2019\R104DRW.DGN

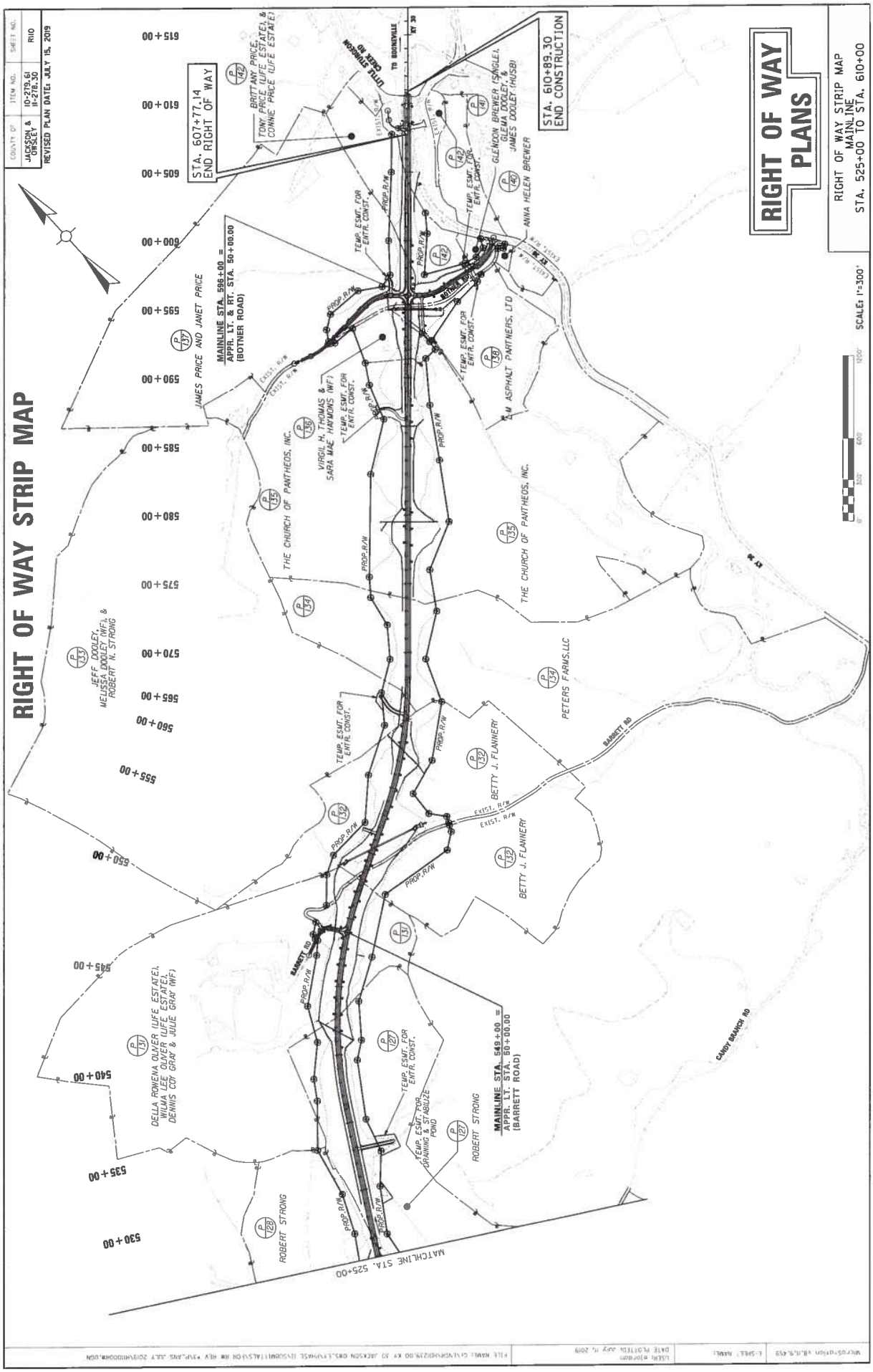

RIGHT OF WAY STRIP MAP
COUNTY OF: JACKSON & OWSLEY
ITEM NO.: 10-279.61 & 11-278.30
SHEET NO.: RI05
REVISED PLAN DATE: JULY 15, 2019
P 55 JOHN M. MOORE (HISTORIC)
P 65 LONNIE & YVONNE GABBARD
P 69 PAUL MARKS
P 70 JENNY L. YARBROUGH
P 71 TERRY & MICHELLE COOMER
P 74 RANDY & TERESA WHICKER
P 75 ELBERT & LEONA BOWLES
P 76 MARY BOWLES
P 78 LINDA DARLENE MADDEN
P 79 EDWARD & MAUDIE MADDEN
P 80 PHILLIP & LINDA AKEMON
P 80X PHILLIP & LINDA AKEMON
P 85 ALAN BOWLING
P 86 VERNON & NICKI BALDWIN
P 84 DONALD RAY CUNAGIN
P 87 RONNIE & SHARON HICKS
P 89 CLAUDE SR. & ADRIAN, & NEIL HUDSON
P 91 JOHN & SALLY HORNSBY
PERM. ESMT. FOR DRAINAGE
P 92 SHANNON & RHONDA ROBINSON
P 93 MARLON AND CARLA COFFEY
P 83 RENA RHNEA PRIVETT CONNER
P 88 KETTISHA & GAIL MCDOWELL KETTISHA MCDOWELL REV TRUST
P 90 IVAN MCQUEEN
P 160 MARLENE BALDWIN
P 81 CHESTER L. SMITH
P 14
P 803
MATCHLINE STA. 135+00
MATCHLINE STA. 215+00
MAINLINE STA. 148+00.00 = APPR. RT. STA. 50+00.00 (KY 1431 CONN. 2)
MAINLINE STA. 209+75.00 = APPR. LT. & RT STA. 50+00.00 (KY 1431 CONN. 3)
JACKSON DR
OAK DR
CLOVER DR
WOODLAND DR
ZEKES POINT RD
BIG BARN RD
STURGEON RD
KY 30
KY 1431
PROP. R/W
EXIST. R/W
EXIST & PROP. R/W
TEMP. ESMT. FOR ENTR. CONST.
TEMP. ESMT. FOR BLDG. REMOVAL
TEMP. ESMT. FOR SLOPE CONST.
140+00
145+00
150+00
155+00
160+00
165+00
170+00
175+00
180+00
185+00
190+00
195+00
200+00
205+00
210+00
IF ACCESS IS NEEDED TO PARCEL BOX FOR ANY REASON, CONTACT DARREN BACK AT THE KYTC DISTRICT 10 OFFICE.
SCALE: 1"=300'
RIGHT OF WAY STRIP MAP
MAINLINE
STA. 135+00 TO STA. 215+00
RIGHT OF WAY PLANS


RIGHT OF WAY STRIP MAP
RIGHT OF WAY PLANS
RIGHT OF WAY STRIP MAP
MAINLINE
STA. 215+00 TO STA. 295+00
SCALE: 1"=300'
COUNTY OF: JACKSON & OWSLEY
ITEM NO.: 10-278.00 & 11-278.30
SHEET NO.: R106
REVISED PLAN DATE: JULY 15, 2019
MATCHLINE STA. 295+00
MATCHLINE STA. 215+00
MAINLINE STA. 289+00.00= APPR. LT. & RT. STA. 50+00.00 (BATES VICKERS ROAD)
BATES VICKERS RD
BIG BARN RD
MADDRYTOWN RD
CR-1385A
KY 30
MARJORIE MADDEN, GALE MADDEN BOGGS, RICKY BOGGS, & CHRIS BOGGS
JAMES E.& SHEILA STRONG
TIM & RHONDA NEELEY
PHILLIP & LINDA AKEMON PHILLIP JR.& MELISSA AKEMON
EDWARD & SHEILA HARTSOCK
SHANNON & RHONDA ROBINSON
TEMP. ESMT. FOR ENTR. CONST.
TEMP. ESMT. FOR SLOPE CONST. & BLDG. REMOVAL
PROP. R/W
EXIST. R/W


RIGHT OF WAY STRIP MAP
RIGHT OF WAY PLANS
RIGHT OF WAY STRIP MAP
MAINLINE
STA. 295+00 TO STA. 375+00
SCALE: 1"=300'
COUNTY OF: JACKSON & OWSLEY
ITEM NO.: 10-278.00 & 11-218.30
SHEET NO.: R107
REVISED PLAN DATE: JULY 15, 2019
MATCHLINE STA. 375+00
MATCHLINE STA. 295+00
LENA FLANNERY, ET AL
WENDELL KILBURN & LINDA KILBURN (WF)
CYNTHIA BINGHAM & BRENT BINGHAM (HUSB)
DAVID MILLER & SANDRA MILLER (WF)
JASON WAYNE FLANNERY & JENNIFER M. WILSON
MICHAEL SCOTT FLANNERY
GERALD, RONALD, & EDWARD BOWLING
MARJORIE MADDEN, GAIL MADDEN BOGGS, RICKY BOGGS, & CHRIS BOGGS
CREECH RD
CANTRAMORE RD
WRIGHT RD
HADDENTOWN RD
CEMETERY RD
MADDEN
HICKORY FLAT FD
KY 30
PROP. R/W
EXIST. R/W
TEMP. ESMT. FOR ENTR. CONST.
TEMP. ESMT. FOR SLOPE CONST.
APPR. LT. STA. 48+90.00 (EXIST. KY 30 CONN. 1) =
APPR. LT. STA. 50+00.00 (EXIST. KY 30 CONN. 2)
EXISTING KY 30 NO. 2 STA. 48+85.00 = CREECH ROAD STA. 50+00.00
MAINLINE STA. 339+00.00 = APPR. LT. STA. 50+00.00 (EXIST. KY 30 CONN. 1)


RIGHT OF WAY PLANS
RIGHT OF WAY STRIP MAP
STA. 375+00 TO STA. 450+00
RIGHT OF WAY STRIP MAP
MAINLINE
SCALE: 1"=300'
COUNTY OF: JACKSON & OWSLEY
ITEM NO.: 10-278.50 & 11-278.50
SHEET NO.: R108
REVISED PLAN DATE: JULY 15, 2019
MATCHLINE STA. 450+00
MATCHLINE STA. 375+00
BERNARD WILSON & RUTH ANN WILSON (WF)
MICHAEL WILSON & WANDA WILSON (WF)
WALLACE EDWARDS & RITA EDWARDS (WF)
FREDA MARCUM
DONALD HURST & PEGGY HURST (WF)
KATHLEEN BROWN & ANNETTE OSBORNE
MAGNUM UNLIMITED, LLC
BRENT BINGHAM & CYNTHIA BINGHAM (WF)
CYNTHIA BINGHAM & BRENT BINGHAM (HUSB)
WENDELL KILBURN & LINDA KILBURN (WF)
HICKORY FLAT RD
TEMP. ESMT. FOR ENTR. CONST.
TEMP. ESMT. FOR SLOPE CONST.
TEMP. ESMT. FOR BLDG. REMOVAL
PROP. R/W
EXIST. R/W
JACKSON COUNTY
OWSLEY COUNTY
KY 30
KY 1071
445+00
440+00
435+00
430+00
425+00
420+00
415+00
410+00
405+00
400+00
395+00
390+00
385+00
380+00


RIGHT OF WAY STRIP MAP
RIGHT OF WAY PLANS
RIGHT OF WAY STRIP MAP
MAINLINE
STA. 450+00 TO STA. 525+00
SCALE: 1"=300'
COUNTY OF
JACKSON & OWSLEY
ITEM NO.
10-278.61 & 11-278.30
SHEET NO.
R109
REVISED PLAN DATE: JULY 15, 2019
MATCHLINE STA. 525+00
MATCHLINE STA. 450+00
MAINLINE STA. 513+50.00 = APPR. LT. & RT. STA. 50+00.00 (CANDY BRANCH RD)
MAINLINE STA. 462+00 = STURGEON CREEK RD LT. & EXIST. KY 30 CONN. 3 RT. STA. 50+00.00
STURGEON CREEK RD LT. & EXIST. KY 30 CONN. 3 RT. STA. 52+00.00 = APPR. RT. STA. 50+00.00 (EXIST. KY 30 CONN. 4)
CANDY BRANCH RD
STURGEON CREEK RD
BERNARD WILSON RD
KY 30
PROP. R/W
EXIST. R/W
TEMP. ESMT. FOR ENTR. CONST.
TEMP. ESMT. FOR DITCH CONST.
TEMP. ESMT. FOR SLOPE CONST.
PATRICIA COLLINSWORTH
JEFFERY CODY DOOLEY
MARIE MILLER, ET AL
ROBERT STRONG
JOYCE ROBERTS, ET AL
BERNARD WILSON & RUTH ANN WILSON (WF)
ROBERT STRONG HEIRS & BERNARD WILSON
LARRY D. CHADWELL & FRANCES LOUISE CHADWELL (WF)
WALLACE EDWARDS & RITA EDWARDS (WF)
FREDA MARCUM
520+00
515+00
510+00
505+00
500+00
495+00
490+00
485+00
480+00
475+00
470+00
465+00
460+00
455+00
0
300
600
1200


RIGHT OF WAY STRIP MAP
RIGHT OF WAY PLANS
RIGHT OF WAY STRIP MAP
MAINLINE STA. 525+00 TO STA. 610+00
COUNTY OF: JACKSON & OWSLEY
ITEM NO.: 10-279.61 11-276.30
SHEET NO.: R110
REVISED PLAN DATE: JULY 15, 2019
STA. 607+77.14 END RIGHT OF WAY
STA. 610+89.30 END CONSTRUCTION
MAINLINE STA. 598+00 = APPR. LT. & RT. STA. 50+00.00 (BOTNER ROAD)
MAINLINE STA. 549+00 = APPR. LT. STA. 50+00.00 (BARRETT ROAD)
MATCHLINE STA. 525+00
SCALE: 1"=300'
TO BOONEVILLE
KY 30
LITTLE CREEK RD
BOTNER RD
BARRETT RD
CANDY BRANCH RD
BRITTANY PRICE (LIFE ESTATE), & CONNIE PRICE (LIFE ESTATE)
GLENDON BREWER (EAGLE), GLEMA DOOLEY, & JAMES DOOLEY (HUSB)
ANNA HELEN BREWER
JAMES PRICE AND JANET PRICE
ASPHALT PANTHERS, LTD
THE CHURCH OF PANTHEOS, INC.
VIRGIL H. THOMAS & SARA MAE HAYMONS (WF)
JEFF DOOLEY, MELISSA DOOLEY (WF), & ROBERT N. STRONG
PETERS FARMS,LLC
BETTY J. FLANNERY
DELLA ROWENA OLIVER (LIFE ESTATE), WILMA LEE OLIVER (LIFE ESTATE), DENNIS COY GRAY & JULIE GRAY (WF)
ROBERT STRONG
TEMP. ESMT. FOR ENTR. CONST.
PROP. R/W
EXIST. R/W
TEMP. ESMT. FOR DRAINING STARBUZE POND

SPECIAL NOTE

Ground Disturbance Restriction
For Required Archaeological Survey

Owsley and Jackson Counties
Item No. 10-279.61/11-278.30

DUE TO THE REQUIREMENT FOR AN ARCHEOLOGICAL SURVEY TO DETERMINE THE POSSIBLE PRESENCE OF ARCHAEOLOGICAL RESOURCES, NO GROUND DISTURBANCE MUST OCCUR AT THESE LOCATIONS UNTIL CLEARANCE IS GRANTED BY KYTC.

LOCATION:
Parcels: 49, 52, 53, 54, 55, 61, 80, 81, 84, 85, 86, 87, 88, 90, 92, 94, 95, 96, 97, 99, 100, 102, 104, 105, 106, 107, 108, 110, 111, 113, 115, 118, 120, 122, 123, 126, 127, 128, 131, 132, 135, 136.

SEE ATTACHED MAPPING FOR IDENTIFIED PARCEL LOCATIONS.

STIPULATIONS:

1 – The contractor shall ensure that no construction activities will occur on these parcels until clearance to proceed is granted by KYTC. Any questions regarding the status of archeological survey work can be directed to the following:

Susan Neumeyer, Archaeologist, Division of Environmental Analysis, KYTC. (502) 564-7250
Brandon Baker, Environmental Coordinator, District 10 Office, KYTC. (606) 666-8841
Josh Higgins, Environmental Coordinator, District 11 Office, KYTC. (606) 598-2154

2 – Once archaeological clearance has been obtained for Parcels 49, 52, 53, 54, 55, 61, 80, 81, 84, 85, 86, 87, 88, 90, 92, 94, 95, 96, 97, 99, 100, 102, 104, 105, 106, 107, 108, 110, 111, 113, 115, 118, 120, 122, 123, 126, 127, 128, 131, 132, 135, 136 and the site is clear for construction, the contractor will be notified by KYTC Division of Environmental Analysis Personnel.

3 – Any ground disturbance prior to receiving clearance from KYTC environmental personnel falls under the responsibility of the contractor. If Parcels 49, 52, 53, 54, 55, 61, 80, 81, 84, 85, 86, 87, 88, 90, 92, 94, 95, 96, 97, 99, 100, 102, 104, 105, 106, 107, 108, 110, 111, 113, 115, 118, 120, 122, 123, 126, 127, 128, 131, 132, 135, 136 are damaged by ground disturbance prior to clearance being obtained, the contractor will be responsible for all reasonable costs to mitigate the damage.

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

SPECIAL NOTE
For Tree Removal

Jackson & Owsley Counties
KY-30 Reconstruction
Item Nos. 10-279.61 & 11-278.30

HABITAT TYPE A:
NO CLEARING OF TREES 5 INCHES OR GREATER (DIAMETER BREAST HEIGHT) FROM JUNE 1 - JULY 31 BETWEEN STA. 88+00 (BEGINNING TERMINUS NEAR US-421) AND STA. 209+75 (NEAR KY-1431 CONNECTOR).

AND

HABITAT TYPE B:
NO CLEARING OF TREES 5 INCHES OR GREATER (DIAMETER BREAST HEIGHT) FROM APRIL 1 - NOVEMBER 14 BETWEEN STA. 209+75 (NEAR KY-1431 CONNECTOR) AND STA. 583+50.

AND

HABITAT TYPE C:
NO CLEARING OF TREES 5 INCHES OR GREATER (DIAMETER BREAST HEIGHT) FROM APRIL 1 - NOVEMBER 14 BETWEEN STA. 583+50 AND STA. 610+89.30 (END TERMINUS NEAR BOTNER ROAD).

ADDITIONALLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR RECORDING AND REPORTING THE PROGRESS OF TREE REMOVAL BY HABITAT TYPE (A vs. B vs. C) THROUGHOUT THE ENTIRE PROJECT LENGTH (INCLUDING ANY EXCESS MATERIAL SITES, VALUE ENGINEERING AREAS, ETC.). REPORTING SHALL IDENTIFY THE LOCATION(S) CLEARED ON AERIAL MAPPING OF THE PROJECT AREA AND ALSO LIST THE ACREAGE OF FORESTED HABITAT REMOVED PER HABITAT TYPE SINCE THE PREVIOUS REPORTING PERIOD.

REPORTS SHALL BE PRODUCED BY THE CONTRACTOR AND PROVIDED TO KYTC DIVISION OF ENVIRONMENTAL ANALYSIS (DAVE HARMON; dave.harmon@ky.gov) **BY APRIL 15** (FOR THE PERIOD RUNNING NOVEMBER 15 THROUGH MARCH 31) **AND AGAIN BY DECEMBER 1** (FOR THE PERIOD RUNNING APRIL 1 THROUGH NOVEMBER 14). REPORTING EFFORTS SHALL START IN YEAR 2019 AND CONTINUE UNTIL PROJECT COMPLETION.

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

SPECIAL NOTE FOR PIPELINE INSPECTION

1.0 DESCRIPTION. The Department will perform visual inspections on all pipe on the project. A video inspection will be required on projects having more than 250 linear feet of storm sewer and/or culvert pipe and on routes with an ADT of greater than 1,000 vehicles. Conduct video inspections on all pipe located under the roadway and 50 percent of the remaining pipe not under the roadway. Storm sewer runs and outfall pipes not under the roadway take precedence over rural entrance pipes. Contractors performing this item of work must be prequalified with the Department in the work type J51 (Video Pipe Inspection and Cleaning). Deflection testing shall be completed using a mandrel in accordance with the procedure outlined below or by physical measurement for pipes greater than 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 INTELLIGENT COMPACTION OF ASPHALT MIXTURES

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. Provide and use Intelligent Compaction (IC) Rollers for compaction of all asphalt mixtures.

2.0 MATERIALS AND EQUIPMENT. In addition to the equipment specified in Subsection 403.02, a minimum of one (1) IC roller is to be used on the project at all times, two (2) IC rollers will be required when the paving train consists of three (3) or more rollers. The Contractor is to only use the IC roller(s) for compaction as the breakdown and/or intermediate roller(s). All IC rollers will meet the following minimum characteristics:

1. Are self propelled double-drum vibratory rollers equipped with accelerometers mounted in or about the drum to measure the interactions between the rollers and compacted materials in order to evaluate the applied compactive effort. The IC rollers must have the approval of the Engineer prior to use. Examples of rollers equipped with IC technology can be found at www.IntelligentCompaction.com.
2. Are equipped with non-contact temperature sensors for measuring pavement surface temperatures.
3. The output from the roller is designated as the IC-MV which represents the stiffness of the materials based on the vibration of the roller drums and the resulting response from the underlying materials.
4. Are equipped with integrated on-board documentation systems that are capable of displaying real-time color-coded maps of IC measurement values including the stiffness response values, location of the roller, number of roller passes, machine settings, together with the material temperature, speed and the frequency and amplitude of roller drums. Ensure the display unit is capable of transferring the data by means of a cloud based system.
5. Are equipped with a mounted Global Positioning System GPS radio and receiver either a Real Time Kinematic (RTK-GPS) or Global Navigational Satellite System (GNSS) units that monitor the location and track the number of passes of the rollers. Accuracy of the positioning system is to be a minimum of 12 inches. Data is to be transferred to the Cabinet via a cloud based system within 30 minutes of collection.

3.0 WORK PLAN. Submit to the Engineer an IC Work Plan at the Preconstruction Conference and at least 2 weeks prior to beginning construction. Describe in the work plan the following:

1. Compaction equipment to be used including:
    - Vendor(s)
    - Roller model(s),
    - Roller dimensions and weights,
    - Description of IC measurement system,
    - GPS capabilities,
    - Documentation system,
    - Temperature measurement system, and
    - Software.

2. Roller data collection methods including sampling rates and intervals and data file types.
3. Transfer of data to the Engineer including method, timing, and personnel responsible. At the preconstruction meeting, provide the Cabinet with rights to allow for web access to the data file location. Access to the data is not to be hindered in any way. The Contractor will provide the Cabinet with any vendor specific software, user id, passwords, etc. needed to access the data through this service, cost of this access is incidental to the thermal profile bid item. The Cabinet is to have access to all data as it is being collected. If a third party is used for collecting and distributing the data the Cabinet is to have the same access rights and time as the Contractor.
4. Training plan and schedule for roller operators, project foreman, project surveyors, and Cabinet personnel; including both classroom and field training. Training should be conducted at least 1 week before beginning IC construction. The training is to be performed by a qualified representative(s) from the IC Roller manufacture(s) to be used on the project. This training shall include how to access and use the data from the cloud data source.

4.0 CONSTRUCTION. Do not begin work until the Engineer has approved the IC submittals and the IC equipment.

Follow requirements established in Section 400 for production and placement, materials, equipment, acceptance plans and adjustments except as noted or modified in this Specification. Provide the Engineer at least one day's notice prior to beginning construction or prior to resuming production if operations have been temporarily suspended. Ensure paving equipment complies with all requirements specified in Section 400. The IC roller temperatures will be evaluated by the Department with the data from a Paver Mounted Infrared Temperature Gauge.

A. Pre-Construction Test Section(s) Requirements.

Three to five days prior to the start of production, ensure the proper setup of the GPS, IC roller(s) and the rover(s) by conducting joint GPS correlation and verification testing between the Contractor, GPS representative and IC roller manufacturer using the same datum.

1. Ensure GPS correlation and verification testing includes the following minimum processes:

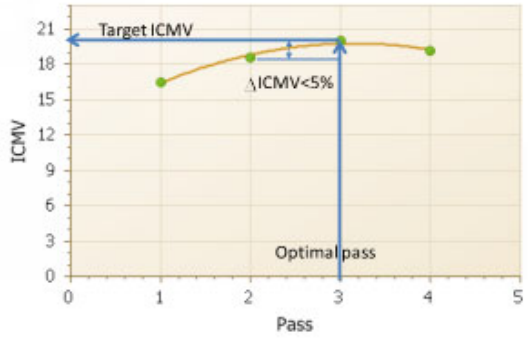
    a. Establish the GPS system to be used either one with a base station or one with mobile receivers only. Ensure all components in the system are set to the correct coordinate system; then,
    b. Verify that the roller and rover are working properly and that there is a connection with the base station; then,
    c. Record the coordinates of the two edges where the front drum of the roller is in contact with the ground from the on-board, color-coded display; then,
    d. Mark the locations of the roller drum edges and move the roller, and place the mobile receiver at each mark and record the readings; then,

2. Compare coordinates between the roller and rover receivers. If the coordinates are within 12.0 in. of each other, the comparison is acceptable. If the coordinates are not within 12.0 in., diagnose and perform necessary corrections and repeat the above steps until verification is acceptable.
3. Do not begin work until acceptable GPS correlation and verification has been obtained.
4. The Contractor and the Department should conduct random GPS verification testing during production to ensure data locations are accurate. The recommended rate is once per day with a requirement of at least once per week.
5. All acceptance testing shall be as outlined in Standard Specifications section 400.

B. Construction Test Section(s) Requirements.

Construct test section(s) at location(s) agreed on by the Contractor and the Engineer within the project limits. The test section is required to determine a compaction curve of the asphalt mixtures in relationship to number of roller passes and to the stiffness of mixture while meeting the Department in-place compaction requirements. All rollers and the respective number of passes for each is to be determined via control strip each time a material change, equipment change or when the Engineer deems necessary.

Conduct test section(s) on every lift and every asphalt mixture. Ensure test section quantities of 500 to 1,000 tons of mainline mixtures. Operate IC rollers in the low to medium amplitude range and at the same settings (speed, frequency) throughout the section while minimizing overlapping of the roller, **the settings are to be used throughout the project with no changes.** After each roller pass, the qualified technician from the contractor observed by the Department will use a nondestructive nuclear gauge that has been calibrated to the mixture to estimate the density of the asphalt at 10 locations uniformly spaced throughout the test section within the width of a single roller pass. The density readings and the number of roller passes needed to achieve the specified compaction will be recorded. The estimated target density will be the peak of the average of the nondestructive readings within the desired compaction temperature range for the mixture. The IC roller data in conjunction with the Veda software will create an IC compaction curve for the mixture. The target IC-MV is the point when the increase in the IC-MV of the material between passes is less than 5 percent on the compaction curve. The IC compaction curve is defined as the relationship between the IC-MV and the roller passes. A compaction curve example is as follows:



Subsequent to the determination of the target IC-MV, compact an adjoining > 250 < 500 tons section using same roller settings and the number of estimated roller passes and allow the Department to verify the compaction with the same calibrated nondestructive nuclear gauge following the final roller pass. **The Department will obtain cores at 10 locations (No cores for calibration are to be taken in the surface layer, use non-destructive density results only!!)** uniformly spaced throughout the test section within the width of the single roller. Obtain GPS measurement of the core locations with a GPS rover. Use the Veda software to perform least square linear regression between the core data and IC-MV in order to correlate the production IC-MV values to the Department specified in-place air voids. A sample linear regression curve example is as follows.



C. Construction Requirements.

Use the IC roller on all lifts and types of asphalt within the limits of the project.

Ensure the optimal number of roller passes determined from the test sections has been applied to a minimum coverage of 80% of the individual IC Construction area. Ensure a minimum of 75% of the individual IC Construction area meets the target IC-MV values determined from the test sections.

Do not continue paving operations if IC Construction areas not meeting the IC criteria are produced until they have been investigated by the Department. Obtain the Engineer's approval to resume paving operations. Non-IC rollers are allowed to be used as the third roller on the project; one of the breakdown or the finish rollers is to be equipped with IC technology.

IC Construction areas are defined as subsections of the project being worked continuously by the Contractor. The magnitude of the IC Construction areas may vary with production but must be at least 750 tons per mixture for evaluation. Partial IC Construction areas of < 750 tons will be included in the previous area evaluation. IC Construction areas may extend over multiple days depending on the operations.

The IC Construction Operations Criteria does not affect the Department's acceptance processes for the materials or construction operations

5.0 MEASUREMENT. The Department will measure the total tons of asphalt mixtures compacted using the IC roller(s). Compaction is to be performed by a minimum of one (1) IC roller for a two (2) roller operation and a minimum of two (2) IC rollers when three (3) or more rollers are used for compaction. Material compacted by rollers not equipped with properly functioning IC equipment will not be accepted for payment of the bid item asphalt mixtures IC rolled. Use of

non-IC rollers can be accepted on small areas due to equipment malfunctions at the written approval of the Engineer. Paving operations should be suspended for equipment malfunctions that will extend over three days of operation.

Data is to be transferred to the cabinet in usable form no later than 30 minutes after collection. Data is to be transferred via a cloud based system.

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

1. Payment is full compensation for all work associated with providing IC equipped rollers, laptop computer, transmission of electronic data files, two copies of IC roller manufacturer software, and training.
2. Delays due to GPS satellite reception of signals to operate the IC equipment or IC roller breakdowns will not be considered justification for contract modifications or contract extensions.
3. Delays in data transfer will result in a reduction payment. Delays over 1 hour after collection are 75% pay, over 90 minutes are 50% pay, over 2 hours are 25% pay.

Code	Pay Item	Pay Unit
24781EC	Intelligent Compaction for Asphalt	Ton

March 14, 2019

SPECIAL NOTE FOR PAVER MOUNTED TEMPERATURE PROFILES

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. Provide a paver mounted infrared temperature equipment to continually monitor the temperature of the asphalt mat immediately behind all paver(s) during the placement operations for all mainline pavements (including ramps for Interstates and Parkways) within the project limits. Provide thermal profiles that include material temperature and measurement locations.

2.0 MATERIALS AND EQUIPMENT. In addition to the equipment specified in Subsection 403.02 Utilize a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing as needed during the Project to maintain equipment within specifications and requirements.

Provide operator settings, user manuals, required viewing/export software for analysis. Ensure the temperature equipment will meet the following:

A. A device with one or more infrared sensors that is capable of measuring in at least 1 foot intervals across the paving width, with a minimum width of 12 feet, or extending to the recording limits of the equipment, whichever is greater. A **Maximum of two (2)** brackets are allowed in the influence area under the sensors. A temperature profile must be made on at least 1 foot intervals longitudinally down the road:
B. Infrared sensor(s):
   1. Measuring from 32°F to 400°F with an accuracy of ± 2.0% of the sensor reading.
C. Ability to measure the following:
   1. The placement distance using a Global Positioning System (GPS) or a Distance Measuring Instrument (DMI) and a Global Positioning System (GPS).
   2. Stationing
D. GPS: Accuracy ± 4 feet in the X and Y Direction
E. Latest version of software to collect, display, retain and analyze the mat temperature readings during placement. The software must have the ability to create and analyze:
   1. Full collected width of the thermal profiles,
   2. Paver speed and
   3. Paver stops and duration for the entire Project.
F. Ability to export data automatically to a remote data server ("the cloud").
   At the preconstruction meeting, provide the Cabinet with rights to allow for web access to the data file location. Access to the data is not to be hindered in any way. The Contractor will provide the Cabinet with any vendor specific software, user id, passwords, etc. needed to access the data through this service, cost of this access is incidental to the thermal profile bid item. The Cabinet is to have access to all data as it is being collected. If a third party is used for collecting and distributing the data the Cabinet is to have the same access rights and time as the Contractor.
   This web-based software must also provide the Department with the ability to download the raw files and software and to convert them into the correct format.
G. The thermal profile data files must provide the following data in a neat easy to read table format.
   1. Project information including Road Name and Number, PCN, Beginning and Ending MPs.
   2. IR Bar Manufacturer and Model number
   3. Number of Temperature Sensors (N)
   4. Spacing between sensors and height of sensors above the asphalt mat
   5. Total number of individual records taken each day (DATA BLOCK)
      a. Date and Time reading taken
      b. Latitude and Longitude
      c. Distance paver has moved from last test location
      d. Direction and speed of the paver
      e. Surface temperature of each of the sensors

3.0 CONSTRUCTION. Provide the Engineer with all required documentation at the pre-construction conference.

A. Install and operate equipment in accordance with the manufacturer's specifications.
B. Verify that the temperature sensors are within ± 2.0% using an independent temperature device on a material of known temperature. Collect and compare the GPS coordinates from the equipment with an independent measuring device.
    1. Ensure the independent survey grade GPS measurement device is calibrated to the correct coordinate system (using a control point), prior to using these coordinates to validate the equipment GPS.
    2. The comparison is considered acceptable if the coordinates are within 4 feet of each other in the X and Y direction.
C. Collect thermal profiles on all mainline pavements during the paving operation and transfer the data to the "cloud" network or if automatic data transmission is not available, transfer the data to the Engineer at the end of daily paving.
D. Contact the Department immediately when System Failure occurs. Daily Percent Coverage will be considered zero when the repairs are not completed within two (2) working days of System Failure. The start of this two (2) working day period begins the next working day after System Failure.
E. Evaluate thermal profile segments, every 150 feet, and summarize the segregation of temperature results. Results are to be labeled as Minimal 0°-25°F, Moderate 25.1°-50°F and Severe >50°. Severe readings over 3 consecutive segments or over 4 or more segments in a day warrant investigation on the cause of the differential temperature distribution.

4.0 MEASUREMENT. The Department will measure the total area of the pavement lanes mapped by the infrared scanners. Full payment will be provided for all lanes with greater than 85% coverage. Partial payment will be made for all areas covered from 50% coverage to 85% coverage at the following rate Coverage area percentage X Total bid amount. And area with less than 50% coverage will not be measured for payment.

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

1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.
2. Delays due to GPS satellite reception of signals or equipment breakdowns will not be considered justification for contract modifications or contract extensions.

Code	Pay Item	Pay Unit
24891EC	Pave Mount Infrared Temp Equipment	Square Foot

March 14, 2019

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)
10-279.61 (11-278.3)	Owsely / Jackson Counties	12FO FD52 095 6898202R	STP 0302 (020)

PROJECT DESCRIPTION

Reconstruct KY 30 from KY 847 in Owsely County to US 421 in Jackson County.

☐ **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	80	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed	66		
Condemnation	14		
Signed ROE	14		

Notes/ Comments (Use Additional Sheet if necessary)
2 item numbers are listed above due to the fact that the project is located in 2 counties / 2 districts. The project is being let as one large project which covers both item number limits. 10-279.61 is the main item number for the project; 11-278.3 is shown only as a reference.

LPA RW Project Manager		Right of Way Supervisor	
Printed Name		Printed Name	Aric Skaggs
Signature		Signature	Aric T. Skaggs 2019.06.13 11:10:16 -04'00'
Date		Date	June 13, 2019
Right of Way Director		**FHWA**	
Printed Name	Digitally signed by DM Loy	Printed Name	No Signature Required as per FHWA-KYTC Current Stewardship Agreement
Signature	DM Loy Date: 2019.06.13 13:32:45 -04'00'	Signature	
Date		Date	

UTILITIES AND RAIL CERTIFICATION NOTE

JACKSON & OWSLEY COUNTIES
00STP 0302 023
FD52 055 68982 02U
FD52 095 68982 02U
Mile point: 0.000 TO 5.132 (OWSLEY) 9.12 TO 17.52 (JACKSON)
IMPROVE KY-30 FROM KY-847 IN OWSLEY COUNTY TO US 421 IN JACKSON COUNTY. (LET W/ JACKSON CO. SECTION UNDER 11-278.30)(SEE 10-279.60 FOR PE & ENVIR)(AR/W)(14CCR)(16CCR)(18CCR)
ITEM NUMBER: 10-279.61 / 11-278.30

PROJECT NOTES ON UTILITIES

Estimated Relocation June 30, 2020

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

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

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

UTILITIES AND RAIL CERTIFICATION NOTE

JACKSON & OWSLEY COUNTIES
00STP 0302 023
FD52 055 68982 02U
FD52 095 68982 02U
Mile point: 0.000 TO 5.132 (OWSLEY) 9.12 TO 17.52 (JACKSON)
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ITEM NUMBER: 10-279.61 / 11-278.30

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

Jackson Energy, East Kentucky Power and Peoples Rural Telephone Company (PRTC) will have existing (to remain in place) and relocated overhead facilities at various locations throughout the project. The contractor shall perform work in proximity with these relocated facilities, generally performing work under or adjacent the overhead facilities. The contractor shall choose the appropriate equipment and construction methods to maintain a safe working distance from these facilities. Relocations of PRTC facilities and East Kentucky Power facilities are expected to be ongoing after the project award. As-built plans will be furnished to the contractor as soon as available.

An existing Delta Gas transmission line will be present at station 194+50. No work or equipment shall be allowed within 50 feet of this existing crossing. This facility will be relocated after partial construction of the proposed roadway.

A newly relocated pole owned by Jackson Energy exists within the disturbed limits at approximate Station 124+00, right of centerline. Minor excavation around this pole will be required by the contractor. Exercise caution in completion of excavation and final grading in the vicinity of this facility to avoid damage.

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

Jackson County Water Association – Estimated Completion Date is 8/01/19

Jackson Energy - Complete

UTILITIES AND RAIL CERTIFICATION NOTE

JACKSON & OWSLEY COUNTIES
00STP 0302 023
FD52 055 68982 02U
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ITEM NUMBER: 10-279.61 / 11-278.30

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

Delta Gas, East Kentucky Power and PRTC have facilities that will have ongoing relocations at the following ranges of mainline stations and various approach stations:

Station 194+50 - Delta Gas
An existing Delta Gas transmission line will be present at station 194+50. No work or equipment shall be allowed within 50 feet of this existing crossing. This facility will be relocated after partial construction of the proposed roadway. The contractor will be required to work in close proximity to this existing line to construct the full mainline template to subgrade between Station 185+00 to Station 194+00 prior to the gas line relocation. Contact Craig Mitchell at (859) 744 6171, email CMitchell@Deltagas.com a minimum of two weeks prior to beginning any work within 75' of this facility including crossing this facility with equipment. The contractor will notify Phillip Howard, Utility Coordinator, HMB Professional Engineers, (502) 695 9800, email PHoward@HMBPE.com upon completion of grade and drain construction between Station 185+00 to Station 194+00 in order to schedule the Delta Gas transmission line relocation work. Delta Gas will require a minimum of 90 days to complete their relocation after notification to proceed is received. Avoid any further work in the vicinity of the existing or proposed gas line until the transmission line relocation is completed. After completion of the transmission line relocation, the contractor will resume operations conducting in a manner to not damage the newly installed facility.

Station 105+00 to 130+00 – East Kentucky Power
Relocation of the East Kentucky Power transmission line will be complete prior to February 28, 2020.

Station 88+00 to Station 209+75 – PRTC
Relocation of PRTC facilities will be complete this section by October 15, 2019.

Station 209+75 to Station 610+89.30
Relocation of PRTC facilities will be complete this section by November 15, 2019.

UTILITIES AND RAIL CERTIFICATION NOTE

JACKSON & OWSLEY COUNTIES
00STP 0302 023
FD52 055 68982 02U
FD52 095 68982 02U
Mile point: 0.000 TO 5.132 (OWSLEY) 9.12 TO 17.52 (JACKSON)
IMPROVE KY-30 FROM KY-847 IN OWSLEY COUNTY TO US 421 IN JACKSON COUNTY. (LET W/ JACKSON CO. SECTION UNDER 11-278.30)(SEE 10-279.60 FOR PE & ENVIR)(AR/W)(14CCR)(16CCR)(18CCR)
ITEM NUMBER: 10-279.61 / 11-278.30

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

City of Booneville – Water

The contractor is clear to begin work in locations in the following areas in which there are no known utility conflicts:

Station 100+00 to 105+00 (including Approach Right of Station 108+10) upon Notice to Proceed.
Station 130+00 to 209+75 after October 15, 2019.
Station 209+75 to 610+89 after November 15, 2019

The contractor may work installing access roads, minor grading, performing tree cutting, installing pipe pads and installing drainage structures in any location on the project that a safe distance can be maintained from existing utilities while utility relocations are in progress with coordination with the companies.

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ No Rail Involvement ☐ Rail Involved ☐ Rail Adjacent

Form Revised 6/24/16

UTILITIES AND RAIL CERTIFICATION NOTE

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AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
C&W Cable, Inc.	5456 KY 3630 Annville KY 40402	Brett Williams	606-364-5357	N/A
City of Booneville - Sewer	PO Box 1 Booneville Ky 41314	David Hall	6064548506	N/A
Delta Natural Gas Company, Inc. - Natural Gas	3617 Lexington Road Winchester KY 40391	Craig Mitchell	8597446171	CMITCHELL@DeltaGas.com
East Kentucky Power Cooperative, Inc. - Electric	PO Box 707 Winchester KY 40391	Madison Edwards	8597459447	Madison.edwards@EKPC.coop
Jackson County Water Association, Inc. - Water	200 Buleah Lake Rd, Mckee KY 40447	Sammy Creech	6062877000	jcwa@prtcnet.org
Jackson Energy Cooperative Corporation - Electric	115 Jackson Energy Lane McKee KY 40447	Rick Caudill	6063649217	rickcaudill@jacksonenergy.com
People's Rural Telephone/TV - CATV	P.O. Box 159 McKee KY 40447	Keith Gabbard	6062877101	Keith.gabbard@prtc.org

10-279.61 / 11-278.30

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 look for a list of preapproved or prequalified contractors at the end of these general notes as identified above before bidding. Only contractors shown to be prequalified or preapproved by the utility owner on the following list(s) will be allowed to work on that utility as a part of this contract.

Any utility contractor that is not listed as prequalified or preapproved when the project is advertised for bid and wishes to be added must make request through the KYTC Contract Procurement website. The request should be made at least one week prior to the bidding deadline to allow for review and posting on the KYTC Contract Procurement website. A contractor is only considered prequalified or preapproved when

published on the KYTC Contract Procurement website. Contractors that contact the utility owner directly for preapproval or prequalification without contacting KYTC will not be considered for preapproval or prequalification for this contract. Contractors that are not prequalified or preapproved through KYTC before the bidding deadline will not be considered for prequalification or preapproval after bidding.

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.

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:

None

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.

nesbitt engineering, inc.
providing proven solutions since 1976
227 North Upper Street
Lexington, KY 40507-1016

Technical Specifications

KY 30 Waterline Relocation
City of Booneville Waterworks
Owsley County, Kentucky
10-279.61

March 2018

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SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 WORK INCLUDED

The Contractor shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, service, other necessary supplies and perform all work including all excavation and backfilling (without additional compensation, except where specifically set out in these specifications) at the unit or lump sum bid price for the items or work described under PART 2 of this section.

1.02 PROGRESS AND PAYMENTS SCHEDULES

A. Within fifteen (15) days after the date of formal execution of the AGREEMENT, the Contractor shall prepare and submit to the Engineer, for approval, a construction schedule which depicts the Contractor's plan for completing the contract requirements and show work placement in dollars versus contract time. The Contractor's construction schedule must be approved by the Engineer before any payments will be made on this contract.

B. Within fifteen (15) days after the date of formal execution of the CONTRACT AGREEMENT, the Contractor shall prepare and submit to the Engineer, for approval, a periodic estimate which depicts the Contractor's cost for completing the contract requirements and show by major unit of the project work, the Contractor's dollar value for the material and the labor (two separate amounts) to be used as a basis for the periodic payments. The Contractor's periodic estimate must be approved by the Engineer before any payments will be made on this contract.

C. The Engineer's decision as to sufficiency and completeness of the Contractor's construction schedule and periodic estimate will be final.

D. The Contractor must make current, to the satisfaction of the Engineer, the construction schedule and periodic estimate each time he requests a payment on this contract.

E. The Contractor's construction schedule and periodic estimate must be maintained at the construction site available for inspection and shall be revised to incorporate approved change orders as they occur.

F. When the Contractor requests a payment on this contract, it must be on the approved periodic estimate and be current. Further, the current periodic estimate and construction schedule (both updated and revised) shall be submitted for review and approval by the Engineer before monthly payments will be made by the Owner. The Contractor shall submit six (6) current copies of each (periodic estimate and construction schedule) when requesting payment.

1.03 CONDITIONS FOR PAYMENT

A. The Owner will make payments for acceptable work in place and materials properly stored on-site. The value of payment shall be as established on the approved construction schedule and periodic estimate, EXCEPT the Owner will retain ten percent (10%) of the work in place and a percentage as hereinafter listed for items properly stored or untested.

B. No payment will be made for stored materials unless a proper invoice from the supplier is attached to the pay request. Further, no item whose value is less than $1,000.00 will be considered as stored materials for pay purposes.

C. Payment for pipeline items shall be limited to eighty percent (80%) of the bid price until the pipeline items have been tested and accepted by the Engineer.

D. Payment for equipment items shall be limited to eighty-five percent (85%) of their scheduled value (materials portion only) until they are set in place. Eighty-five percent (85%) payment for stored materials and equipment shall be contingent on proper on-site storage as recommended by the manufacturer or required by the Engineer.

E. Payment for equipment items set in-place shall be limited to ninety percent (90%) of their scheduled value until they are ready for operation and have been certified by the manufacturer. Ninety percent (90%) payment for installed equipment shall be contingent on proper routine maintenance of the equipment in accordance with the manufacturer's recommendations.

F. Payment for equipment items set in place and ready for operation shall be limited to ninety-five percent (95%) of their scheduled value until all acceptance tests have been completed and the required manufacturer's pre-startup operator's training has been completed.

G. Payment for the labor portion of equipment items will be subject only to the degree of completeness and the appropriate retainage.

H. The Owner may reduce the percent of retainage once the project has achieved satisfactory progress and is at the fifty percent (50%) mark. If the percent of retainage is reduced, the dollar amount of retainage for work-in-place will not be reduced but will remain constant following the fifty percent (50%) constructed status. The retainage on the equipment items shall be determined as defined hereinbefore.

I. Additionally, the Owner may reinstate the retainage to a full ten percent (10%) of the scheduled value of work-in-place and material items should the Owner, at its discretion, determine that the Contractor is not making satisfactory progress or there is other specific cause for such withholding.

1.04 CLAIMS FOR EXTRA WORK

A. If the Contractor claims that any instructions by Drawings or otherwise involve extra cost, he shall give the Engineer written notice of said claim within ten (10) days after the receipt of such instructions, and in any event before proceeding to execute the work, stating clearly and in detail the basis of his claim or claims. No such claim shall be valid unless so made.

B. Claims for additional compensation for extra work, due to alleged errors in spot elevations, contour lines, or bench marks, will not be recognized unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material, or performing more work than would reasonably be estimated from the Drawings and/or topographical maps issued.

C. Any discrepancies which may be discovered between actual conditions and those represented by the topographical maps and/or Drawings shall at once be reported to the Engineer, and work shall not proceed, except at the Contractor's risk, until written instructions have been received by him from the Engineer.

D. If, on the basis of the available evidence, the Engineer determines that an adjustment of the Contract Price or time is justifiable, the procedure shall then be as provided herein for "Changes in the Work".

E. By execution of this Contract, the Contractor warrants that he has visited the site of the proposed work and fully acquainted himself with the existing site conditions relating to construction and labor, and that he fully understands the facilities, difficulties, and restrictions attending the execution of the work under this Contract. The Contractor further warrants that he has thoroughly examined and is familiar with the Drawings, Specifications and all other documents comprising the Contract. The Contractor further warrants that by execution of this Contract his failure when he was bidding on this Contract to receive or examine any form, instrument or document, or to visit the site and acquaint himself with conditions there existing, in no way relieves him from any obligation under the Contract, and the Contractor agrees that the Owner shall be justified in rejecting any claim based on facts regarding which he should have been on notice as a result thereof.

1.05 DETERMINATION OF THE VALUE OF EXTRA (ADDITIONAL) OR OMITTED WORK

A. The value of extra (additional) or omitted work shall be determined in one or more of the following ways:

1. On the basis of the actual cost of all the items of labor (including on-the-job supervision), materials, and use of equipment, plus a maximum 15 percent for added work or a minimum 15 percent for deleted work which shall cover the Contractor's general supervision,

overhead and profit. In case of subcontracts, the 15 percent (maximum for added work and minimum for deleted work) is interpreted to mean the subcontractor's supervision, overhead and profit, and an additional 5 percent (maximum for added work and minimum for deleted work) may then be added to such costs to cover the General Contractor's supervision, overhead and profit. The cost of labor shall include required insurance, taxes and fringe benefits. Equipment costs shall be based on current rental rates in the areas where the work is being performed but, in no case shall such costs be greater than the current rates published by the Associated Equipment Distributors, Chicago, Illinois.

2. By estimate and acceptance in a lump sum.

3. By unit prices named in the Contract or subsequently agreed upon.

B. Provided, however, that the cost or estimated cost of all extra (additional) work shall be determined in advance of authorization by the Engineer and approved by the Owner.

C. All extra (additional) work shall be executed under the conditions of the original Contract. Any claim for extension of time shall be adjusted according to the proportionate increase or decrease in the final total cost of the work unless negotiated on another basis.

D. Except for over-runs in contract unit price items, no extra (additional) work shall be done except upon a written Field Order Directive, or Change Order from the Engineer, and no claim on the part of the Contractor for pay for extra (additional) work shall be recognized unless so ordered in writing by the Engineer.

PART 2 – PRODUCTS

2.01 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*

2.02 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.

2.03 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.

2.04 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.

2.05 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.

2.06 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.

2.07 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.

2.08 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.

2.09 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.

2.10 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.

2.11 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.

2.12 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.

2.13 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.

2.14 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.

2.15 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.

2.16 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.

2.17 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.

2.18 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.

2.19 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.

2.20 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.

2.21 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.

2.22 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.

2.23 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.

2.24 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.

2.25 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.

2.26 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.

2.27 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.

2.28 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.

2.29 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.

2.30 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.

2.31 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.

2.32 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.

2.33 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.

2.34 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.

2.35 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.

2.36 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.

2.37 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.

2.38 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.

2.39 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).

2.40 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).

2.41 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.

2.42 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).

2.43 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.

2.44 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.

2.45 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).

2.46 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.

2.47 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:

Range1 = All encasement sizes greater than 2 inches to and including 6 inches
Range2 = All encasement sizes greater than 6 inches to and including 10 inches
Range3 = All encasement sizes greater than 10 inches to and including 14 inches
Range4 = All encasement sizes greater than 14 inches to and including 18 inches
Range5 = 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).

2.48 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:

Range1 = All encasement sizes greater than 2 inches to and including 6 inches
Range2 = All encasement sizes greater than 6 inches to and including 10 inches
Range3 = All encasement sizes greater than 10 inches to and including 14 inches
Range4 = All encasement sizes greater than 14 inches to and including 18 inches
Range5 = All encasement sizes greater than 18 inches to and including 24 inches
Range6 = 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).

2.49 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).

2.50 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.

2.51 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).

2.52 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.

2.53 S FORCE MAIN TAP SLEEVE/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.

2.54 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.

2.55 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.

2.56 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.

2.57 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.

2.58 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).

2.59 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.

2.60 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.

2.61 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.

2.62 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.

2.63 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.

2.64 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.

2.65 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.

2.66 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.

2.67 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.

2.68 **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.

2.69 **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.

2.70 **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.

2.71 **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.

2.72 **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.

2.73 **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).

2.74 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).

2.75 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.

2.76 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.

2.77 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.

PART 3 QUANTITIES OF ESTIMATE

A. Wherever the estimated quantities of work to be done and materials to be furnished under this contract are shown in any of the documents, including the Bid Proposal, they are given for use in comparing bids and the right is especially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the Owner to complete the work contemplated by this contract, and such increase or diminution shall not give cause for claims or liability for damages. The Engineer will not be financially responsible for any omissions from the Contract Documents and therefore not included by the Contractor in his proposal.

B. Aerial photographs utilized for plan sheets in the Contract Documents are indicated at an approximate scale and shall not be scaled for quantity take-offs. The quantities listed in the bid schedule are given for use in comparing bids and may not be the actual quantities to be installed. It is the Contractor's responsibility to field verify the bid item quantities to be installed prior to the ordering of materials. Payment on unit price contracts are based on actual quantities installed. The Owner or Engineer will not be financially responsible for any shortage of the bid items or overrun of bid items ordered for the quantities.

C. The actual quantities of all materials to be used for this project shall be field verified prior to the Contractor ordering the necessary materials. The quantity listed in the bid schedule is given for use in comparing bids and may increase or diminish as may be deemed necessary or as directed by the Owner. Any such increase or diminution shall not give cause for claims or liability for damages. The Engineer or Owner will not be financially responsible for any charges incurred for restocking of materials ordered.

Qualifications and Warranty

A. The utility contractor shall be qualified to perform the utility work in accordance with the utility plans and specifications. The contractor shall have a history of utility work with at least five (5) years utility installation experience. The utility contractor shall be knowledgeable of utility installation methods and requirements. The utility contractor shall be able to supply three (3) references of prior utility construction projects if requested by the owner.

B. The utility contractor shall provide a written warranty to the utility owner for a period of one (1) year from the date of the contractor's final payment.

- END OF SECTION -

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. This section specifies the general methods and requirements of submissions applicable to the following WORK-related submittals:

1. General Procedures for Submittals
2. Construction Schedule
3. Schedule of Values and Payments
4. Schedule of SHOP DRAWING Submittals
5. SHOP DRAWINGS, Product Data, Samples and O&M Instructions
6. Construction Photographs
7. Test Reports
8. Manufacturer's Certificates
9. Manufacturer's Instructions
10. Contractor's Responsibility
11. Submission Requirements
12. Resubmission Requirements

Additional general submissions requirements are contained in paragraphs 5.1 through 5.7 of the General Conditions. The CONTRACTOR is responsible for the submittal of all weekly payrolls, monthly utilization and other required forms and reports, including reports and forms from his SUBCONTRACTORS. The prompt submittal of all required reports and forms will help to insure the timely processing of pay request. Detailed submittal requirements will be specified in the technical SPECIFICATIONS sections.

1.02 GENERAL PROCEDURES FOR SUBMITTALS

A. Coordination of Submittal Times:

The CONTRACTOR shall prepare and transmit each submittal sufficiently in advance of performing the related WORK or other applicable activities, or within the time specified in the individual WORK section of the SPECIFICATIONS, so that the installation will not be delayed by processing times including disapproval and re-submittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the WORK.

1.03 CONSTRUCTION SCHEDULE

A. In addition to the progress schedule requirements specified in Article 3 of the General Conditions, the CONTRACTOR shall, within ten (10) days after the NOTICE TO PROCEED provide and submit to the ENGINEER for review the schedule he plans to maintain in order to successfully construct the WORK within the time allotted. The schedule shall account for all WORK of the CONTRACTOR and his SUBCONTRACTORS.

B. The CONTRACTOR shall update the schedule information monthly and submit the update information to the ENGINEER at the same time the pay estimate is prepared. The schedule shall contain all of the items of the periodic estimate and pay schedule.

C. The CONTRACTOR bears full responsibility for scheduling all phases and stages of the WORK including his SUBCONTRACTOR WORK to insure its successful prosecution and completion within the time specified in accordance with all provisions of these SPECIFICATIONS.

D. Refer to Section 01310 for additional requirements.

1.04 SCHEDULE OF VALUES AND PAYMENTS

A. Within the (10) days after award of the Contract the CONTRACTOR shall submit to the OWNER in triplicate, a breakdown of the pay items, including a schedule of values and a schedule of payments. This breakdown shall be subject to approval by the OWNER, and when so approved shall become the basis for determining progress payments and for negotiation of CHANGE ORDERS, if required.

1.05 SCHEDULE OF SHOP DRAWING SUBMITTALS

A. The CONTRACTOR shall, within ten (10) days after the NOTICE TO PROCEED provide and submit to the ENGINEER for review a SCHEDULE OF SHOP DRAWING SUBMITTALS. The schedule shall account for all materials used by the CONTRACTOR and his SUBCONTRACTORS.

B. The schedule shall be organized to reflect the respective specification division under which it applies.

1.06 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Shop Drawings

1. SHOP DRAWINGS, as defined in the General Conditions, and as specified in the technical SPECIFICATIONS include, but are not necessarily limited to custom-prepared data such as fabrication and erection/installation DRAWINGS, scheduled information, setting diagrams, actual shop WORK manufacturing instructions, custom templates, special wiring diagrams, coordination DRAWINGS, individual system of equipment inspection and test reports including performance curves and certifications, as applicable to the WORK.

2. All details on SHOP DRAWINGS submitted for review shall show clearly the relation of the various parts to the main member and lines of the structure, and where correct fabrication of the WORK depends upon field measurements, such measurements shall be made and noted on the SHOP DRAWINGS before being submitted for review by the ENGINEER.

3. Unless otherwise specified, the CONTRACTOR is not required to resubmit SHOP DRAWINGS on existing equipment. The CONTRACTOR shall, however, be responsible for obtaining all SHOP DRAWINGS and/or other information from the manufacturer necessary to complete the installation and startup of existing equipment.

B. Product Data

1. Product data as specified in individual sections, include, but are not necessarily limited to, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare parts listing, and printed product warranties, as applicable to the WORK.

C. Samples

1. Samples specified in individual sections, included, but are not necessarily limited to, physical examples of the WORK such as sections of manufactured or fabricated WORK, small cuts or

containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effects, graphic symbols, and units of WORK to be used by the ENGINEER or OWNER for independent inspection and testing, as applicable to the WORK.

1.07 CONSTRUCTION PHOTOGRAPHS

A. Miscellaneous photographs as directed by the ENGINEER or OWNER.

1. Photographs are required on this PROJECT and are the responsibility of the CONTRACTOR. Photographs shall be 3" x 5" color snapshots taken with a standard 35mm camera, or a digital camera with 8 MP minimum. CONTRACTOR shall be responsible for the taking, development, labeling and organizing of the photographs. All photographs shall be identified as to location, date and subject matter. Photographs shall be arranged in a photo album(s) by location, subject matter and date taken. Upon completion of the project, the CONTRACTOR shall supply the OWNER with the negatives or digital photo files. The later, if provided, shall be supplied on CD media in .jpg format.

2. No pay item has been set up for the photographs. The CONTRACTOR shall allow for a minimum of 200 - 3" x 5" color photographs (taken and arranged as outlined above) in his BID.

1.08 TEST REPORTS

A. Submit for the Architect/Engineer's knowledge as contract administrator or for the Owner.

B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.09 MANUFACTURER'S CERTIFICATES

A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Architect/Engineer, in quantities specified for Product Data.

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

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect/Engineer.

1.10 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Architect/Engineer for delivery to owner in quantities specified for Product Data.

1.11 CONTRACTOR'S RESPONSIBILITY

A. The CONTRACTOR shall review SHOP DRAWINGS, product data and samples prior to submission to determine and verify the following:

1. Field measurements
2. Field construction criteria
3. Catalog numbers and similar data
4. Conformance with the SPECIFICATIONS

B. All SHOP DRAWINGS submitted by SUBCONTRACTORS for review shall be sent directly to the CONTRACTOR for preliminary checking. The CONTRACTOR shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.

C. The CONTRACTOR shall check all SUBCONTRACTOR'S SHOP DRAWINGS regarding measurements, size of members, materials, and details to satisfy himself that they conform to the intent of the DRAWINGS and SPECIFICATIONS. DRAWINGS found to be inaccurate or otherwise in error shall be returned to the SUBCONTRACTORS for correction before submission thereof.

D. Each shop drawing, WORKING drawing, sample and catalog data submitted by the CONTRACTOR shall have affixed to it a certification statement, signed by the CONTRACTOR. The certification shall state that the CONTRACTOR represents that he has determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and has checked and coordinated each item with other applicable review SHOP DRAWINGS and all Contract requirements.

E. The CONTRACTOR shall notify the OWNER in writing, at the time of submittal, of any deviations in the submittals from the requirements of the CONTRACT DOUCMENTS.

F. The CONTRACTOR should include the notation “Critical Path” on critical path submittals.

G. The review of SHOP DRAWINGS, samples or catalog data by the ENGINEER shall not relieve the CONTRACTOR from his responsibility with regard to the fulfillment of the terms of the Contract.

H. No portion of the WORK requiring a shop drawing, WORKING drawing, sample or catalog data shall be started nor shall any materials be fabricated or installed prior to the review or qualified review SHOP DRAWINGS and data shall be at the CONTRACTOR'S risk. The OWNER will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.

I. PROJECT WORK, materials, fabrication, and installation shall conform with reviewed SHOP DRAWINGS, WORKING DRAWINGS, applicable samples, and catalog data.

1.12 SUBMISSION REQUIREMENTS

A. The CONTRACTOR shall make submittals promptly in accordance with the accepted schedule, and in such sequence as to cause no delay in the WORK or in the WORK of any other CONTRACTOR.

B. Number of submittals required:

1. SHOP DRAWINGS: Submit six (6) copies.

2. Operation and Maintenance Instructions: Submit six (6) copies.

C. Submittals shall contain:

1. The date of submission and the dates of any previous submissions.

2. The PROJECT title, contract number, and submittal number.

3. CONTRACTOR identification.

4. The names of:

a. CONTRACTOR

b. SUPPLIER

c. Manufacturer

5. Identification of the product, with the specification section number.

6. Field dimensions, clearly identified as such.

7. Relation to adjacent or critical features of the WORK or materials.

8. Applicable standards, such as ASTM or Federal Specification numbers.

9. Identification of revisions on re-submittals.

10. An 8-inch x 3-inch blank space for CONTRACTOR'S and ENGINEER'S stamps.

D. Submittals shall be clear and legible. Submittals with facsimile copies will be automatically rejected.

1.13 RESUBMISSION REQUIREMENTS

A. The CONTRACTOR shall make any corrections or changes in the submittals required by the ENGINEER and resubmit until accepted, in accordance with the following:

1. SHOP DRAWINGS and Product Data:

a. Revise initial DRAWINGS or data, and resubmit as specified for the initial submittal.
b. Indicate any changes which have been made other than those requested by the ENGINEER.

2. Samples:

a. Submit new samples as required for initial submittal.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01310

PROGRESS SCHEDULES

PART 1 GENERAL

1.01 GENERAL

A. Scheduling Responsibilities

1. In order to provide a definitive basis for determining job progress, a construction schedule of a type approved by the OWNER will be used to monitor the PROJECT.

2. The CONTRACTOR shall be responsible for preparing the schedule and updating on a monthly basis. It shall at all times remain the CONTRACTOR'S responsibility to schedule and direct his forces in a manner that will allow for the completion of the WORK within the contractual period.

B. Construction Hours

1. No WORK shall be done between 8:00 p.m. and 7:00 a.m. nor on Sundays or legal holiday without the written permission of the OWNER. However, emergency work may be done without prior written permission.

2. If the CONTRACTOR, for his convenience and at no additional cost to the OWNER, should desire to carry on his WORK at night or outside the regular hours, he shall submit a written request to the ENGINEER and shall allow nine (9) days for satisfactory arrangements to be made for inspecting the WORK in progress. If permission is granted, the CONTRACTOR shall light the different parts of the PROJECT as required to comply with all applicable Federal, State and local regulations. The CONTRACTOR shall also revise his schedule as appropriate at the next monthly schedule update meeting to reflect the changes in working hours.

C. Progress of the WORK

1. The WORK shall be started within ten (10) days following the NOTICE TO PROCEED and shall be executed with such progress as may be required to prevent delay to other CONTRACTORS or to the general completion of the PROJECT. The WORK shall be executed at such times and in or on such parts of the PROJECT, and with such forces, material and equipment, to assure completion of the WORK in the time established by the Contract.

2. The CONTRACTOR agrees that whenever it becomes apparent from the current monthly Schedule update that delays have resulted and, hence, that the Contract completion date will not be met or when so directed by

the OWNER, he will take some or all of the following actions at no additional cost to the OWNER.

(a) Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of WORK.

(b) Increase the number of working hours per shift, shifts per working day or days per week, the amount of construction equipment, or any combination of the foregoing to substantially eliminate the backlog of WORK.

(c) Reschedule activities to achieve maximum practical concurrence of accomplishment of activities, and comply with the revised schedule.

(d) The CONTRACTOR shall submit to the OWNER or the OWNER'S representative for review a written statement of the steps he intends to take to remove or arrest the delay to the critical path in the accepted schedule. If the CONTRACTOR should fail to submit a written statement of the steps he intends to take or should fail to take such steps as required by the Contract, the OWNER may direct the level of effort in manpower (trades), equipment, and work schedule (overtime, weekend and holiday work, etc.), to be employed by the CONTRACTOR in order to remove or arrest the delay to the critical path in the accepted schedule, and the CONTRACTOR shall promptly provide such level of effort at no additional cost to the OWNER.

1.02 CONSTRUCTION SCHEDULE

A. Schedule Submissions

1. With ten (10) calendar days of the NOTICE TO PROCEED, the CONTRACTOR shall submit to the ENGINEER five (5) copies of his proposed schedule. The schedule will be the subject of a schedule review meeting with the CONTRACTOR, the ENGINEER and the OWNER or the OWNER'S representative within one (1) week of its submission. The CONTRACTOR will revise and resubmit schedule until it is acceptable and accepted by the OWNER or the OWNER'S representative.

1.03 SCHEDULE UPDATES

A. Monthly Meetings

1. A monthly Schedule Update Meeting will be held in conjunction with the applicable progress meeting at the construction site to review and update the Schedule. The Schedule Update Meetings will be chaired by the OWNER or the OWNER'S representative and attended by the CONTRACTOR and the ENGINEER. Actual progress of the previous month will be recorded and future

activities will be reviewed. The duration of activities and their logical connections may be revised as needed. Decisions made at these meetings and agreed to by all parties are binding with the exception that no contractual completion dates will be modified without formal written requests and acceptance as specified herein.

B. Conditions Requiring Revisions are as follows:

1. When a delay in completion of any WORK item or sequence of WORK items results in an extension of the PROJECT completion.

2. When delays in submittals or deliveries or work stoppages are encountered which make re-planning or rescheduling of the WORK necessary.

3. When the schedule does not represent the actual prosecution and progress of the PROJECT.

1.04 CONTRACT COMPLETION TIME

A. Causes for Extensions

1. The Contract completion time will be adjusted only for cause specified in this Contract. In the event the CONTRACTOR requests an extension of any Contract completion date, he shall furnish such justification and supporting evidence as the OWNER or the OWNER'S representative may deem necessary for a determination as to whether the CONTRACTOR is entitled to an extension of time under the provision of this Contract. The OWNER, with the assistance of ENGINEER and OWNER'S representative, will, after receipt of such justification and supporting evidence, make findings of fact and will advise the CONTRACTOR in writing thereof.

B. Request for Time Extension

1. Each request for change in any Contract completion date shall be initially submitted to the OWNER within the time frame stated in the General Conditions. All information known to the CONTRACTOR at that time concerning the nature and extent of the delay shall be transmitted to the OWNER at that time. Within the time frame stated in the General Conditions but before the date of final payment under this Contract, all information as required above concerning the delay must be submitted to the OWNER. No time extension will be granted for requests which are not submitted within the foregoing time limits.

END OF SECTION

SECTION 01788

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Maintain at site one record copy of:

1. Drawings.
2. Project Manual.
3. Addenda.
4. Change orders and other modifications to Contract.
5. ENGINEER field orders, written instructions, or clarifications.
6. Approved submittals.
7. Field test records.
8. Construction photographs.
9. Associated permits.
10. Certificates of inspection and approvals.

1.02 SUBMITTALS

A. At Substantial Completion:

1. Deliver one marked up set of Drawings to ENGINEER for use in preparation of record drawings.

B. Accompany submittals with transmittal letter containing following.

1. Date.
2. Project title and number.
3. CONTRACTOR'S name and address.
4. Title of record document.
5. Signature of CONTRACTOR or authorized representative.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.01 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in CONTRACTOR'S field office on-site apart from documents used for construction.

1. Provide files and racks for storage of documents.

2. Provide secure storage space for storage of samples.

B. Maintain documents in clean, dry, legible condition and in good order. Do not use record documents for construction purposes.

C. Make documents and samples available for inspection by ENGINEER or OWNER.

D. Failure to properly maintain record documents may be reason to delay a portion of progress payments until records comply with Contract Documents.

3.02 RECORD DOCUMENTS

A. Label each document "PROJECT RECORD" in neat, large printed letters.

B. Maintain record set of Drawings and Specifications legibly annotated to show all changes are made during construction.

1. Graphically depict changes by modifying or adding to plans, details, sections, elevations, or schedules.

2. Make changes on each sheet affected by changes.

C. Record information concurrently with construction progress.

1. Do not conceal Work until required information is recorded.

2. Record changes made by Written Amendment, Field Order, Change Order or Work Directive Change.

3. Give particular attention to concealed equipment and materials that would be difficult to measure and record at later date.

D. Drawings:

1. Graphically depict changes by modifying or adding to plans, details, sections, elevations, or schedules.

2. Make changes on each sheet affected by changes.

3. Dimensions:

   a. Depths of various elements of foundation in relation to finish first floor datum.

   b. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

4. Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.

5. Details not on original Drawings.

6. Location and identification of exposed interior piping, including those shown schematically on Drawings.

7. Size of equipment and location including connections.

8. Electrical and Instrumentation:

   a. Horizontal and vertical locations and size of underground cable, conduit, and duct runs dimensioned from established building lines.

   b. Plan location and size of interior concealed and exposed feeders.

   c. Size and location of access panels.

   d. Variations from original Drawings.

E. Specifications:

1. Mark Specification sections to show substantial variations in actual Work performed in comparison with text of Specifications and modifications.

2. Include variations in products delivered to site and from manufacturer's installation instructions and recommendations.

3. Give particular attention to substitutions and selection of options and similar information.

4. Note related record drawing information and Product Data.

END OF SECTION

SECTION 02320

HORIZONTAL DIRECTIONAL DRILLING

PART 1 GENERAL

1.01 SECTION DESCRIPTION

The work specified in this section consists of furnishing and installing underground utilities using the horizontal directional drilling (HDD) method of installation, also commonly referred to as directional boring or guided horizontal boring. This work shall include all services, equipment, materials, and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration.

1.02 REFERENCES

Specification 02600 – High Density Polyethylene (HDPE) Pipe and Fittings shall be used as a reference.

1.03 QUALITY ASSURANCE

The requirements set forth in this document specify a wide range of procedural precautions necessary to insure that the very basic, essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the Engineer's approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.

1.04 SUBMITTALS

A. WORK PLAN

Prior to beginning work, the Contractor must submit to the Engineer a general work plan outlining the procedure and schedule to be used to execute the project. Plan should document the thoughtful planning required to successfully complete the project.

B. EQUIPMENT

Contractor will submit specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the project.

C. MATERIALS

Specifications on material to be used shall be submitted to Engineer. Material shall include the pipe, fittings and any other item which is to be an installed component of the project.

PART 2 EQUIPMENT REQUIREMENTS

2.01 EQUIPMENT

The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback the pipe, a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.

2.02 DRILLING SYSTEM

A. DRILLING RIG

The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations.

B. DRILL HEAD

The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.

C. MUD MOTORS (if required)

Mud motors shall be of adequate power to turn the required drilling tools.

D. DRILL PIPE

Shall be constructed of high quality 4130 seamless tubing, grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36 RC.

2.03 GUIDANCE SYSTEM

The Guidance System shall be of a proven type and shall be setup and operated by personnel trained and experienced with this system. The Operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system if using a magnetic system.

2.04 DRILLING FLUID (MUD) SYSTEM

A. MIXING SYSTEM

A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The drilling fluid reservoir tank shall be sized for adequate storage of the mud. Mixing system shall continually agitate the drilling fluid during drilling operations.

B. DRILLING FLUIDS

Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 8.5 – 10 and/or as per mixing requirements of the Manufacturer. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No hazardous additives may be used. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall.

C. DELIVERY SYSTEM

The mud pumping system shall have a minimum capacity to supply mud in accordance with the drilling equipment pull-back rating at a constant required pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. A berm, minimum of 12" high, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage facilities.

2.05 OTHER EQUIPMENT

A. PIPE ROLLERS

Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull-back operations. Sufficient number of rollers shall used to prevent excess sagging of pipe.

B. PIPE RAMMERS

Hydraulic or pneumatic pipe rammers may only be used if necessary and with the authorization of Engineer.

C. RESTRICTIONS

Other devices or utility placement systems for providing horizontal thrust other than those previously defined in the preceding sections shall not be used unless approved by the Engineer prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage and to maintain line and grade within the tolerances prescribed by the particular conditions of the project.

PART 3 - EXECUTION

3.01 GENERAL

The Engineer must be notified 48 hours in advance of starting work. The Directional Bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made. The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract. It shall be the responsibility of Engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.

3.02 PERSONNEL REQUIREMENTS

All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety.

3.03 DRILLING PROCEDURE

A. SITE PREPARATION

1. Prior to any alterations to work-site, contractor shall photograph or video tape entire work area, including entry and exit points. One copy of which shall be given to Engineer and one copy to remain with contractor for a period of one year following the completion of the project.

2. Work site as indicated on drawings, within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas.

B. DRILL PATH SURVEY

Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If contractor is using a magnetic guidance system, drill path will be surveyed for any surface geo-magnetic variations or anomalies.

C. ENVIRONMENTAL PROTECTION

Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200' of any water-body or wetland.

D. SAFETY

Contractor shall adhere to all applicable state, federal and local safety regulations and all operations shall be conducted in a safe manner.

E. PIPE

Pipe shall be welded/fused together in one length, if space permits. Pipe will be placed on pipe rollers before pulling into bore hole with rollers spaced close enough to prevent excessive sagging of pipe.

F. PILOT HOLE

1. Pilot hole shall be drilled on bore path with no deviations greater than 5%of depth over a length of 100'. In the event that pilot does deviate from bore path more than 5% of depth in 100', Contractor will notify Engineer and Engineer may require Contractor to pull-back and re-drill from the location along bore path before the deviation.

2. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a March funnel and then wait another 30 minutes. If mud fracture or returns loss continues,

contractor will cease operations and notify Engineer. Engineer and contractor will discuss additional options and work will then proceed accordingly.

G. REAMING

Upon successful completion of pilot hole, contractor will ream bore hole to a minimum of 25% greater than outside diameter of pipe using the appropriate tools. Contractor will not attempt to ream at one time more than the drilling equipment and mud system are designed to safely handle.

H. PULL-BACK

1. After successfully reaming bore hole to the required diameter, contractor will pull the pipe through the bore hole. In front of the pipe will be a swivel. Once pull-back operations have commenced, operations must continue without interruption until pipe is completely pulled into borehole. During pull-back operations contractor will not apply more than the maximum safe pipe pull pressure at any time.

2. In the event that pipe becomes stuck, contractor will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck, contractor will notify Engineer. Engineer and contractor will discuss options and then work will proceed accordingly.

3.04 PIPE TESTING

A. Pipe testing sections shall be followed in its entirety following pull-back of the pipe.

1. All mains shall be swabbed.

2. All mains shall be chlorinated.

3.05 Basis For Payment

A. Piping shall be paid for at the unit price bid and shall include all work incidental to making a complete installation such as excavation, bedding, backfill, painting, testing, disinfection, cleanup, seeding, etc.

END OF SECTION

SECTION 02326

STEEL CASING PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Steel casing pipe shall be furnished and installed as shown on the DRAWINGS and specified herein.

1.02 RELATED WORK

A. Erosion and Water Pollution Control are address under KYTC Standard Specifications for Road and Bridge Construction, most current edition, Division 200

B. Piping is included in this Division, Section 02600.

PART 2 PRODUCTS

2.01 STEEL CASING PIPE

A. Steel casing or jack pipe shall be plain end steel pipe with a minimum yield strength of 35,000 psi and tensile strength of 60,000 psi per API-5L Grade B material. The steel pipe supplied shall be manufactured by the seamless, electric-weld, submerged are weld or gas metal-arc weld process as specified in API-5L. Certifications of 35,000 psi minimum yield strength shall be furnished by the CONTRACTOR.

B. The inside diameter shall be at least 2 inches greater than the largest outside diameter of the carrier pipe, joint or couplings for carrier pipe less than 6" in diameter. The inside diameter shall be at least 4" greater than the largest outside diameter of the carrier pipe, joint or couplings for carrier pipe 6" and over in diameter unless otherwise noted on the plan sheets. In all cases, the casing pipe shall be great enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe or roadbed.

C. Casing pipe shall have minimum wall thickness as shown in the following table:

Nominal Diameter (Inch)	Nominal Thickness (Inch)	Nominal Diameter (Inch)	Nominal Thickness (Inch)
Under 10	0.188	24	0.438
10 - 12	0.250	26	0.438
14 - 16	0.281	28 - 30	0.500

PART 3 EXECUTION

3.01 TUNNELING, BORING OR JACKING

A. Boring or jacking as specified herein shall be located as shown on DRAWINGS. All other casing pipe installations shall be open cut trench.

B. Tunneling under paving, railroads, buildings and underground structures is included as an alternate to boring or repaving required by open cut trenching at no extra cost to the OWNER. Bore and casing pipe is also included as an alternate to tunneling. Backfilling of tunnels shall be mechanically tamped in not more than 3-inch layers and with material rendered suitable for tamping before being placed in tunnel unless otherwise shown on the DRAWINGS. No payment will be made for tunnels less than 3 feet long.

C. In tunneling under buildings, the CONTRACTOR will held responsible for all damage by his operations and methods of excavation and backfilling.

D. Should the CONTRACTOR elect and receive permission to tunnel and bore, other than locations designated on the DRAWINGS or required by the ENGINEER to be tunneled or bored, the entire compensation therefore shall be the same as the unit prices bid for installation in open trench, including paving replacement, but not including bore or unit prices.

E. At locations where tunneling or boring or jacking is called for on the DRAWINGS, in addition to the unit prices for permanent tunnel, tunnel liner, temporary tunnel, boring or jacking and/or casing pipe, payment will be made for furnishing and laying carrier pipe inside the tunnel or casing pipe. No payment will be made for separate trench and backfill unit price items where permanent tunnel, tunnel liner, temporary tunnel, boring or jacking and/or casing pipe unit prices is paid.

F. Boring or jacking under highways, railroads, sidewalks, pipelines, etc., shall be done at the locations shown on the DRAWINGS. It shall be performed by mechanical means and accurate vertical and horizontal alignment must be maintained. When shown on the DRAWINGS, casing pipe shall be used and shall be installed inside bored holes concurrently with boring, or jacking.

3.02 STEEL CASING PIPE INSTALLATION

A. Steel casing pipe shall be of the size and wall thickness as shown on the DRAWINGS or specifications.

B. When casing pipe is jacked, concurrent with boring, all joints shall be solidly welded. The weld shall be such that the joint shall be of such strength to withstand the forces exerted from the boring and jacking operation as well as the vertical loading imposed on the pipe after installation. The weld shall also be such that it provides a smooth, non-obstructing joint in the interior of the pipe, which will allow easy installation of the carrier pipe without hanging or abrasion to the carrier pipe upon installation.

C. When casing pipe is installed in open trench or permanent tunnel, it shall be bedded and backfilled as specified in Division 2. When casing pipe is installed in temporary tunnel, it shall be laid accurately to alignment of proposed pipeline and at an elevation below proposed pipeline necessary to support it at the planned elevation. Bedding and backfill for casing pipe in temporary tunnel shall be as specified in Division 2.

D. Casing pipe in open trench, permanent tunnel and temporary tunnel shall be joined by welding such that it will no be moved out of alignment or grade and will prevent backfill material from entering joint. Where casing pipes are shown on the DRAWINGS to be equipped with vent pipes, vents shall be installed as shown on the DRAWINGS with cost of the same included in the price bid for the casing pipe unless otherwise specified.

3.03 CARRIER PIPE IN CASING PIPE INSTALLATION

A. Pipeline Spacers

Carrier pipes shall be centered inside casing pipe throughout the length of the casing pipe. Centering shall be accomplished by the installation of polyethylene pipeline spacers attached to the casing pipe in such a manner as to prevent the dislodgment of the spacers as the carrier pipe is pulled or pushed through the casing pipe. Spacers shall be of such dimensions to provide (1) full supportive load capacity of the carrier pipe and contents; (2) of such thickness to allow installation and/or removal of the pipe; and (3) to allow no greater than 1/2 inch movement of the carrier pipe within the casing pipe after the carrier pipe is installed. Installation shall be in accordance with manufacturer's recommendations. Spacers shall be model CI Polyethylene casing spacers as manufactured by Advance Products & Systems, Inc., or approved equal.

B. Upon completion of installation of the carrier pipe, the annular space at the ends of the cover pipe shall be sealed to prevent the entrance of groundwater, silt, etc., into the casing pipe. The seal shall be a manufactured product specially made for this purpose. The seal shall be the best seal type constructed of synthetic rubber with stainless steel

banding straps. Seals may be of the "pull-on" or "wrap around" type as manufactured by Advance Products and Systems, Inc. or approved equal.

3.04 BASIS FOR PAYMENT

Steel Casing Pipe shall be paid for at the unit price bid and shall include all work incidental to making a complete installation such as excavation, bedding, backfill, painting, testing, disinfection, cleanup, seeding, etc. Carrier pipe shall be paid under separate bid item.

END OF SECTION

SECTION 02600

WATER DISTRIBUTION PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment and incidentals necessary to install and test pipe and fittings as shown on the Drawings and required by the Specifications.

B. Piping shall be located substantially as shown. The ENGINEER reserves the right to make such modifications in locations as may be found desirable to avoid interference between pipes or for other reasons. Pipe fitting notation is for the CONTRACTOR'S convenience and does not relieve him from laying and jointing different or additional items where required without additional compensation.

C. Wherever the word pipe or piping is used it shall mean pipe and fittings unless otherwise noted.

D. All references to Standards/Specifications shall mean the latest revision.

1.02 RELATED WORK

A. Trenching, backfilling and compacting are included in KYTC Standard Specifications for Road and Bridge Construction, most current edition, Division 200 & 700.

B. Concrete is included in KYTC Standard Specifications for Road and Bridge Construction, most current edition, Division 600.

1.03 DESCRIPTION OF SYSTEM

A. Piping shall be installed substantially as shown on the DRAWINGS so as to form a complete smooth flow path and workable system.

B. The piping and materials specified herein are intended to be standard types of pipe for use in transporting potable water as indicated on the DRAWINGS. The pipe and fittings shall be designed, constructed, and installed in accordance with the best practices and methods and the manufacturer's recommendations.

1.04 QUALIFICATIONS

A. All pipe and fittings under this section shall be furnished by manufacturers who are fully experienced, qualified, and regularly engaged in the manufacture of the materials to be furnished.

1.05 SUBMITTALS

A. The CONTRACTOR shall submit to the ENGINEER for review in accordance with Division 1, Section 01300, complete sets of shop drawings showing layout and details of materials, joints and methods of construction and installation of the pipe, specials and fittings required.

B. Before fabrication and/or shipping of the pipe is begun, the CONTRACTOR shall submit for approval a schedule of pipe lengths for the entire job. All pipe furnished under the Contract shall be fabricated in full accordance with the approved Drawings.

1.06 INSPECTION

A. The manufacturer shall inspect all pipe joints for out-of-roundness and pipe ends for squareness. The manufacturer shall furnish to the ENGINEER a notarized affidavit stating all pipe meets the requirements of applicable ASTM Specifications, these Specifications, and the joint design with respect to square ends and out-of-round joint surfaces.

PART 2 PRODUCTS

2.01 DUCTILE IRON PIPE

A. General

1. Ductile iron pipe shall be centrifugally cast of ductile iron conforming to ASTM Specifications A 746 latest revision. The pipe design conditions shall be as follows:

a. Pressure: Minimum of 250 psi operating plus 100 psi surge allowance.

b. Trench Loading: Laying condition Type 4 unless otherwise specified on Drawings. Trench depth not less than 2' nor more than that shown on the Drawings.

c. Metal Design Strengths:

Bursting Tensile	40,000 psi
Modulus of Rupture	90,000 psi

2. The manufacturing tolerances included in the nominal thickness shall not be less than specified by ANSI/AWWA C150/A21.50, latest revision.

3. Minimum wall thickness shall be 0.33 inches (Class 52), or more if required for minimum operating pressure of 250 psi.

4. Pipe may be furnished in 18', or 20' nominal laying lengths; and the weight of any single pipe shall not be less than the tabulated

weight by more than 5 percent for pipe 12" or smaller in diameter, nor by more than 4 percent for pipe larger than 12" in diameter.

5. The hydrostatic and acceptance tests for the physical characteristics of the pipe shall be as specified in ANSI/AWWA C151/A21.51, latest revision.

6. Any pipe not meeting the ANSI/AWWA specifications quotes above shall be rejected in accordance with the procedure outlined in the particular specification.

7. The ENGINEER shall be provided with 3 copies of a certification by the manufacturer that the pipe supplied for this Contract has been tested in accordance with the referenced specifications and is in compliance therewith.

8. The net weight, class or nominal thickness and sampling period shall be marked on each pipe. The pipe shall also be marked to show that it is ductile iron.

9. Unless otherwise noted, joints for ductile iron pipe will be "push-on" type consisting of a rubber gasket installed in a recess in the bell.

10. Ductile iron pipe must be used within 200 feet of underground petroleum storage tanks and shall have gaskets designed for this purpose such as Nitrile Butadiene (NBR), approved equal or better.

B. Lining and Coating Ductile Iron Pipe

1. All ductile iron pipe shall have a cement lining and bituminous seal coat on the inside. Cement mortar lining and bituminous seal coat inside shall conform to ANSI/AWWA C104/A21.4 latest revision.

2. All buried ductile iron pipe shall have manufacturer's outside coal tar or asphaltic base coating.

3. All above grade ductile iron pipe shall have the following coating system:

   A. System Type: MCU/Epoxy.

   B. Surface Preparation: Surface Preparation: NAPF 500-03-03 Power Tool Cleaning.

   C. Primer: Series 1 Purpleprime. DFT 2.5 to 3.5 mils.

   D. Finish Coat: Series N69 Hi-Build Epoxoline II. DFT 4.0 to 6.0 mils.*[May require two coats if brush or roller applied]*.

E. Total DFT: 6.5 to 9.5 mils.

F. Finish Color: As indicated on the drawings, or color schedule.

G. Coatings shall be Tnemec Company Incorporated, or approved equal.

4. All surface preparation and coating application shall be per the manufacturer's recommendations.

C. Fittings for Ductile Iron Pipe-3" and larger

1. Ductile Iron fittings only shall be used with the ductile iron pipe.

2. Mechanical joint fittings shall be used with underground pipe.

3. Rubber-gasket joints shall conform to ANSI/AWWA C111/A21.11 latest revision for centrifugally cast ductile iron water pipe.

4. All Working Pressures - Fittings shall conform to ANSI/AWWA Specifications C110/A21.10 latest revision for 250 psi water working pressure plus water hammer. Ductile iron fittings shall be ductile cast iron per ASTM Specifications A536, latest revision.

5. All fittings shall be cement lined and bituminous coated per Federal Specifications WW-P-421b.

D. Ductile Iron Pipe and Fittings - Smaller than 3"

1. Small size ductile iron pipe shall conform to ANSI Specifications A21.12 (AWWA C 112) latest revision. Fittings shall conform to ANSI Specifications A21.10 (AWWA C 110) latest revision.

2. Pipe may be furnished with either mechanical joints or slip-on joints. Buried fittings shall be furnished with mechanical joints.

E. Flanged Cast Iron Pipe and Flanged Coupling Adapters for Flexible Couplings

1. Non-buried ductile iron pipe and fittings shall be flanged unless otherwise specified.

2. Flanged cast iron pipe and fittings shall have dimensions facing and drilling for ANSI Class 125 flanges (125 psi steam working pressure; 250 psi water working pressure).

3. Where flanges are pit cast integrally with pipe in vertical position in dry sand molds, flanged pipe shall be AWWA Class "B" or latest revision of ANSI Specifications A21.2, Class 50 pipe for sewage,

sludge, gas and air service and Class 150 pipe for all types of water service.

4. Where flanged pipe is made up by threading plain end, centrifugally cast pipe, screwing on specially designed long hub flanges, and re-facing across both the face of the flange and the end or pipe, flange shall be per ANSI Specification B16.1 latest revision and pipe shall be Class 150 per ANSI Specification A21.6 latest revision.

5. Either of the foregoing methods of manufacture of flanged pipe will be acceptable, but when plain ends of flanged pipe are to fit into mechanical joint bells, then the outside diameter of the pipe shall be such that the joint can be made.

6. CBS (rubber and cloth both sides) gaskets 1/16" in thickness shall be used in connecting flanged piping. Nuts and bolts for use in making flanged connections shall have hexagonal heads, be of proper lengths and with U.S. standard threads. The tensile strength of steel used in the bolts shall be not less than 55,000 psi.

7. Flanged Coupling Adapters for flanged pipe shall be a mechanical joint cast to a special flanged joint using a neoprene "O-ring", in place of the usual 1/16" rubber ring gasket. The mechanical bell and special flanged joint piece shall be of high grade gray cast iron with bolt circle, bolt size and spacing conforming to ASA B16.1 Specifications latest revision. Mechanical joint follower flange shall be of ductile or malleable iron with high strength/weight ratio design. Bolts shall be fine grained, high tensile, malleable iron with malleable iron hexagon nuts.

8. Flanged Coupling Adapters for 12" and smaller cast iron pipe shall be Smith-Blair #912; Dresser style 127; or approved equal. For pipe larger than 12", flexible couplings shall be Smith-Blair #913; Dresser style 128; or approved equal. All flexible couplings shall be furnished with anchor studs.

F. Mechanical Joint Restraints

1. Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536.

2. Ductile iron gripping wedges shall be heat treated within a range of 370 to 470 BHN.

3. Three (3) test bars shall be incrementally poured per production shift as per Underwriter's Laboratory (U.L.) specifications and ASTM A536. Testing for tensile, yield and elongation shall be done in accordance with ASTM E8.

4. Chemical and nodularity tests shall be performed as recommended by the Ductile Iron Society, on a per ladle basis.

2.02 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

A. PVC pipe shall comply with ASTM D01784 and shall be Type 1, Grade 1, with pressure and SDR rating as shown on the drawings or indicated in the proposal form. All PVC pipe shall conform to the latest revisions of the following specifications:

ASTM D2241 (PVC plastic pipe SDR-PR and Class T)
Commercial Standard CS 256 (pressure rated type)
National Sanitation Foundation Testing Laboratories (NSF)

B. The name of the manufacturer of the plastic pipe to be used must be found on the current listing of Plastic Materials for Potable Water Application, published by the NSF (National Sanitation Foundation), Ann Arbor, Michigan, and must meet the requirements of the Standard Specifications for Polyvinyl Chloride (PVC) Plastic Pipe, D1785, published by ASTM (American Society for Testing and Materials).

C. Pipe lengths shall not exceed 40 feet. Wall thickness shall be in accordance with CS-256 and ASTM D-2241. Pipe ends shall be beveled to accept the gasketed coupling. Rubber gasketing shall conform to ASTM 1869.

D. Samples of pipe, physical and chemical data sheets shall be submitted to the ENGINEER for approval and his approval shall be obtained before pipe is purchased. The pipe shall be homogenous throughout and free from cracks, holes, foreign inclusions or other defects. The pipe shall be as uniform as commercially practical in color. Pipe shall have a ring painted around spigot ends in such a manner as to allow field checking of setting depth of pipe in the socket.

E. Pipe must be delivered to the job site by means which will adequately support it, and not subject it to undue stresses. In particular, the load shall be so supported that the bottom rows of pipe are not damaged by crushing. Pipe shall be unloaded carefully and strung or stored as close to the final point of placement as is practical.

F. The couplings and fittings shall be furnished by the pipe manufacturer and shall accommodate the pipe for which they are to be used. They shall have a minimum pressure rating of 200 psi. Insertion depth of the pipe in the coupling shall be controlled by an internal PVC mechanical stop in the coupling which will allow for a thermal expansion and contraction. Couplings method shall allow for half of each end of the pipe. Couplings shall permit 5 degree deflection (2-1/2 degrees each side) of the pipe without any evidence of infiltration, cracking or breaking. Couplings shall have rubber seals factory installed.

G. Pipe markings shall include the following, marked continuously down the length:

Manufacturer's Name
Nominal Size
Class Pressure Rating
PVC 1120
NSF Logo, and
Identification Code

H. Lubricant shall be water soluble, nontoxic, be non-objectionable in taste and odor imparted to the fluid, be non-supporting of bacteria growth and have no deteriorating effect on the PVC or rubber gaskets.

2.03 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS (SCHEDULE 80)

A. General

Schedule 80 PVC pipe shall be as manufactured by the Celanese Piping Systems, Inc., or approved equal. To ensure installation uniformity, all piping system components shall be the products of one manufacturer.

B. Materials

1. Pipe and fittings shall be manufactured from a PVC compound which meets the requirements of Type 1, Grade 1 polyvinyl chloride as outlined in ASTM D-1784. A Type 1, Grade 1 compound is characterized as having the highest requirements for mechanical properties and chemical resistance. Fittings shall be socket type and shall conform to the requirements of ASTM D-2467.

2. Compound from which pipe is produced shall have a design stress rating of 200 psi at 73° F., listed by the Plastics Pipe Institute (PPI).

3. Materials from which pipe and fittings are manufactured shall have been tested and approved for conveying potable water by the National Sanitation Foundation (NSF).

C. Solvent Cement

All socket type connections shall be joined with PVC solvent cement complying to ASTM D-2564. Cement shall have a minimum viscosity of 2000 cps.

D. Installation

Installation shall be in strict accordance with the manufacturer's printed instructions. Printed installation instructions shall be submitted and approved by the ENGINEER prior to shipment of the pipe.

E. Testing

1. Pressure Pipe - Refer to Paragraph 3.02 of this Division.

2. Vacuum Pipe - All pipe intended for use under partial vacuum shall be tested by subjection to 24 inches of mercury vacuum; allowing 15 minutes to stabilize and thereafter lose not more than 1% vacuum pressure per hour over a minimum 4 hour test period. This test must be met or exceed prior to final acceptance.

2.04 COPPER PIPE AND FITTINGS

A. Exterior copper pipe shall be Type K pipe (ASTM B88 latest revision), with compression fittings. Joints shall be drawn up firmly and shall be tested before backfilling and any leakage stopped.

B. Wherever copper pipes pass through walls or floors, they shall have wrought or cast iron sleeves, for easy removal. Pipes passing through structural beams shall be placed as near as possible to the top of the beam under the floor slab.

2.05 HIGH DENSITY POLYETHYLENE PIPE

A. General

1. High density polyethylene pipe shall be Adyl "D" polyethylene pipe manufactured by E.I. DuPont DeNemours and Co., Inc., or "Driscopipe" as manufactured by Phillips Product Co., Inc., or approved equal.

B. Materials for Polyethylene Pipe

1. The polyethylene pipe and fittings shall be made of polyethylene resins classified in ASTM D 1248 as Type III, Category 5, Grade P34 (pipe designation PE 3408 defined per ASTM D 3035 latest revision), having specific base resin densities of 0.942 g/cc minimum and 0.955 g/cc maximum, respectively; and having melt indexes of 0.4 g/10 min. maximum and 0.15 g/0.10 min. minimum, respectively.

2. Pipe made from these resins must have a long-term strength rating of 1,600 psi or more.

3. The polyethylene resin shall contain antioxidants and shall be stabilized with carbon black against ultra-violet degradation to provide protection during processing and subsequent weather exposure.

4. The polyethylene resin compound shall have a resistance to environmental stress cracking as determined by the procedure

detailed in ASTM D 16930 latest revision, Condition B with sample preparation by procedure C of not less than 200 hours.

C. Polyethylene Pipe and Fittings

1. Polyethylene pipe furnished and installed under this Contract shall be of nominal outside diameter shown on the Drawings, and shall be designed for a normal internal working pressure and earth cover over top of the pipe to suit the conditions of proposed use.
2. Each length of pipe shall be marked, at no more than 10 foot intervals, with the following information:

   Nominal pipe size
   Type plastic material - PE3408
   Pipe pressure rating
   Manufacturer's name, trademark and code

3. All pipe shall be made from virgin material. No rework compound.

4. Pipe shall be homogenous throughout, and be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.

5. Fittings for the polyethylene pipe line shall be molded for fabricated from the same material as specified hereinbefore for the high density polyethylene pipe.

6. Fittings for bends 22-1/2 degrees or greater shall be provided as shown on the Drawings. For alignment changes of less than 20 degrees deflection, the pipe may be laid in curves with a radius of 80 feet or greater.

7. All run-of-the-pipe fittings shall be fusion welded into the pipe line. Tee branches shall be of the size shown on the Drawings and shall be furnished with flanged ends per ANSI B-16.1. All fittings shall be factory made.

8. Fittings shall be capable of withstanding the same pressure and loading conditions specified for the pipe.

9. Wye Branches shall be true wyes.

D. Pipe Jointing

1. Pipe to be joined by leak-proof, thermal, butt fusion joints. All fusion must be done by personnel trained by the pipe supplier using tools approved by the pipe supplier.

2. The fusion machine shall have hydraulic pressure control for fusing 2 pipe ends together; it shall include pressure fusion indicating gauges to correctly monitor fusion pressures. The

machines shall be equipped with an electric or gasoline engine powered facing unit to trim irregularities from the pipe ends. The heating plate on the fusion machine shall be electrically heated and thermostatically controlled and shall contain a temperature gauge for monitoring temperature.

3. Joint strength must be equal to that of adjacent pipe as demonstrated by tensile test. In addition, results of tensile impact testing of joint should indicate a ductile rather than a brittle fracture. External appearance of fusion bead should be smooth without significant juncture groove.

4. Threaded or solvent cement joints and connections are not permitted.

E. Joining, Terminating or Adapting by Mechanical Means

1. The polyethylene pipe shall be connected to systems or fittings of other materials by means of an assembly consisting of a polyethylene flange adapter butt-fused to the pipe, a backup ring of either cast iron, steel, or high silica aluminum alloy made to ANSI B-16.1 dimensional standards (with modified pressure ratings), bolts of compatible material (insulated from the fittings where necessary) and a gasket of reinforced black rubber, asbestos-rubber compound or other material approved by the ENGINEER, cut to fit the joint. In all cases, the bolts shall be drawn up evenly and in line.

2. Termination of valves, or fittings such as tees, bonds, etc., made of other materials shall be by the flange assemblies specified hereinbefore. The pipe adjacent to these joints and to joints themselves must be rigidly supported for a distance of one pipe diameter or 1 foot, whichever is greater, beyond the flange assembly.

F. Tools and Procedures

1. Fusion jointing and other procedures necessary for correct assembly of the polyethylene pipe and fittings will be done only by personnel trained in those skills by the pipe supplier.

2. Only those tools designed for aforementioned procedures and approved by the pipe supplier shall be used for assembly of pipe and fittings to ensure proper installation.

2.06 UNDERGROUND UTILITY WARNING TAPES

A. Non-metallic underground utility warning tapes shall be installed directly above all buried pipe.

B. The tape shall a pigmented polyolefin film with a printed message on one side that is impervious to all known alkalis, acids, chemical reagents and solvents found in the soil.

C. The minimum overall thickness of the tape shall be 4.0 mils and the width shall not be less than 3" and a minimum unit length of 1000 ft/roll. The tape shall be color coded and imprinted with the message as follows:

Type of Utility	Color Code	Legends
Water	Safety Precaution Blue	Caution Buried Water Line Below
Sewer	Safety Green	Caution Buried Sewer Line Below

D. Underground marking tape shall be "Terra Tape" as manufactured by Reef Industries, or approved equal.

E. Installation of marking tapes shall be per manufacturer's recommendations and shall be as close to the grade as is practical for optimum protection and delectability. Allow a minimum of 18" between the tape and the line.

F. Payment for detectable tapes shall be included in the linear foot price BID of the piping BID item(s).

2.07 DETECTABLE TRACER WIRE AND FLEXIBLE PIPELINE MARKERS

A. 10 gauge, single strand TRACER WIRE shall be placed directly on top of all PIPE and shall be attached to the pipe at 5 ft intervals maximum. Tracer wire segments shall be 800 feet maximum and shall terminate at each air release valve manhole, or a structure the same as a clean-out box. Contractor shall leave three feet of coiled slack at each termination point.

A. A FLEXIBLE FIBER REINFORCED flat composite pipeline marker shall be installed above the force main approximately every 2000 feet at a location designated by the ENGINEER.

B. The marker shall be manufactured of a fiber reinforced composite material. The reinforcement material shall be comprised of both lineal strands and horizontal mesh mats. The marker post must be flat in shape with rails on both sides. Marker shall be at least 3 ¾" wide. A 2 $^{7}/_{8}$" wide decal must fit on each side of the marker. The back side of the post shall have a rounded rib down the center and two small ribs on the sides to act as guides for the decals. Decals will be placed on both sides to ensure that a warning message can be seen from both directions.

C. The marker shall be capable of withstanding a minimum of 10 vehicle impacts at 55 M.P.H. with a car bumper.

D. The marker shall be coated with a coloring which matches the color of the post. The coating shall totally stop ultraviolet light from reaching the resin portion of the post. The coating shall not fade, peel, or blister after a minimum of 2,000 hours in a QUV Weatherometer.

E.

Red – Electric	Orange - Communication
Yellow – Gas	Blue – Potable Water
Green – Sewer	Purple – Reclaimed water

F. The marker post shall remain flexible from -40° F to +140° F.

G. Decals shall be fade resistant and remain legible after a minimum of 2,000 hours in a QUV Weatherometer. Decal graphics shall include the internation Do0Dig symbol. Decals shall be placed on both sides of the post.

H. Marker shall be Rhino, or approved equal.

PART 3 EXECUTION

3.01 LAYING PIPE IN COMMON TRENCH

A. Pipelines, force mains and sewers laid in same trench shall, in all cases, be laid on original earth, regardless of divergence in their elevations. Pipe shall never be laid in backfill or one above the other. The CONTRACTOR shall include payment for all trenching and backfilling in his lump sum bid.

3.02 PRESSURE PIPE INSTALLATION - GENERAL

A. General

1. Pipe shall be handled with such care as necessary to prevent damage during installation. The interior of the pipe shall be kept clean and the pipe shall be installed to the lines and grades shown on the Drawings. Pipe shall be installed according to instructions and with tools recommended by the manufacturer. Whenever pipe laying is stopped, the end of the pipe shall be securely plugged or capped.

2. Ductile Iron fittings only shall be used with the PVC pipe.

3. Mechanical joint fittings shall be used with underground pipe.

4. Fittings less than 4-inches in diameter shall be of the mechanical joint type and be firmly blocked to original earth or rock to prevent water pressure from springing pipe sideward or upward. Concrete or other

blocking material approved by the ENGINEER shall be placed such that it does not cover the pipe joints, nuts, and bolts.

5. Fittings 4-inches in diameter and greater shall be of the mechanical joint type and firmly restrained to prevent water pressure from springing pipe sideward or upward. The mechanical restraint shall be the Series 2000PV produced by EBAA Iron, Inc. or approved equal.

6. Pipes shall be free of all structures other than those planned. Openings and joints to concrete walls shall be constructed as shown on the Drawings.

7. Ductile iron or steel pressure pipe, 4 inch diameter or larger, entering a structure below original earth level, unsupported by original earth for a distance of more than 6 feet shall be supported by Class "2500" concrete, where depth of such support does not exceed 3 feet, and by Class "4000" concrete piers each 6 feet, where depth exceeds 3 feet. All other pressure pipe entering buildings or basins below original earth and having a cover of more than 24 inches of earth, or under roadway, shall be supported as shown in detail on the Drawings. All piers required will be paid for in accordance with the appropriate specification hereinbefore. Class "2500" concrete required will be included in the payment for furnishing and laying the particular pipe, in order to discourage excessive excavation outside the limits of structures. Pipes entering structures shall have flexible joint within 18 inches of exterior of structure, and also from point of leaving concrete support to original earth or crushed stone bedding.

B. Pressure Pipe Laying

1. Pressure pipe shall first be thoroughly cleaned at joints, then joined according to instructions and with tools recommended by the manufacturer. A copy of such instructions shall be available at all times at the site of the work.

2. All pipes must be forced and held together, or "homed" at the joints, before sealing ground level and unsupported by original earth for a distance of more than 6 feet shall be supported by concrete to original ground where depth of such support does not exceed 3 feet. When depth exceeds 3 feet, beams with piers shall be used for support.

3. Trench excavation for pipe laying must be of sufficient width to allow the proper jointing and alignment of the pipe. Trenches in earth or rock shall be dug deep enough to ensure 30" minimum cover over top of the pipe, unless otherwise indicated on the Drawings.

4. Trench line stations shall be set ahead of the trenching at least each 100 feet of pipeline. Trenches shall be dug true to alignment of stakes. Alignment of trenches or pipes in trench must not be

changed to pass around obstacles such as poles, fences and other evident obstructions without the approval of the ENGINEER. Lines will be laid out to avoid obstacles as far as possible, consistent with maintenance of alignment necessary to finding the pipeline in the future and avoiding obstruction of future utilities and structures.

4. Cut pieces of pressure pipe 18" or more in length may be used in fitting to the specials and valves and fitting changes in grade and alignment. Cut ends shall be even enough to make first class joints.

C. Testing Pressure Pipe

1. Pressure and leakage tests shall be conducted in accordance with ANSI/AWWA C600.

2. The CONTRACTOR shall furnish all necessary equipment for pressure testing.

3. Inspection of pipe laying shall in no way relieve the CONTRACTOR of the responsibility for passing tests, stopping leakage, or correcting poor workmanship.

4. Underground pipelines will not be finally accepted until leakage is less than allowable by ANSI/AWWA C600. In case leakage exceeds this amount, the CONTRACTOR shall locate and repair leaks until the entire pipeline will pass the required test. All leakage shall be stopped in exposed piping. The pumping equipment shall be disconnected during test.

5. The CONTRACTOR shall furnish meter or suction tank, pipe test plugs and bypassing piping and make all connections for conducting the above tests. The pumping equipment used shall be compressed air, centrifugal pump or other pumping equipment which will not place shock pressures on the pipeline. Power plunger pumps will not be permitted or us on closed pipe system for any purpose.

3.03 DUCTILE IRON PIPE INSTALLATION

A. Pipe shall be handled with such care as necessary to prevent damage during installation. The interior of the pipe shall be kept clean and the pipe shall be laid to the lines and grades shown on the Drawings and/or as established by the ENGINEER.

B. Whenever pipe laying is stopped, the end of the pipe shall be securely plugged or capped. Care should be taken to prevent flotation of pipe in the event the trench should flood.

C. Fitting shall be firmly blocked to original earth or rock to prevent water pressure from springing pipe sideward or upward. Concrete or other

blocking material shall be placed such that it does not cover the pipe joints, nuts and bolts.

D. Pipes shall be free of all structures other than those planned. Openings and joints to concrete walls shall be constructed as shown on the Drawings. Any cast iron pipe entering a structure below original ground level and unsupported by original earth for a distance of more than 6 feet shall be supported by concrete to original ground where depth of such support does not exceed 3 feet. When depth exceeds 3 feet, beams with piers shall be used for support.

E. All pipes entering buildings or basins below original earth level, which have less than 6 feet span between wall and original earth and having a cover of more than 24 inches of earth, or under roadway, must be adequately supported as approved by the ENGINEER or shown on the Drawings. All such supports are to be included in the contract price and no extra payment will be made for same.

F. Pipes entering structures shall have a flexible joint within 18" of exterior of structure, or from point of leaving concrete support to original earth or rock bedding.

G. Cast iron pipe shall be thoroughly cleaned at joints, then joined according to instructions and with tools recommended by the manufacturer.

H. All pipes must be forced and held together, or "homed" at the joints, before sealing or bolting. Pipe must be aligned as each joint is placed, so as to obtain straight lines and grades. Curves and changes in grades shall be laid in such a manner that maximum allowable joint deflection is not exceeded.

I. Cut pieces of cast iron pipe 18" or more in length, may be used in connecting valves and fittings and for changes in grade and alignment. Cut ends shall be even enough to make first class joints.

J. Sufficient excavation for bell holes will be required for tightening of bolts. No pipe shall be laid resting on rock, blocking, or other unyielding objects except where laid above ground on piers or in permanent tunnels.

3.04 INSTALLING FLANGED OR THREADED PIPE AND FITTINGS

A. The CONTRACTOR shall clean off all rush and dirt and paint all threads with red lead, before assembling, and the pipe shall be installed with flanges and pipes plumb and level, showing no leakage. Unions shall be included in threaded pipe runs to allow for easy removal of pipes. All valve operating devices shall be in locations and of types shown on the Drawings. They shall be accurately plumbed, leveled, supported and braced for smooth operation. Flanged joints shall be assembled with appropriate flanges, gaskets, and bolting. The clearance between flange faces shall be such that the connections can be gasketed and bolted tight without imposing undue strain on the piping system. Flange faces shall

be parallel and the bores concentric; gaskets shall be centered on the flange faces so as not to project into the bore. Bolting shall be lubricated before assembly to ensure uniform bolt stressing. The flange bolts shall be drawn up and tightened in staggered sequence in order to prevent unequal gasket flange spacing. When a raised face is joined to a companion flange with a flat face, the raised face shall be machined down to a smooth matching surface and a full face gasket shall be used.

3.05 PVC PIPE INSTALLATION

PVC pipe shall be installed in accordance with the manufacturer's instructions and the "General" provisions under 3.01 and 3.02 in this Section.

3.06 HIGH DENSITY POLYETHYLENE PIPE INSTALLATION

A. General

1. High density polyethylene pipe shall be installed in strict accordance with the manufacturer's recommendations and these Specifications.

2. The CONTRACTOR shall have the manufacturer furnish all necessary technical assistance, installation instruction and jointing supervision required to ensure that the pipe is properly installed. The CONTRACTOR shall furnish the services of a technical representative of the manufacturer to supervise the joining, bedding, laying and backfilling of at least the first 200 feet of pipe.

3. Upon satisfactory completion of the initial jointing, bedding, laying and backfilling of the first 300 feet of pipe, the CONTRACTOR shall furnish the ENGINEER a written statement from the manufacturer's technical representative certifying that he has witnessed the work in progress and approves the techniques being used and the results obtained by the CONTRACTOR.

4. The manufacturer's technical representative shall have had previous experience with similar work, and be fully qualified to supervise and demonstrate proper procedures for jointing and laying the high density polyethylene pipe.

B. Bedding

1. The laying condition for the high density polyethylene pipe will be on a 6" pad of loose soil with mechanically compacted earth (to a 90 percent of maximum density as determined by Standard Proctor density test) to the centerline of the pipe.

2. At the CONTRACTOR'S option, he may substitute a 6" pad of No. 8 crushed stone below the bottom of the pipe and backfill to the centerline of the pie with No. 8 crushed stone.

C. Grade and Alignment

1. Polyethylene pipe shall be laid to predetermined grades and lines as indicated by the Contract Drawings. Grade lines shall be established either by means of offset grade stakes or by direct levels.

3.07 STERILIZATION OF POTABLE WATER PIPE

A. Upon completion of the work and cleaning up, and prior to final acceptance, the CONTRACTOR shall sterilize all new distribution system improvements which will be in contact with drinking water; including potable water pipe and connections thereto (including pumps and pump piping).

B. Sterilization shall be accomplished by filling the facilities with water containing at least fifty (50) parts per million available chlorine utilizing a contact time of 24 hours. A residual of at least 25 parts per million, at the end of the 24 hour contact time, is required. No portion of the new work shall be placed in service prior to sterilization. At the end of the sterilization period, all sterilized surfaces and areas shall be thoroughly flushed with treated water and drained from the system, as directed by the OWNER.

C. CONTRACTOR shall make an allowance in his bid to cover cost of filling the new water mains. The CONTRACTOR shall be billed for all water used for the construction and testing at a rate equal to the rate that the OWNER must pay the supplier.

D. CONTRACTOR will be responsible for notifying the Health Department to observe sterilization test and shall be responsible for all sampling, including coordination, mailing and retesting, if required.

3.08 TESTING WATERLINE PIPE

1. Pressure and leakage tests shall be conducted in accordance with ANSI/AWWA C600.

2. The CONTRACTOR shall furnish all necessary equipment for pressure testing.

3. Inspection of pipe laying shall in no way relieve the CONTRACTOR of the responsibility for passing tests, stopping leakage, or correcting poor workmanship.

4. The piping shall be complete, and thrust blocks shall have been in place for no less than 10 days prior to be tested.

5. Piping shall be tested at a static pressure of 150 pounds per square inch over a period of not less than eight consecutive hours.

The test will be considered successful when the pressure drop over the test period is 5 psi or less. If the pressure drop exceeds 5 psi, repair the leaks and repeat the test. After repairs have been made the test shall be conducted, again. Piping will be accepted once pressure loss does not exceed 5 psi.

6. Underground pipelines will not be finally accepted until leakage is less than allowable by ANSI/AWWA C600. In case leakage exceeds this amount, the CONTRACTOR shall locate and repair leaks until the entire pipeline will pass the required test. All leakage shall be stopped in exposed piping. The pumping equipment shall be disconnected during test. Allowable leakage is calculated by the following:

L: Allowable leakage, gallons per hour
S: Length of pipe, feet
D: Nominal diameter, inches
P: Average test pressure, psi

$$L = \frac{(SD\sqrt{P})}{133{,}200}$$

7. The CONTRACTOR shall furnish meter or suction tank, pressure recorder, pressure gauges, pipe test plugs and bypassing piping and make all connections for conducting the above tests. The pumping equipment used shall be compressed air, centrifugal pump or other pumping equipment which will not place shock pressures on the pipeline. Power plunger pumps will not be permitted or us on closed pipe system for any purpose.

3.09 BASIS FOR PAYMENT

Piping shall be paid for at the unit price bid and shall include all work incidental to making a complete installation such as excavation, bedding, backfill, painting, testing, disinfection, cleanup, seeding, warning tape, tracer wire, warning signs, etc.

END OF SECTION

SECTION 02640

METERS, INDIVIDUAL PRESSURE REDUCING VALVES, AND SERVICE LINES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. This Section describes the service meters, individual pressure reducing valves, and service lines to be provided, their materials, construction, type, and installation.

B. All meters shown on the plan sheets shall be 5/8 inch by 3/4 inch, unless otherwise noted.

PART 2 PRODUCTS

2.01 INDIVIDUAL PRESSURE REDUCING VALVES

A. Individual pressure reducing valves shall be installed with service meters where shown on the plan sheets.

B. Individual pressure reducing valves shall be Wilkens Model # 600LU, or approved equal, and shall include a bronze strainer. Every regulator shall have an adjustable pressure range of 50 to 125 pounds per square inch. Upon installation, the outlet pressure shall be set at 65 pounds per square inch.

C. Individual pressure reducing valves shall be installed on the inlet/supply side of the service meter using a tandem coppersetter. The CONTRACTOR shall ensure the meter boxes proposed for installation will accommodate the tandem coppersetter, reducing valve and service meter.

D. The reducing valve shall not be buried or otherwise housed outside the meter box.

2.02 METERS

A. SERVICE METER ASSEMBLY

1. Service meters to be furnished under this Contract shall be cold water rotating disc type with hermetically sealed and magnetically driven registers. Meters shall be first-line quality of the manufacturer and be in compliance with AWWA Standard C700, or latest revisions. Any type or make of meter supplied must have been manufactured and marketed in the U.S.A. for at least five (5) years. A bond may be submitted to waive this experience clause.

The bond, if needed, shall be of an amount adequate for replacement of the meters and shall be held for five (5) years.

2. The main case shall be high grade waterworks bronze, with hinged, single lid cover and raised characters cast on them to indicate the direction of flow. Each meter must have the manufacturer's serial number stamped on the lid. Working pressure shall be not less than 150 pounds per square inch. Standard frost bottom meters with non-ferrous strainers snug against the main case shall be provided.

3. The measuring chamber shall be of corrosion-resistant thermoplastic material. The chamber shall be of the two piece design, equipped with a disc made of hard rubber and as near to the specific gravity of water as possible. Discs shall be of the three piece design of the thrust roller type.

4. The register shall be straight reading U.S. gallon type. The register unit shall be completely encased and hermetically sealed, and driven by permanent magnets. There shall be a test index circle, divided into 100 equal parts, and shall have a red center sweep test hand. Water meters shall be Badger low profile model, or approved equal. Registers shall be guaranteed by the manufacturer for a period of at least fifteen (15) years.

5. New Service Meters shall include meter box and cover, meter, coppersetter, four feet (4') of pipe and corporation stop, plus six feet (6') of pipe and adapter on the customer's side of meter. (This latter item is to prevent the customer or his plumber from disarranging or loosening the meter after the CONTRACTOR has already set the meter in its proper position.) Where the main line is in the highway right-of-way, meter shall be set as close to the right-of-way fence as practicable (as shown in the plans).

6. Meters shall be installed at each service connection unless directed otherwise by the ENGINEER. Meter boxes shall be PVC pipe non-corrgated smooth wall inside and out, twenty-four inches (24") deep x eighteen inches (18") diameter. The box shall be twenty inches (20") in diameter. Meter box cover shall be 18" solid flat lid, non-locking, without cleats on the bottom such as Sigma model LC218, or approved equal. Meters shall be five-eighths inch by three-fourths inch (5/8" x 3/4"), unless shown otherwise on the plans. Meter connections shall be made by means of Mueller coppersetters having a cutoff and three-fourths inch (3/4") spud. Prefabricated coppersetters tub assemblies shall not be used. When shown on the plans (Standard Details) an angle check valve shall be furnished on the meter outlet side of the coppersetter. (The size of meter box stated is for five-eighths inch by three-fourths inch (5/8" x 3/4") meter.) For larger meters, meter box size shall be in accordance with standard practice). Alternative boxes

may be considered upon submittal of shop drawings and performance data.

7. Meters shall be set in a workmanlike manner with backfill neatly compacted in place. In yards, pastures and other grassed areas, top of meter box will be one-half inch (1/2") above grade, otherwise two inches (2") above grade.

2.03 SERVICE LINES

A. Unless indicated otherwise on the plans, all service lines shall be three quarter inch (¾-inch) 200 psi Polyethylene tubing. A generous loop of Polyethylene tubing shall be included with the length required for the meter setting. A corporation stop, Mueller H-15000 or approved equal, shall be used on each service line at the main line connection.

B. Service lines crossing a county road or city street will be jacked beneath paved or black topped city streets or county roads, unless rock prevents using this method. Open cut shall be used on all unpaved city streets, county roads and private driveways. Black topped private driveways shall also be jacked under. In all cases where lines are under traffic, a minimum cover of thirty inches (30") shall be provided. All backfill shall be puddled or compacted by air tampers in layers no greater than six inches (6") in depth.

END OF SECTION

SECTION 05540

CASTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, and equipment required to install castings as shown on the Drawings and specified herein. Included in this section are manhole covers, steps, valve boxes, and hatch covers.

1.02 RELATED WORK NOT INCLUDED

A. Concrete is included in KYTC Standard Specifications for Road and Bridge Construction, most current edition, Division 600.

1.03 SUBMITTALS

The CONTRACTOR shall submit to the ENGINEER, in accordance with Division 1, Section 01300, copies of construction details of castings proposed for use.

PART 2 MATERIALS

2.01 GENERAL

A. All castings shall be gray iron, conforming to the requirements of the ASTM Standards, Designation A48 - latest revision, Class 35B.

2.02 MANHOLE CASTINGS

A. Frames and Covers

1. Sanitary sewer manhole castings shall consist of cast iron frames and 22-3/4 inch diameter covers, having a combined weight of not less than 350 pounds for out of traffic locations and 460 pounds for traffic locations. The frame shall be at least 7 inches high overall. Manhole covers must set neatly in the frame, with contact surfaces machined smooth for even bearing. The top of the cover shall be flush with the frame edge. The top of the cover shall sufficient corrugations to prevent slipperiness and be marked in large letters "SANITARY SEWER." Covers shall have one pick hole only, about 1-1/2 inches wide and 3/4 inch deep with 3/8 inch square undercut at rear and 3/4 inch square undercut on sides. Covers on sanitary sewer manholes must not be perforated and shall be as manufactured by J.R. Hoe & Sons, Inc. or approved equal.

2. Storm sewer manhole castings shall consist of cast iron frames and 22-3/4 inch diameter grate type covers, having a combined weight of not less than 460 pounds. The frames shall be at least 7 inches high overall. Manhole covers must set neatly in the frame with contact surfaces machined smooth for even bearing. The top of the cover shall be flush with the frame edge. The castings shall be Neenah Foundry Company with type "D" grate, or approved equal.

B. Steps

1. Cast iron or polypropylene plastic encapsulated steel manhole steps shall be patterns shown on the detail Drawings, and have corrugated treads. In case of need for non-protruding steps, shop drawings of special inset cast iron steps shall be reviewed by and be acceptable to the ENGINEER.

2. If a step constructed of another material is going to be considered, shop drawings will need to be submitted far enough in advance to allow consideration.

3. It is intended that the cast iron step be Neenah Foundry Company's R-1980-E, or equal, and the polypropylene plastic encapsulated steel step be M.A. Industries PS-1, or equal.

2.03 VALVE BOXES

A. Slip Type for Iron Body Gate Valves

1. Valve boxes for 2 inch through 10 inch valves shall be the 2 piece slip type, screw type, of sufficient length to allow for 36 inches of cover over the top of the pipe. The inner section shall have a minimum inside diameter of 5-1/4 inches with a hood type base that will cover the packing gland on a 2 inch through 10 inch valve (minimum of 8 inches inside diameter). The base of the top section shall be flanged at least 1-1/4 inches. A concrete collar shall be poured with typical dimensions of 24" x 24" x 6" deep as shown in the detail drawing. The caps shall be circular with a corrugated surface and have pick holes in the periphery and be marked "Water", "Gas", "Sewer", or "Air" according to use. For 12 inch through 16 inch valves, the valve boxes shall be Opelika Foundry Company No. 4907 for cast iron or approved equal.

2. Valve boxes for valves in the horizontal position shall be Opelika Foundry Company No. 4907 for cast iron or approved equal, with a base that is sized to allow covering of the bevel gear case and centering of the operating nut in the valve box.

PART 3 EXECUTION

3.01 INSTALLATION

A. The installation of castings is generally covered under specifications for pipe work and manholes. Castings shall be leveled, plumbed, secured, and installed in accordance with the Drawings.

END OF SECTION

SECTION 15100

VALVES AND PLUMBING SPECIALTIES

PART 1 GENERAL

1.01 WORK INCLUDED

A. Furnish all labor, materials, equipment, and incidentals required, and install complete and ready for operation, all valves and appurtenances as show on the Drawings and as specified herein.

1.02 RELATED WORK

A. Excavation is included in KYTC Standard Specifications for Road and Bridge Construction, most current edition, Division 200.

1.03 SYSTEM DESCRIPTION

A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of potable water or drainage as shown on the drawings.

1.04 QUALITY ASSURANCE

A. All of the types of valves and appurtenances shall be products of well established firms who are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. All materials of construction shall be of an acceptable type and shall be designated for the pressure and temperature at which they are to be operated, for the materials they are to handle and for the use for which they are intended. The materials shall meet established technical standards of quality and strength necessary to assure safe installations and conform to applicable standards. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.

1.05 REFERENCES

A. Kentucky Basic Building Code.

B. Kentucky State Plumbing Law, Regulations and Code

1.06 SUBMITTALS

A. Copies of all materials required to establish compliance with these Specifications shall be submitted in accordance with the provisions of Division 1, Section 01300. Submittals shall include at least the following:

1. Certified drawings showing all important details of construction and dimensions.

2. Descriptive literature, bulletins, and/or catalogs of the equipment.

3. The total weight of each item.

4. A complete total bill of materials.

5. A list of the manufacturer's recommended spare parts.

1.07 OPERATING INSTRUCTIONS

A. Operating and maintenance instructions shall be furnished to the ENGINEER as provided in Division 1. The instructions shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc., that are required to instruct operating and maintenance personnel unfamiliar with such equipment.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. General

1. All valves and appurtenances shall be of the size shown on the Drawings and as far as possible all equipment of the same type shall be from one manufacturer.

2. All valves and appurtenances shall have the name of the maker, flow directional arrows, and the working pressure for which they are designed cast in raised letters on some appropriate part of the body.

3. All buried valves shall open left (counterclockwise). Insofar as possible, all valves shall open counterclockwise.

2.02 VALVES

A. Gate Valves

Gate valves shall be used in shut-off applications and where the valves are scheduled for infrequent use.

1. Gate Valves – 2-1/2 Inches and Smaller

a. Gate valves shall be for 125-pound water working pressure, 2-1/2 inches and 3 inches for air release. Valves

3 inches and smaller shall be standard brass construction, rising stem, double disc, parallel seat, with handwheel where exposed or key operated when in the ground. The valves shall be Crane No. 440, Jenkins 62U or approved equal.

b. In copper-solder-joint piping, Chase Style 1334 or approved equal, gate valves are preferred with solder joint connections.

2. Gate Valves and Appurtenances for Yard Piping – 3 to 14 inches

a. Gate valves for water shall meet the requirements of AWWA C509 covering resilient seated gate valves. Valves shall be rated for 200-psi working pressure and a minimum of 400-psi test pressure. The wedge shall be of cast iron completely encapsulated with rubber. The sealing rubber shall be permanently bonded to the cast iron wedge to meet ASTM tests for rubber metal bond ASTM D429. They shall have non-rising cast bronze stems (unless otherwise shown on the PLANS) and be fitted with "O-ring" seals. The operating nuts shall be 2-inch square. All valves shall open left, or counterclockwise. Stuffing boxes shall be the "O-ring" type with two rings located above thrust collar; the two rings shall be replaceable with valve fully open and subjected to full rated working pressure. Gate valves shall be mechanical joint, ANSI Standard 21.11 except where shown otherwise. The body and bonnet shall be coated with a fusion coating both interior and exterior to meet C50. Each valve shall have maker's name, pressure rating and year in which manufactured cast on the body. Gate valves shall be as manufactured by Mueller Co., or approved equal.

b. Tapping sleeves shall be as manufactured by the Ford Meter Box Company, Inc., with cadmium-plated cast iron nuts and bolts. Sleeves shall be of cast iron, designated for working pressures not less than 200 psi. Lead gaskets shall be provided for the full area of the sleeve flanges.

b. Tapping valves shall conform to the requirements specified above for gate valves except that one end shall be flanged and one mechanical. Tapping valves shall be provided with an over-sized opening to permit the use of full sized cutters.

c. Four tee-handled gate wrenches of suitable length shall be furnished to operate all valves with valve boxes.

3. Gate Valves for Inside Service – 3 to 14 inches

Gate valves 3" and larger in size, unless otherwise specified shall be iron body, bronze mounted, solid wedge gate valves with flanged ends and conforming to the AWWA Standard Specification for Gate Valve for Water and Sewage Systems, Designation C509-latest revision, insofar as applicable and in addition to the following requirements:

a. Valve shall be outside screw and yoke type with rising stem (unless otherwise shown on the PLANS).

b. Flanges shall be faced and drilled to ANSI B16.1 125 pound template, unless otherwise shown on the PLANS.

c. Bronze gate rings shall be fitted into grooves of dovetail or similar shape in the gates. For grooves or other shapes, the rings shall be firmly attached to the gates with bronze rivets.

d. Handwheels shall turn counterclockwise to open the valves. Handwheels shall be of ample size and shall have an arrow and the word "OPEN" cast thereon to indicate the direction of opening.

e. Stuffing box follower bolts shall be of steel and the nuts shall be of bronze.

f. The design of the valves shall permit packing the valves without undue leakage while they are wide open and in service.

g. O-ring stuffing boxes may be used.

h. Gate valves for pipeline installation shall be housed in an adjustable two-piece cast iron valve box and have a cover with the word "Water" or "Sewer" stamped or cast.

i. Gate valves with spur gears shall be housed to accommodate the offset of the operating nut.

B. Ball Valves

Ball valves shall normally be used in quick shut-off and frequent use applications. Specified calves shall be as indicated on the drawings.

1. Ball Valves - bronze

a. Ball valves shall be for 125-pound water working pressure, 2 inches and smaller, standard bronze construction, with precision machined bronze ball, twin Buna-N seats, and handle operator with integral stop where exposed. Buried

ball valves shall be as above with key or nut operators. Valves shall be Lunkenheimer No. 700-SB, Ford, or approved equal.

2. Ball Valves - PVC

a. Ball valves shall be for 150 pound water working pressure, 140 degree Fahrenheit maximum temperature, 3 inches and smaller, standard PVC "True Union" construction, with PVC ball, Viton seats, and handle operator where exposed. Buried ball valves shall be as above with key, nut, pneumatic, or electric operators as shown on the DRAWINGS. Valves shall be Utilities Supply Corp., Plastic Piping Systems, or approved equal.

C. Individual Pressure Reducing Valves

1. Individual pressure reducing valves shall be installed where shown on the plan sheets.

2. Individual pressure reducing valves shall be Wilkens, Model No. 600LU, or approved equal, and shall include a bronze strainer. Every regulator shall have an adjustable pressure range of 50 to 125 pounds per square inch. Upon installation, the outlet pressure shall be set at 65 pounds per square inch.

3. Individual pressure reducing valves shall be installed on the inlet/supply side of the service meter using a tandem coppersetter. The CONTRACTOR shall ensure the meter boxes proposed for installation will accommodate the tandem coppersetter, reducing valve and service meter.

4. The reducing valve shall not be buried or otherwise housed outside the meter box.

D. Large Pressure Reducing Valves

1. Pressure reducing valves shall be of the single seated balanced design type globe body with threaded inlet and outlet ports. It shall be diaphragm operated, spring loaded permitted adjustment over a range of no less than 30 psi.

2. The body shall be bronze construction with bronze or stainless steel stem and furnished with a replacement rubber seat.

3. The pressure reducing valves shall be Mermad, G-A Industries, APCO, or approved equal.

E. Pressure Relief Valves

The pressure relief valve shall relieve excessive system pressure when this pressure rises above pre-set value. It shall immediately, accurately, and with high repeatability respond to system pressure rise by fully opening as well as provide smooth drip-tight closing.

1. Main Valve: The main valve shall be a center guided, diaphragm actuated globe valve of angle pattern design. The body shall have a replaceable, raised, stainless steel seat ring. The valve shall have an unobstructed flow path, with no stem guides, bearings, or supporting ribs. The body and cover shall be ductile iron. All external bolts, nuts, and studs shall be Duplex® coated. All valve components shall be accessible and serviceable without removing the valve from the pipeline. End connections shall be ANSI-300 flange fittings. Valves shall receive a factory-applied epoxy coating.

2. Actuator: The actuator assembly shall be double chambered with an inherent separating partition between the lower surface of the diaphragm and the main valve. The entire actuator assembly (seal disk to top cover) shall be removable from the valve as an integral unit. The stainless steel valve shaft shall be center guided by a bearing in the separating partition. The replaceable radial seal disk shall include a resilient seal and shall be capable of accepting a V-Port Throttling Plug by bolting.

3. Control System: The control system shall consist of a 2-Way adjustable, direct acting, quick pressure relief pilot valve, a testing cock valve, and a filter. All fittings shall be forged brass or stainless steel. The assembled valve shall be hydraulically tested and factory adjusted to customer requirements.

4. Quality Assurance: The valve manufacturer shall be certified according to the ISO 9001 Quality Assurance Standard. The main valve shall be certified as a complete drinking water valve according to NSF, WRAS, and other recognized standards.

5. Valves shall be Bermad 73Q Quick Pressure Relief Valve or approved equal.

F. Check Valves - Drainage

Check valves for backflow prevention in drainage (non-pressure) pipes shall be EPDM "duckbill" style construction utilizing 316 SS mounting bands for piping connection. Valves shall be designed for a maximum cracking pressure of 2" water column. Valves shall be Tideflex TF-2 or approved equal.

2.03 SPECIALTIES AND ACCESSORIES

A. Strainers, Filters, and Dryers

1. Strainers for Water Service

   a. Strainers shall be "Y" type with a cast iron body manufactured in accordance with ASTM A126-latest revision Class B steel, sizes 3/4 inch thru 12 inches. Strainer shall be rated at 200 psi pressure @ -20 to 150 deg F, and 125 @ 450 deg F., with a 304 stainless steel 0.125" perforated screen.

   b. Cover shall be carbon steel manufactured in accordance with ASTM A126-B latest revision. Cover shall contain a blow off outlet with an NPT outlet for connection of a drain valve.

   c. Contractor shall furnish and install on the blow off outlet, a stainless steel ball valve and cast iron piping directed to the floor drain.

   d. Strainers shall be Mueller, Model 758, Bermad or approved equal.

B. Dielectric Pipe Couplings

1. Dielectric pipe couplings shall be used wherever copper pipe connects to steel or cast iron pipe and appurtenances. Couplings shall have steel bodies with non-conducting bushings on both ends. Ends shall have standard pipe threads. Couplings shall be rated for at least 200 psi at 225°F. Couplings shall be as manufactured by Thermodynamics Corporation, Needham, MA; Water Vallett Company, Detroit, MI; or approved equal.

C. Valve Boxes

1. Slip Type for Iron Body Gate Valves

   a. Valve boxes for 2 inch through 10 inch valves shall be the 2 piece slip type, without screw, of sufficient length to allow for 36 inches of cover over the top of the pipe, Tyler 6855 series, model #562-A, or approved equal. The inner section shall have a minimum inside diameter of 5-1/4 inches with a hood type base that will cover the packing gland on a 2 inch through 10 inch valve (minimum of 8 inches inside diameter). The base of the top section shall be flanged at least 1-1/4 inches. The caps shall be circular with a corrugated surface and have pick holes in the periphery and be marked "Water", "Gas", "Sewer", or "Air" according to use. For 12 inch through 16 inch valves, the valve boxes shall be Opelika Foundry Company No. 4907 for cast iron or approved equal.

b. Valve boxes for valves in the horizontal position shall be Opelika Foundry Company No. 4907 for cast iron or approved equal, with a base that is sized to allow covering of the bevel gear case and centering of the operating nut in the valve box.

PART 3 EXECUTION

3.01 INSTALLATION

A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.

B. Control valves in all locations shall be so grouped and located that they may be easily operated, through access panels, doors, or adjacent to equipment.

C. After installation, all valves and appurtenances shall be tested at least one hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the ENGINEER.

D. Install all brackets, extension rods, guides, the various types of operators and appurtenances as shown on the DRAWINGS in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the CONTRACTOR shall check all DRAWINGS and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.

E. All materials shall be carefully inspected for defects in workmanship and materials; all debris and foreign material cleaned out of valve openings, etc.; all operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.

F. Fire hydrants, flushing hydrants and yard hydrants shall be set at the locations as shown on the DRAWINGS and bedded on a firm foundation. A drainage pit as detailed on the DRAWINGS shall be filled with screened gravel and satisfactorily compacted.

G. During backfilling, additional screened gravel shall be brought up around, and 6-inches over, the drain port. Each hydrant shall be set in true vertical alignment and properly braced. Concrete thrust blocks shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Minimum bearing area shall be as shown on the

DRAWINGS. Felt roofing paper shall be placed around hydrant elbow before placing concrete. CARE SHALL BE TAKEN TO INSURE THAT CONCRETE DOES NOT PLUG THE DRAIN PORTS.

H. If directed, the hydrant shall be tied to the pipe with suitable rods or clamps, galvanized, painted, or otherwise rustproof treated. Concrete used for backing shall be no leaner than 1 part cement, 2-1/2 parts sand, and 5-1/2 parts stone. Hydrant paint shall be touched up as required after installation.

I. Buried flanged or mechanical joints shall be made with cadmium-plated bolts. All exposed bolts and nuts shall be cadmium-plated. All exposed bolts and nuts shall be heavily coated with two coats of bituminous paint.

J. Yard hydrants shall be installed in accordance with manufacturer's recommendation and applicable requirements of the fire hydrants above.

K. Buried valves and valve boxes shall be set with the valve stem vertically aligned in the center of the box. Valves shall be set on firm foundation and supported by tamping selected excavated material under the sides of the valve. The valve box shall be supported during backfilling and maintained in vertical alignment with the top flush with finish grade.

3.02 SHOP PAINTING

A. Interior surfaces of all valves, the exterior surfaces of buried valves, and miscellaneous piping appurtenances shall be given a shop finish of an asphalt varnish conforming to Federal Specification TT-V51e for Varnish Asphalt.

B. The exterior surface of various parts of the valves, operators, floor stands and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease or other foreign matter and thereafter one shop coat of an approved rust-inhibitive primer, such as Inertol Primer No. 621, shall be applied in accordance with the instructions of the paint manufacturer.

C. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.

D. Field painting is specified under Division 9, Section 09900.

3.03 INSPECTION AND TESTING

A. The various pipelines in which the valves and appurtenances are to be installed are specified to be field-tested. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.

B. Various regulating valves, strainer, or other appurtenances shall be tested to demonstrate their conformance with the specified operational

capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

END OF SECTION

SECTION 15101

LARGE VALVES AND APPURTENANCES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment, and incidentals required and install complete and ready for operation all valves and appurtenances where shown on the Drawings as specified herein.

B. The equipment specified herein includes the following:

1. Gate valves with boxes for yard piping
2. Gate valves for inside service
3. Butterfly valves for yard piping
4. Butterfly valves for inside service
5. Plug valves for yard piping
6. Plug valves for interior or above ground service
7. Ball valves
8. Check valves
9. Air and vacuum relief valves (piping application)
10. Automatic air release valves
11. Shock absorbers
12. Service clamps
13. Expansion joints
14. Pressure-reducing valves
15. Back Pressure Sustaining Valves

C. The work of this Section shall include the installation of valve tags furnished by the CONTRACTOR. All exposed valves provided under this Section shall be tagged.

1.02 RELATED WORK NOT INCLUDED

A. Excavation, backfill, fill and grading is included in KYTC Standard Specifications for Road and Bridge Construction, most current edition, Division 200.

B. Piping is included in the respective sections of Division 2 and 15.

C. Valves, hydrants, meters and service lines for distribution system application are included in Division 2.

D. Valves and service accessories on all plumbing systems are included in this Division, Section 15100.

1.03 DESCRIPTION OF SYSTEMS

A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of wastewater, sludges, water, air or chemicals, depending on the applications.

1.04 QUALIFICATIONS

A. All of the types of valves and appurtenances shall be products of well-established firms who are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these SPECIFICATIONS as applicable.

1.05 SUBMITTALS

A. Complete shop drawings of all valves and appurtenances shall be submitted to the ENGINEER in accordance with the requirements of Division 1.

B. Furnish all information required in Division 1.

1.06 OPERATING INSTRUCTIONS

A. Manufacturer's operating and maintenance instructions as set forth in Division 1 shall be furnished to the ENGINEER for equipment furnished under this Section.

1.07 TOOLS

A. Special tools, if required for normal operation and maintenance, shall be supplied with the equipment.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. General

1. All valves and appurtenances shall be of the size shown on the PLANS and as far as possible all equipment of the same type shall be from one manufacturer.

2. All valves and appurtenances shall have the name of the maker, flow-directional arrows, and the working pressure for which they are designed cast in raised letters on some appropriate part of the body.

3. Handwheel operator shall be no less than 12-inch diameter.

4. Except as otherwise shown on the PLANS or specified herein, all valves with operators located 7 feet or more above the operating floor shall be provided with chain-wheel operators complete with chain guides and galvanized steel chain.

5. All buried valves shall open left (counterclockwise). Insofar as possible, all valves shall open counterclockwise.

6. All butterfly valves, gate valves and plug valves 8 inches or larger shall be furnished with gear operators and gear cases conforming to the requirements of AWWA C504 or as shown on the PLANS.

2.02 VALVES

A. Butterfly Valves for Buried Service

1. Butterfly valves and operators for buried service shall conform to AWWA C504, except as hereinafter provided. Butterfly valves shall be rated for Class 150B and both valve and operator shall be especially designed for service buried in the ground where the ground water may at times completely submerge the valve and operator, and shall be of the totally enclosed type.

2. The valve bodies shall be of cast iron conforming to ASTM A48-CL 40. Valve ends shall be mechanical joint meeting ANSI Specification A21.11.

3. Except as otherwise specified herein, valve shafts shall be of Type 304 stainless steel. Shaft seals shall be rubber O-ring seals. Shafts having a minimum torsional strength equivalent to shafts specified in Section 3.3 of AWWA C504 and completely isolated from the pipeline contents shall be furnished. Connections between shafts and discs shall be designed to transmit full shaft torque.

4. If the rubber seat is in the body, the disc shall be of an alloy cast iron conforming to ASTM A436 Type I with the periphery machined to a smooth spherical surface. If the rubber seat is mounted on the disc edge it shall be held in place by a one-piece Type 304 stainless steel retaining ring and stainless steel screws, the disc shall be of ASTM A48, Class 40 cast iron and a mating Type 304 stainless steel ring shall be installed in the valve body.

5. The unit shall be permanently lubricated with grease or oil. A standard AWWA 2 inch square operating nut shall be provided on the input shaft and it shall have a cap to center the valve box. Valves shall open to the left (counterclockwise).

6. Valve and operator assemblies shall be given two coats of asphalt varnish conforming to Section 4 of AWWA C504.

7. An Affidavit of Compliance in accordance with Section 1.5 of AWWA C504 shall be furnished to the ENGINEER prior to shipment of valves to the job site.

8. Valve boxes shall be provided for each buried valves. Valve boxes and appurtenances are specified in Division 5, Section 05540.

9. Four tee-handled gate wrenches of suitable length shall be furnished to operate all valves with valve boxes.

B. Butterfly Valves (for Interior Service)

1. Butterfly valves and operators shall conform to the AWWA Standard Specification for rubber seated butterfly valves Designation C504, except as hereinafter specified. Valves shall have a minimum 150-psi pressure rating and be equal to those manufactured by Allis-Chalmers, Henry Pratt Company, or equal.

2. Butterfly valves shall be flanged end with face-to-face dimensions in accordance with Table 3 of the above mentioned AWWA Specification for short-body valve, or wafer type.

3. Valve seats shall be full resilient seats retained in the body or the disc edge in accordance with Section 3.5 of the above mentioned AWWA Specification. If the resilient seat is in the body, the disc shall be of an alloy cast iron conforming to ASTM A436 Type 1 with the periphery machined to a smooth spherical surface. If the resilient seat is mounted on the disc edge, it shall be held in place by a one-piece Type 304 stainless steel retaining ring and stainless screws, the disc shall be of ASTM A48, Class 40 cast iron and a mating Type 304 stainless steel ring shall be installed in the valve body. Resilient seats shall be Hycar or equal for water service and Nordel or equal for air service.

4. The valve body shall be constructed of close grain cast iron per ASTM A126, Class B with integrally cast hubs for shaft bearing housings of the through boss-type. Permanently self-lubricating body bushings shall be provided and shall be sized to withstand bearing loads. Stuffing box of liberal dimensions shall be provided at the operator end of the vane shaft, arranged so that the packing can be replaced by removing the bronze follower without removing the operator. Packing shall be of the Chevron type as manufactured by Garlock Packing Company. A sealing element utilizing O-rings shall also be acceptable.

5. The valve shaft shall be of Type 304 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greater dynamic or seating torque.

6. In general, the butterfly valve operators shall conform to the requirements of Section 3.8 of the AWWA Standard Specifications for Rubber Seated Butterfly Valves, Designation C504, insofar as applicable and as herein specified.

7. Gearing for the operators where required shall be totally enclosed in a gear case in accordance with Section 3.8.3 of the above mentioned AWWA Standard Specification.

8. The manual operators shall conform to Section 3.8.2 of the above mentioned AWWA Standard Specifications, insofar as applicable. Valves shall have Handwheel or lever operators and open left, or counterclockwise. Operators shall have indicators to show position of the valve disc. Operators shall be rigidly attached to the valve body.

C. Gate Valves and Appurtenances for Yard Piping

1. Gate valves for water shall meet the requirements of AWWA C509 covering resilient seated gate valves. Valves shall be rated for 200-psi working pressure and a minimum of 400-psi test pressure. The wedge shall be of cast iron completely encapsulated with rubber. The sealing rubber shall be permanently bonded to the cast iron wedge to meet ASTM tests for rubber metal bond ASTM D429. They shall have non-rising cast bronze stems (unless otherwise shown on the PLANS) and be fitted with "O-ring" seals. The operating nuts shall be 2-inch square. All valves shall open left, or counterclockwise. Stuffing boxes shall be the "O-ring" type with two rings located above thrust collar; the two rings shall be replaceable with valve fully open and subjected to full rated working pressure. Gate valves shall be mechanical joint, ANSI Standard 21.11 except where shown otherwise. The body and bonnet shall be coated with a fusion coating both interior and exterior to meet C50. Each valve shall have maker's name, pressure rating and year in which manufactured cast on the body. Gate valves shall be as manufactured by Mueller Co., or approved equal.

2. Tapping sleeves shall be as manufactured by the Ford Meter Box Company, Inc., with cadmium-plated cast iron nuts and bolts. Sleeves shall be of cast iron, designated for working pressures not less than 200 psi. Lead gaskets shall be provided for the full area of the sleeve flanges.

3. Tapping valves shall conform to the requirements specified above for gate valves except that one end shall be flanged and one mechanical. Tapping valves shall be provided with an over-sized opening to permit the use of full sized cutters.

4. Four tee-handled gate wrenches of suitable length shall be furnished to operate all valves with valve boxes.

D. Gate Valves for Inside Service

1. See Section 15100 of these SPECIFICATIONS for gate valves 2-1/2" in diameter and smaller.

2. Gate valves 3" and larger in size, unless otherwise specified shall be iron body, bronze mounted, solid wedge gate valves with flanged ends and conforming to the AWWA Standard Specification for Gate Valve for Water and Sewage Systems, Designation C509-latest revision, insofar as applicable and in addition to the following requirements:

   a. Valve shall be outside screw and yoke type with rising stem (unless otherwise shown on the PLANS).

   b. Flanges shall be faced and drilled to ANSI B16.1 125 pound template, unless otherwise shown on the PLANS.

   c. Bronze gate rings shall be fitted into grooves of dovetail or similar shape in the gates. For grooves or other shapes, the rings shall be firmly attached to the gates with bronze rivets.

   d. Handwheels shall turn counterclockwise to open the valves. Handwheels shall be of ample size and shall have an arrow and the word "OPEN" cast thereon to indicate the direction of opening.

   e. Stuffing box follower bolts shall be of steel and the nuts shall be of bronze.

   f. The design of the valves shall permit packing the valves without undue leakage while they are wide open and in service.

   g. O-ring stuffing boxes may be used.

   h. Gate valves for pipeline installation shall be housed in an adjustable two-piece cast iron valve box and have a cover with the word "Water" or "Sewer" stamped or cast.

   i. Gate valves with spur gears shall be housed to accommodate the offset of the operating nut.

E. Gate Valves For 16 and 24 Inch Distribution Mains

1. General

   Valves to be installed on 16 and 24-inch high service and transmission lines shall conform to the latest revision of AWWA

Standard C-509 covering resilient seated gate valves. These large diameter valves shall be as manufactured by Clow Valve Co., M & H Valve Co., or approved equal.

2. Design

The valves shall be either, **non-rising stem**, opening by turning stem left or right and provided with **2" square operating nut or handwheel** with the word Open and an Arrow cast in the metal to indicate direction to open.
The wedge shall be of cast iron completely encapsulated with rubber.

The sealing rubber shall be permanently bonded to the cast iron wedge to meet ASTM tests for rubber metal bond ASTM D429.

Stems for NRS assemblies shall be cast bronze with integral collars in full compliance with AWWA. OS & Y stems shall be on bronze bar stock. The NRS stem stuffing box shall be the o-ring seal type with two rings located above thrust collar; the two rings shall be replaceable with valve fully open and subjected to full rated working pressure.

There shall be two low torque thrust bearings located above and below the stem collar. The stem nut shall be independent of wedge and shall be made of solid bronze. There shall be a smooth unobstructed waterway free of all pockets, cavities and depressions in the seat area.

3. Materials

All cast iron shall conform to ASTM-A-126 Class C. Castings shall be clean and sound without defects that will impair their service. No plugging or welding of such defects will be allowed.

Stems shall be manganese bronze having a minimum tensile strength of 60,000 psi, a minimum yield of 20,000 psi.

Bolts shall be electro-zinc plated steel with hex heads and hex nuts in accordance with ASTM A-307 and A-563, respectively.

4. Testing

Prior to shipment from factory, each valve shall be tested by hydrostatic pressure equal to twice the specified working pressure of 250 psi.

5. Coating AWWA

The body and bonnet shall be coated with a fusion coating both interior and exterior to meet C550.

6. Marking

Valves shall be marked with name of manufacturer, the year of manufacture, the maximum working pressure and size of valve.

F. Plug Valves for Interior or Above Ground Service

1. Plug valves shall be manufactured in accordance with AWWA C-504, shall be of the 1/4 turn, eccentric, non-lubricated type, serviceable under full line pressure, and capable of sealing in both directions at the rated pressure. Valves shall have a minimum port area of 80% of the nominal pipe size. The valve body shall be of cast iron, 30,000 psi tensile strength with added nickel and chromium, ASTM A-126, Class B, 175 psi rating. Valve ends shall be flanged. The valve plug shall be ductile iron conforming to ASTM A-536, Grade 65-45-12 with neoprene resilient facing. The valve seating design shall be resilient and of the continuous interface type having consistent opening/closing torques and shall be non-jamming in the closed position. Closure shall be accomplished by means of an off-set plug design with a resilient seating face that achieves full 360 degree seating contact. Valves shall be of the bolted bonnet design. The resilient faced plug shall be replaceable without removing the valve body from the line. The valve body seating area shall be corrosion resistant by a welded-in overlay of high nickel content. Sprayed or plated seating surfaces will not be acceptable. Valves shall have permanently lubricated Type 316 stainless steel bearings on the upper and lower plug stem journal. Bearings shall be replaceable. Packing shall be Buna N (Vee Type) rated for 150 psig working pressure. Packing shall be adjustable and valves shall be designed such that they can be repacked without removing the bonnet. All exposed nuts, bolts, springs, and washers shall be zinc plated, except exposed hardware for submerged valves that shall be of stainless steel.

2. All valves shall be equipped with gear actuators and handwheel operators (unless otherwise shown on the PLANS). All gearing shall be enclosed suitable for running in oil with seals provided on all shafts to prevent entry of dirt and water into the actuator. All shaft bearings shall be furnished with permanently lubricated bronze bearing bushings. Actuator shall clearly indicate valve position and an adjustable stop shall be provided. Construction of actuator housing shall be semi-steel. Hardware on actuators shall be of the same materials as the valves.

3. All valves and actuators shall be as manufactured by DeZurik Corporation or equal.

4. All plug valves shall be installed so that the direction of flow through the valve is in accordance with the manufacturer's recommendations.

G. 3-Way Plug Valves

1. Valves shall be of the non-lubricated taper plug type and shall have resilient faced plugs for drip tight shutoff. End connections shall be flanged and shall be drilled to ANSI 125 pound standard. Valves shall be semi-steel and shall have stainless steel bearings in the upper and lower journal areas. The three-way valve shall be furnished as standard with a plug to shut off one port at a time.

2. The valve shall be furnished with a resilient facing bonded to the plug sealing surface and shall have double handwheel actuators. The actuator shall be of the worm and gear type and shall have one handwheel to lift and reseat the plug and one handwheel to rotate the plug. Handwheel actuators shall be totally enclosed and shall have seals and gaskets to prevent entry of dirt, water or corrosive atmosphere. Actuators shall have corrosion resistant bearings on the gear sector. Actuators shall provide plug rotation up to 360°.

3. The 3-way valves, actuators and accessories shall be as manufactured by DeZurik Corporation, or equal.

H. Plug Valves for Yard Piping

1. Plug valves for yard piping shall be as specified above for interior plug valves, except valves shall have mechanical joint ends and stainless steel hardware. Buried actuators shall be as specified above and shall be of buried, submerged service with seals on all covers and shafts and all exposed hardware of stainless steel. Provide valve box, stem extension, and operating nut as specified above for gate valves.

I. Ball Valves

1. See Section 15100 of these SPECIFICATIONS.

J. Check Valves

1. Check valves for cast iron and ductile iron pipelines shall be swing type and shall meet the material requirements of AWWA Specification C508-latest revision Swing-Check Valves for ordinary water-works service. The valves shall be iron body, bronze mounted, single disc, 150 psi working water pressure, non-shock, and hydrostatically tested at 300 psi. Ends shall be 125 lb. ANSI B16.1 flanges.

   a. When there is no flow through the line the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the water-way.

b. Check valves shall have bronze seat and body rings, extended bronze hinge pins and bronze nuts on the bolts of bolted covers.

c. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and spring. Springs with various tensions shall be provided and springs approved by the ENGINEER shall be installed.

K. Automatic Air and Vacuum Relief Valves for Vertical Turbine Pumps

1. Combination air and vacuum valves for vertical turbine pumps shall be equal to APCO Air Valves for Vertical Turbine Pumps, per APCO Bulletin 586, as manufactured by Valve and Primer Corp., Schaumburg, Illinois, or approved equal.

2. Valves shall be the size shown on the drawings and shall be equipped with an automatic air release valve, such as APCO Valve No. 55, or approved equal.

3. Air valves for vertical turbine pumps shall be designed to allow large quantities of air to escape out the orifice when the pump is started and close water tight when the liquid enters the valve. The air valve shall also permit large quantities of air to re-enter through the orifice when the pump is stopped to prevent a vacuum from forming in the pump column.

4. The valve shall consist of a body, cover, baffle, float and seat. The valve shall be designed to prevent prematurely shut-off. The seat shall be fastened into the valve cover, without distortion, and shall be easily removed, if necessary.

5. The entire float and baffle assembly must be shrouded with a perforated water diffuser to prevent the water column entering the valve, from slamming the float shut and eliminate water hammer in the system.

6 The float shall be stainless steel, designed to withstand a minimum of 1,000 psi, or approved equal. The float shall be center guided and not free floating for positive seating.

7. The discharge orifice shall be fitted with an automatic air release valve in order to vent small pockets of air. This valve shall consist of a body, cover, float and seat, and shall be rated at a working pressure of 150 psi.

8. The body, cover, and baffle of this valve assembly shall be constructed of cast iron, conforming to ASTM A48 Class 30, or approved equal. The float shall be stainless steel, conforming to

ASTM A240, or approved equal. The seats shall be BUNA-N and the water diffuser shall be brass, or approved equal. All flanges shall be 125# ANSI.

L. Air Release Valves

1. Combination Air Valve Assemblies

a. Sizes 1-inch through 6-inch. Valve shall be single body, double orifice, allowing air to exit when filling a pipeline, and air to enter when draining. Orifices shall operate independently; the smaller release orifice shall be capable of opening when the larger is in the closed position.

b. The valve shall be designed to prevent premature closing. The closing mechanism shall be either needle and seat and be Buna-N, or of the rolling seal type made of Rubber E.P.DM., and attached to the valve cover to ensure drop-tight shut-off. The float shall be stainless steel, hermetically sealed, and designed to withstand pressures up to 1000 pounds per square inch, or approved equal. The float shall be of corrosion resistant materials in accordance with ASTM A240, or approved equal. The plug shall be bronze and in accordance with ASTM B124, or approved equal. The body, cover, and leverage frame shall be cast iron/Delrin and shall be in accordance with ASTM A126 GR, B and ASTM D2133, reinforced Nylon, or approved equal.

c. Valve exterior shall be painted with Red Oxide Phenolic Primer, or approved equal as accepted by the FDA for use in contact with potable water.

d. All Combination Air Release Valves to be Val-Matic model #201C, or approved equal.

e. Air valves shall be installed as shown in the plans, housed in a valve box with cover. Valve boxes for air valves shall be carefully set to grade with covers at grade.

2. Air Release (Vent) Valve Assemblies

a. Air Vent Valve No. 50, or approved equal. Valve shall operate under pressure, allowing entrapped air to escape from a pipeline. Orifices shall operate by means of a simple lever mechanism (stainless steel, ASTM A240), rolling seal mechanism, or approved equal to prevent water from escaping as or after air is expelled.

b. The closing mechanism shall be either needle and seat and be Buna-N, or of the rolling seal type made of Rubber

E.P.DM., and attached to the valve cover to ensure drop-tight shut-off. The float shall be stainless steel, hermetically sealed, and designed to withstand pressures up to 1000 pounds per square inch, or approved equal. The float shall be of corrosion resistant materials in accordance with ASTM A240, or approved equal. The seat shall be of stainless steel, or approved equal. The seat shall have an orifice of 3/32 inches, or approved equal to operate up to 175 pounds per square inch (psi), or a 1/16 inch orifice when operation at pressures higher than 175 psi, or approved equal. The body shall be cast iron, ASTM A48, Class 30, or approved equal, and shall have a ½ inch NPT female threaded inlet and outlet, and be rated for 350 psi test pressure.

c. Valve exterior shall be painted with Red Oxide Phenolic Primer, or approved equal as accepted by the FDA for use in contact with potable water.

d. Valve to be Val-Matic model #15A.2, or approved equal.

M. Shock Absorbers

1. Shock absorbers shall be supplied on the plant water distribution piping where shown on the PLANS. The shock absorbers shall be Model 1485-1 as manufactured by Josam Manufacturing Company, Michigan City, Indiana or approved equal.

N. Service Clamps

1. Service clamps shall have malleable or ductile iron bodies, which extend at least 160 degrees around the circumference of the pipe and shall have neoprene gaskets cemented to the saddle body. Bodies shall be tapped for either corporation stop threads of IPS as required. Clamps with tap sizes 1 inch and smaller shall be of the single strap design. Clamps with tap sizes larger than 1 inch shall be of the double strap design.

2. Service clamps shall be Style 91 or 291 as manufactured by Dresser Industries, Inc., Type 311 or 313 as manufactured by Smith-Blair, Inc. or equal.

O. Expansion Joints

1. Expansion joints shall be single arch type of butyl rubber construction with carcass of high grade woven cotton or suitable synthetic fiber and individual solid steel ring reinforcement. Soft rubber fillers shall be integrally cured into the arches to prevent settling of material into the arch. Joints shall be constructed to pipeline size and to meet working pressure and corrosive conditions similar to the line where installed. Joints shall have full

faced fabric reinforced butyl flanges integral with body. Split type steel backup rings shall be provided to ensure a good joint. Rings shall be designed for mating the ANSI Standard 150 lb. flanges. Joints shall have a working pressure rating of 140 psig (minimum). All joints shall be finish coated with Hypalon paint.

2. Expansion joints shall be furnished with control units. Control units shall consist of two (2) drilled plates, stretcher bolts, and rubber washers backed by metal washers. The stretcher bolts shall prevent over-elongation of the joint. Extra nuts shall be provided on the stretcher bolts on the inside of the plate to prevent over-compression. All nuts, bolts and plates shall be galvanized.

3. Expansion joints shall be Style 500B as manufactured by Mercer Rubber Company, Style 4140 by Uniroyal Company, or equal.

P. Pressure Reducing Valves

1. Pressure reducing valves shall be of the single seated balanced design type globe body with threaded inlet and outlet ports. It shall be diaphragm operated, spring loaded permitted adjustment over a range of no less than 30 psi.

2. The body shall be bronze construction with bronze or stainless steel stem and furnished with a replacement rubber seat.

3. The pressure reducing valves shall be G-A Industries, APCO, or equal.

Q. Mud Valves

1. Mud valves shall be flanged end, rising stem type.

2. Bodies shall be cast iron. The stem, stem nut, disk ring, and seat ring shall be bronze. Bolts and nuts shall be rustproof steel.

3. Handwheel operator and floorstand shall be furnished where shown on the PLANS.

4. Provide stem guides for maximum unsupported stem length of 5 feet.

5. The valves shall be Clow F-3085, or equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. All valves and appurtenances shall be installed in the locations shown on the PLANS, true to alignment and rigidly supported. Any damage to the

above items shall be repaired to the satisfaction of the ENGINEER before they are installed.

B. After installation, all valves and appurtenances shall be tested at least 1 hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If a joint proves to be defective, it shall be repaired to the satisfaction of the ENGINEER.

C. Install all brackets, extension rods, guides, the various types of operators and appurtenances as shown on the PLANS that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the CONTRACTOR shall check all plans and figures, which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.

D. All materials shall be carefully inspected for defects in workmanship and materials; all debris and foreign material cleaned out of valve openings, etc.; all operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves and other equipment, which do not operate easily or are otherwise defective, shall be repaired or replaced at no additional cost the OWNER.

E. Buried flanged or mechanical joints shall be made with cadmium plated bolts. All exposed bolts and nuts shall be cadmium plated. All exposed bolts and nuts shall be heavily coated with two (2) coats of bituminous paint comparable to Inertol No. 66 Special Heavy.

F. Buried valves and valve boxes shall be set with the stem vertically aligned in the center of the gate box. Valves shall be set on a firm foundation and supported by tamping selected excavated material under the sides of the valve. The valve box shall be supported during backfilling and maintained in vertical alignment with the top flush with finish grade.

3.02 SHOP PAINTING

A. Interior surfaces of all valves, the exterior surfaces of buried valves and miscellaneous piping appurtenances shall be given a shop finish of an asphalt varnish conforming to Federal Specification TT-V51e for Varnish Asphalt.

B. The exterior surface of various parts of valves, operators, floor stands and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease or other foreign matter and thereafter on shop coat an approved rust-inhibitive primer shall be applied in accordance with the instructions of the paint manufacturer.

C. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.

D. Field painting is included under Division 9.

3.03 INSPECTION AND TESTING

A. The various pipe lines in which the valves and appurtenances are to be installed are specified to be field tested. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable or the ENGINEER.

B. Various regulating valves, strainer, or other appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

END OF SECTION

SECTION 15123

COUPLINGS, FLANGED COUPLING ADAPTERS, AND SERVICE SADDLES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Couplings, flanged coupling adapters, and service saddles required for piping connections. Some products specified in this Section may not be required for this Contract. Refer to piping system specification section(s) and Drawings to determine particular products to be provided under this Contract.

1.02 SUBMITTALS

A. Not required for products identical to those specified by name of manufacturer and model type.

B. For products other than those specified by name of manufacturer and model number, submit information in accordance with requests for substitutions or "Or Equal" items in Section 01300.

C. Submit information for products that vary from specified requirements regardless of manufacturer name.

PART 2 PRODUCTS

2.01 COUPLINGS

A. Couplings for connecting plain-end steel or ductile iron pipe of same outside diameter;

1. Dresser Style 38.

2. Smith-Blair Product No. 411.

3. or approved equal

B. Stainless steel couplings for stainless steel aeration piping:

1. Brico Depend-0-Lok Air Master Couplings or approved equal

a. Housing and closure plates: ASTM A-240-T-304L stainless steel.

b. Sealing plates: T-304 stainless steel.

c. Gaskets: ASTM D2000-EPDM for -20 deg. to 300 deg. F.

d. Hardware: ASTM A-276 T-304 stainless steel.

C. Transition couplings for connecting plain-end steel or ductile iron pipe of different outside diameter:

1. Dresser Style 162.

2. Smith-Blair Product No. 413.

3. or approved equal.

D. Insulating couplings for connecting plain-end steel or ductile iron pipe and stopping flow of electrical current:

1. Dresser Style 39.

2. Smith-Blair Product No. 416.

3. or approved equal.

E. Pressure rating shall be greater than test pressure of piping system.

F. Materials:

1. Middle Ring and Gaskets: As selected by manufacturer. Suitable for fluid service and maximum operating temperature of piping system,

2. Followers: Ductile iron or steel.

3. Bolts and Nuts: Manufacturer's standard.

2.02 FLANGED COUPLING ADAPTERS

A. Flanged coupling adapters for connecting plain-end steel or ductile iron pipe to flanged pipe, fitting, valve, instrument, or equipment item:

1. Dresser Style 128.

2. Smith-Blair Product No. 913.

3. or approved equal.

B. Pressure rating shall be greater than test pressure of piping system.

C. Materials:

1. Flange: Steel, faced and drilled to 150 lb. class in conformance with ANSI B16.5.

2. Body: Steel.

3. Follower: Ductile iron or steel.

4. Gasket: As selected by manufacturer. Suitable for fluid service and maximum operating temperature of piping system.

5. Bolts and Nuts: Manufacturer's standard.

2.03 SERVICE SADDLES with CORPORATION STOP

A. Service saddles for tapping pipe sizes 18 in. and smaller shall be double strap design.

1. Ford Saddles.

2. Mueller Saddles.

3. or approved equal.

B. Service saddles for tapping pipe sizes larger than 18 in. shall be triple strap design.

1. Smith-Blair Product No. 366. or approved equal

C. Materials:

1. Body: Malleable iron or ductile iron.

2. Straps: Steel.

3. Nuts and Washers: Manufacturer's standard.

4. Gasket: As selected by manufacturer. Suitable for fluid service and maximum operating temperature of piping system.

D. A corporation stop, Mueller H-15000 or approved equal, shall be used on each service line at the main line connection.

2.04 ANCHORS

A. Provide anchors including, but not limited to, tie rods, lugs, harness assemblies, flanged spool pieces, friction collars and hardware for each coupling, and flanged coupling adapter. Anchors shall restrain pipe to prevent movement out of each coupling and flanged coupling adapter.

B. Design each anchor to sustain force developed by test pressure of piping system.

C. Anchor studs placed perpendicular to longitudinal axis of pipe is unacceptable.

D. Anchorage with welded attachments to ductile iron piping is unacceptable.

2.05 COATINGS

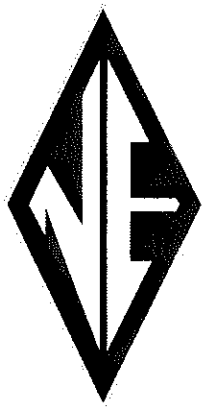
A. Coatings for couplings, flanged coupling adapters, and service saddles shall be same material as coatings for connected pipe.

PART 3 EXECUTION

3.01 INSTALLATION

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

END OF SECTION



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EASTERN KENTUCKY REGULATORY OFFICE
845 SASSAFRAS CREEK ROAD
SASSAFRAS, KY 41759-8806

August 23, 2018

Regulatory Division
South Branch
ID No. LRL-2017-01152

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 dated January 26, 2018 concerning a plan to make improvements and widen sections of Kentucky (KY) Highway 30 for 10.46 miles between Tyner and Travellers Rest in Jackson and Owsley Counties, KY. (Item No. 10-279.61). 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 1,926 linear feet of perennial stream reaches, 15,335 linear feet of intermittent stream reaches, 6,751 linear feet of ephemeral stream reaches, and 2.6 acres of emergent wetlands as part of the proposed project. The impacts would occur in the Upper Laurel Fork HUC-12 watershed of the Upper Kentucky and Upper Cumberland River basins. This permission is granted with the following conditions:

1) The project shall be constructed in accordance with plans included in the January 26, 2018, application for Kentucky Transportation Cabinet, Item No. 10-279.61 and all subsequent information received regarding changes to the original submittal and/or mitigation plan.

2) The applicant must provide proof of purchase from the Kentucky Department of Fish and Wildlife Resources for 10,025 EIU's and 6.2 AMU's of stream mitigation credit 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 the 30th of August 2023. 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 maintain a minimum 50-foot buffer around any known cemeteries.

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

7) The permittee must comply with the agreements outlined in the January 12, 2018 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 **October 30, 2018**.

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

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

FOR THE DISTRICT ENGINEER:

Justin Branham
Team Leader, South Branch
Regulatory Division

Enclosures

(I accept the conditions of this authorization):

Kentucky Transportation Cabinet

9-12-18
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
300 Sower Boulevard
Frankfort, KY 40601

Mr. Doug Dawson
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
410 High Street
Frankfort, KY 40601

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.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Kentucky Transportation Cabinet	File Number:LRL-2017-01152	Date: 07/19/2018
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
	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:
Crystal Byrd US Army Corps of Engineers – Louisville District 845 Sassafras Creek Road Sassafras, KY 41759 (606) 642-3404	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.		

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

January 30, 2018

David Waldner
Kentucky Transportation Cabinet (KYTC)
200 Mero St
Frankfort, KY 40622

Re: Letter of Permission No.: 2018-006-7
KY-30
AI No.: 102623; Activity ID: APE20170001
KYTC Item No.: 10-279.61
USACE ID No.: LRL-2017-1152-cdb
Laurel Fork, UT to Laurel Fork, UT to Rocky Branch, UT to Herd Fork, Herd Fork, UT to Sturgeon Creek, Sturgeon Creek, UT to Little Sturgeon Creek, & Wetlands
Jackson & Owsley Counties, Kentucky

Dear Mr. Waldner:

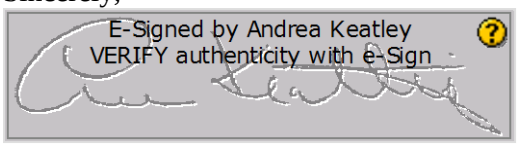
This letter transmits to you a copy of our General Water Quality Certification for the Letter of Permission Authorizing Transportation Projects for the Kentucky Transportation Cabinet – KY-30 Reconstruction in Jackson & Owsley, Counties, Kentucky, in accordance with plans included in the "Application for Permit to Construct Across or Along a Stream and/or Water Quality Certification" received via email on December 1, 2017 and revised information received via email December 20, 2017, including impacts to 6,751 linear feet of ephemeral stream, 15,335 linear feet of intermittent stream, 1,926 linear feet of perennial stream, and 2.6 acres of wetland. Compensatory mitigation will be accomplished through purchasing 10,025 stream EIUs and 5.2 wetland AMUs through the in-lieu fee program.

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. 102623**. If you should have any questions concerning this letter, please contact Samantha Vogeler at (502) 782-6995 or Samantha.Vogeler@ky.gov.

Sincerely,



Andrea Keatley, Manager
Water Quality Branch
Kentucky Division of Water

Attachment

cc: Tyler Reynolds, KYTC: Frankfort (via email Tyler.Reynolds@ky.gov)
Danny Peake, KYTC: Frankfort (via email: Danny.Peake@ky.gov)
Dave Harmon, KYTC: Frankfort (via email: Dave.Harmon@ky.gov)
Crystal Byrd, USACE: Louisville (via email: Crystal.D.Byrd@usace.army.mil)
Lee Andrews, USFWS: Frankfort (via email: Teresa_Hyatt@fws.gov)
Malissa McAlister, Kentucky River Basin Coordinator (via email: mmcalisster@uky.edu)
Steve Rice, HMB Professional Engineers, Inc. (via email: srice@hmbpe.com)

Kentucky Transportation Cabinet

Highway District 10

And

_____(2), Construction

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

Groundwater protection plan

For Highway Construction Activities

For

Reconstruct KY 30 from US 421 in Jackson County to KY 847 in Owsley County

Project: PCN ## -

Project information

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

1. Owner – Kentucky Transportation Cabinet, District 10
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 30
6. Latitude/Longitude (project mid-point) 37°23'44", -83°50'42" (1)
7. County (project mid-point) Jackson County. (1)
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

A. Site description:

1. Nature of Construction Activity (from letting project description)
   Reconstruct KY 30 from US 421 in Jackson County to KY 847 in Owsley County.
2. Order of major soil disturbing activities (2) and (3)
3. Projected volume of material to be moved
   5,849,424 cubic yards excavated and 4,897,245 cubic yards filled

4. Estimate of total project area (acres) 554 acre

5. Estimate of area to be disturbed (acres) 554 acre

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 (2)

8. Data describing existing discharge water quality (if any) (1) & (2)

9. Receiving water name Laurel Fork, Herd Fork, Sturgeon Creek, and Little Sturgeon Creek

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

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

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 : (1)

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.

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.

2. 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 Resident 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.

3. 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. (1)

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.

- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.

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

F. Inspections

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

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have successfully completed the KEPSC-RI course as required by Section 213.02.02 of the Standard Specifications for Road and Bridge Construction, current edition.

- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 70 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.)

KyTC BMP Plan for Project PCN ## -

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, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

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

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, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

SPECIAL NOTE

Filing of eNOI for KPDES Construction Stormwater Permit

County: JACKSON / OWSLEY Route: KY 30
Item No.: 11-278.30 / 10-279.61 KDOW Submittal ID: 161082
Project Description: Reconstruct KY 30 from US 421 in Jackson County to KY 847 in Owsley County.

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.

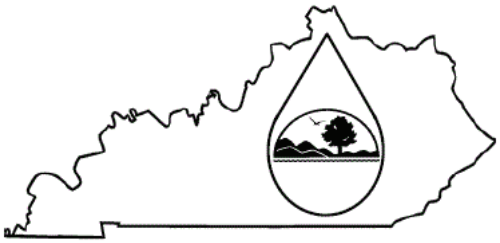
Upon award of the project, the appropriate District Project Delivery & Preservation Branch is responsible for providing the Project Development Project Manager (Darren Back) with the Contractor's name, address, start date, and the CID #. The Project Development Project Manager is responsible for completing and submitting the eNOI document.

The Project Development Project Manager will notify the appropriate Project Delivery & Preservation Branch when the NOI is approved. The approved NOI will be placed in Site Manager. This will need to be accomplished prior to any on-site work.

This note conforms with the Joint Design (05-2017)/Construction (02-2017) Memorandum issued on March 28, 2017.

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

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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:(✓)
KYTC District 10	Corbett	R	Caudill

Mailing Address:(*)	City:(*)	State:(*)	Zip:(*)
PO Box 621	Jackson	Kentucky	41339

eMail Address:(*)	Business Phone:(*)	Alternate Phone:
corbett.caudill@ky.gov	6066668841	Phone

SECTION II -- GENERAL SITE LOCATION INFORMATION

Project Name:(*)	Status of Owner/Operator(*)	SIC Code(*)
Reconstruct KY 30	State Government	1611 Highway and Street Const

Company Name:(✓)	First Name:(✓)	M.I.:	Last Name:(✓)
KYTC - District 10	Corbett	R	Caudill

Site Physical Address:(*)
KY 30 from Tyner to Travelers Rest

City:(*)	State:(*)	Zip:(*)
Tyner	Kentucky	40486

County:(*)	Latitude(decimal degrees)(*)DMS to DD Converter (https://www.fcc.gov/media/radio/dms-decimal)	Longitude(decimal degrees)(*)
Jackson	37.3956	-83.8450

SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION

Project Description:(*)
Reconstruct KY 30 from US 421 in Jackson County to KY 847 in Owsley County

a. For single projects provide the following information

Total Number of Acres in Project:(✓)	Total Number of Acres Disturbed:(✓)
554	554
Anticipated Start Date:(✓)	Anticipated Completion Date:(✓)
10/1/2019	12/30/2022

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	Yes	37.34300	-83.90100	Laurel Fork	Delete
2	No	37.34310	-83.90050	Laurel Fork	Delete
3	Yes	37.34530	-83.89740	Laurel Fork	Delete
4	Yes	37.34720	-83.89770	Laurel Fork	Delete
5	Yes	37.35040	-83.89150	Laurel Fork	Delete
6	Yes	37.41920	-83.82260	Little Sturgeon Creek	Delete
7	Yes	37.42050	-83.82010	Little Sturgeon Creek	Delete
8	Yes	37.42470	-83.81410	Little Sturgeon Creek	Delete
9	Yes	37.42590	-83.81340	Little Sturgeon Creek	Delete
10	Yes	37.42710	-83.81270	Little Sturgeon Creek	Delete

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

Name of MS4:

Date of application/notification to the MS4 for construction site permit coverage:	Discharge Point(s):(*)
Date	

	Latitude	Longitude	
+			

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

Will the project require construction activities in a water body or the riparian zone?: (*)	Yes
If Yes, describe scope of activity: (✓)	Culvert and Bridge Construction
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:(*)
Darren	MI	Back	KYTC District 10

Mailing Address:(*)	City:(*)	State:(*)	Zip:(*)
PO Box 621	JACKSON	Kentucky	41339

eMail Address:(*)	Business Phone:(*)	Alternate Phone:
corbett.caudill@ky.gov	6066668841	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.

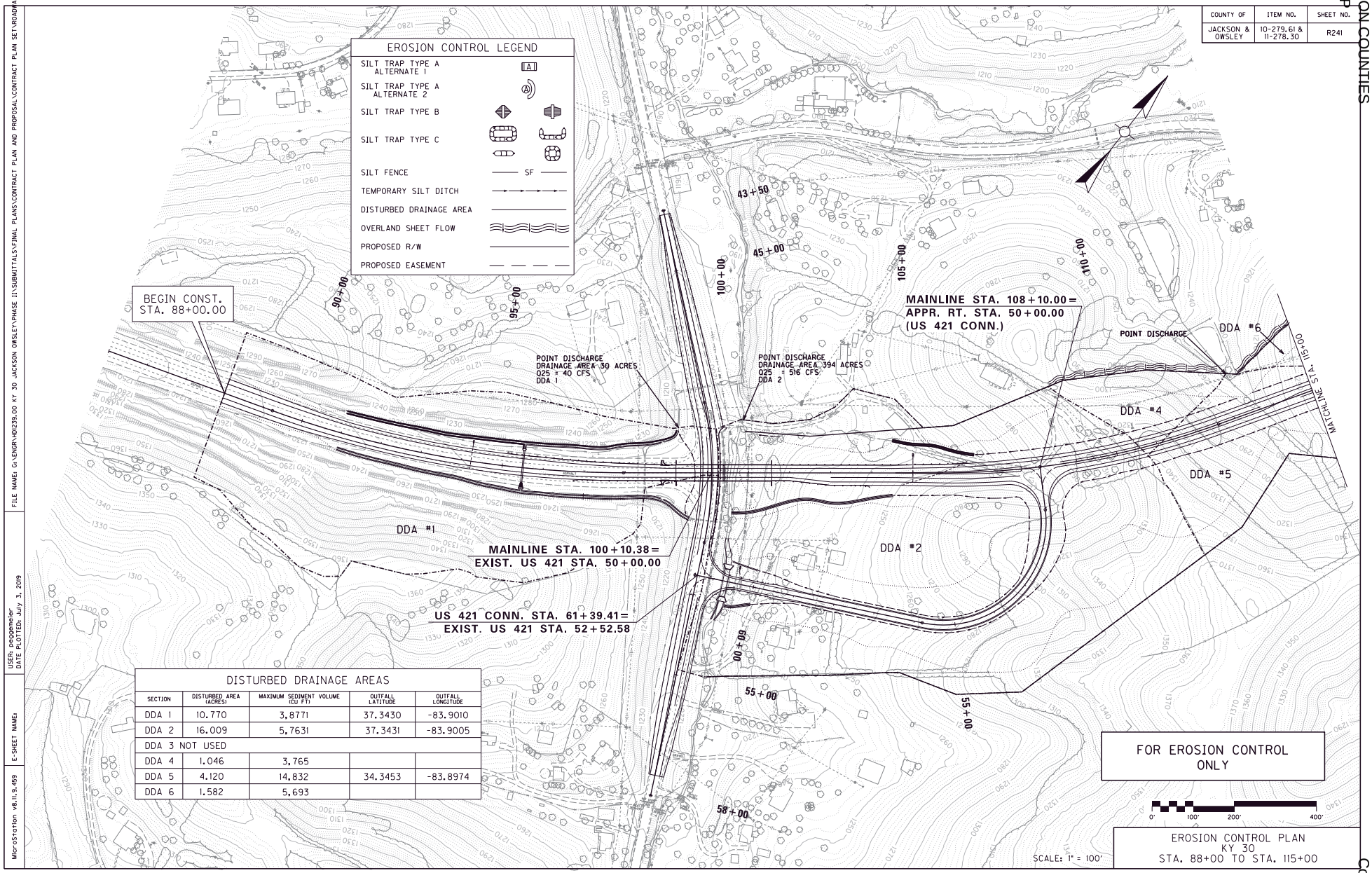
Signature:(*)	Title:(*)
Corbett R Caudill	Executive Director

First Name:(*)	M.I.:	Last Name:(*)
Corbett	R	Caudill

eMail Address:(*)	Business Phone:(*)	Alternate Phone:	Signature Date:(*)
corbett.caudill@ky.gov	6066668841	Phone	7/8/2019

Click to Save Values for Future Retrieval | Click to Submit to EEC

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R241



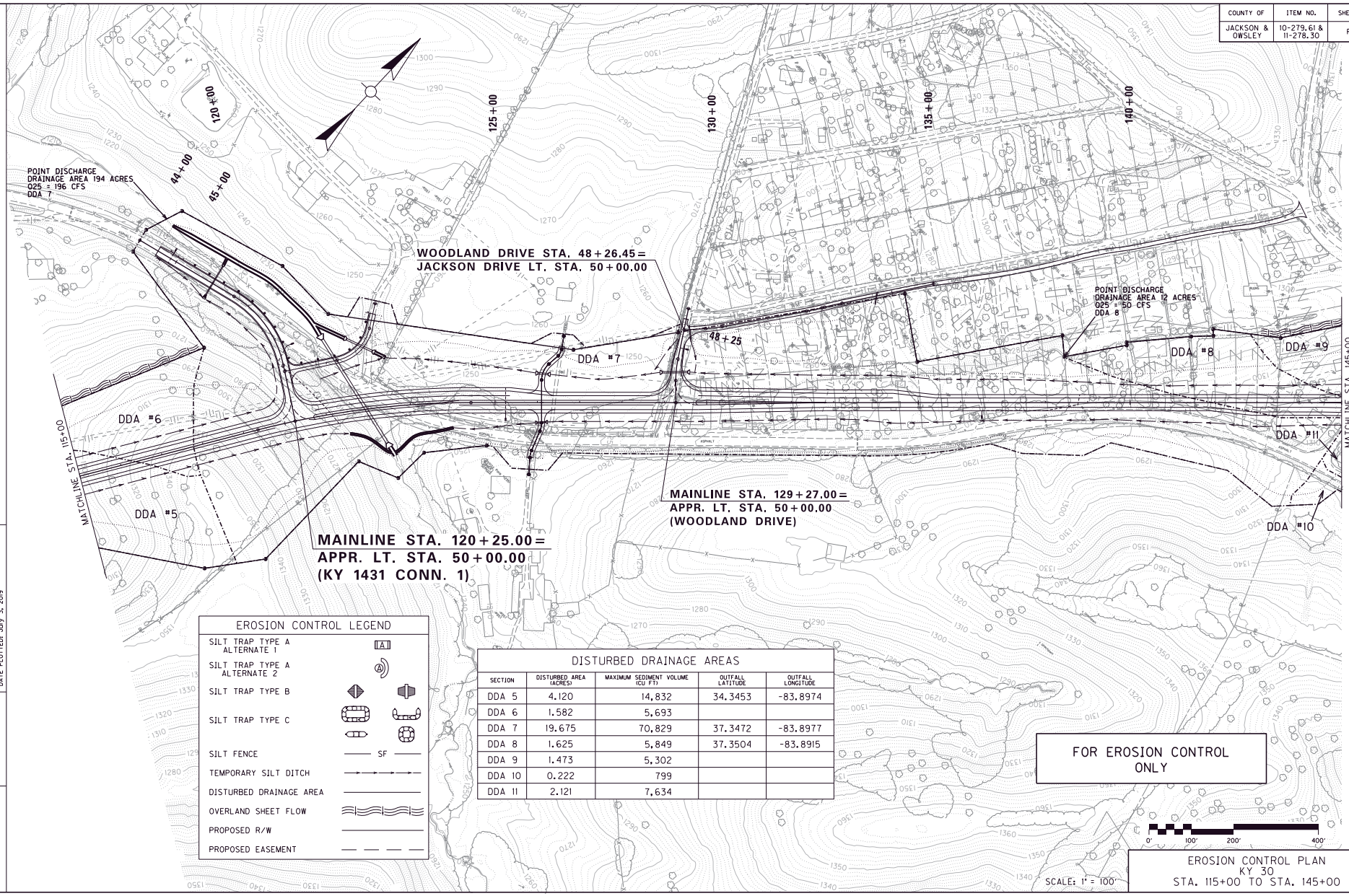
DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 1	10.770	3,8771	37.3430	-83.9010
DDA 2	16.009	5,7631	37.3431	-83.9005
DDA 3 NOT USED				
DDA 4	1.046	3,765		
DDA 5	4.120	14,832	34.3453	-83.8974
DDA 6	1.582	5,693		

EROSION CONTROL PLAN
KY 30
STA. 88+00 TO STA. 115+00

FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2
USER: peggemeier
DATE PLOTTED: July 3, 2019
E-SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R242



EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 5	4.120	14,832	34.3453	-83.8974
DDA 6	1.582	5,693		
DDA 7	19.675	70,829	37.3472	-83.8977
DDA 8	1.625	5,849	37.3504	-83.8915
DDA 9	1.473	5,302		
DDA 10	0.222	799		
DDA 11	2.121	7,634		

FOR EROSION CONTROL ONLY

0' 100' 200' 400'

SCALE: 1" = 100'

EROSION CONTROL PLAN
KY 30
STA. 115+00 TO STA. 145+00

MicroStation v8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD\239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R243

FOR EROSION CONTROL ONLY

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1 (A)
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

POINT DISCHARGE
DRAINAGE AREA 29 ACRES
Q25 = 55 CFS
DDA 12

MAINLINE STA. 148+00.00 =
APPR. RT. STA. 50+00.00
(KY 1431 CONN. 2)

MATCHLINE STA. 145+00

MATCHLINE STA. 175+00

150+00 155+00 160+00 165+00 170+00

55+00 57+00

DDA #9 DDA #10 DDA #11 DDA #12 DDA #13 DDA #14 DDA #15 DDA #16 DDA #17 DDA #18 DDA #19 DDA #20

POINT DISCHARGE

POINT DISCHARGE

POINT DISCHARGE

POINT DISCHARGE
DRAINAGE AREA 28.90 ACRES
Q25 = 54.6 CFS
DDA 16

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 9	1.473	5,302		
DDA 10	0.222	799		
DDA 11	2.121	7,634	37.3510	-83.8888
DDA 12	0.244	877	37.3521	-83.8898
DDA 13	0.638	2,296	37.3515	-83.8872
DDA 14	0.403	1,449	37.3519	-83.8866
DDA 15	0.350	1,261		
DDA 16	16.517	59,460	37.3539	-83.8858
DDA 17	2.749	9,896		
DDA 18	0.943	3,395		
DDA 19	10.844	39,039	37.3597	-83.8857
DDA 20	0.581	2,090		

0' 100' 200' 400'

SCALE: 1" = 100'

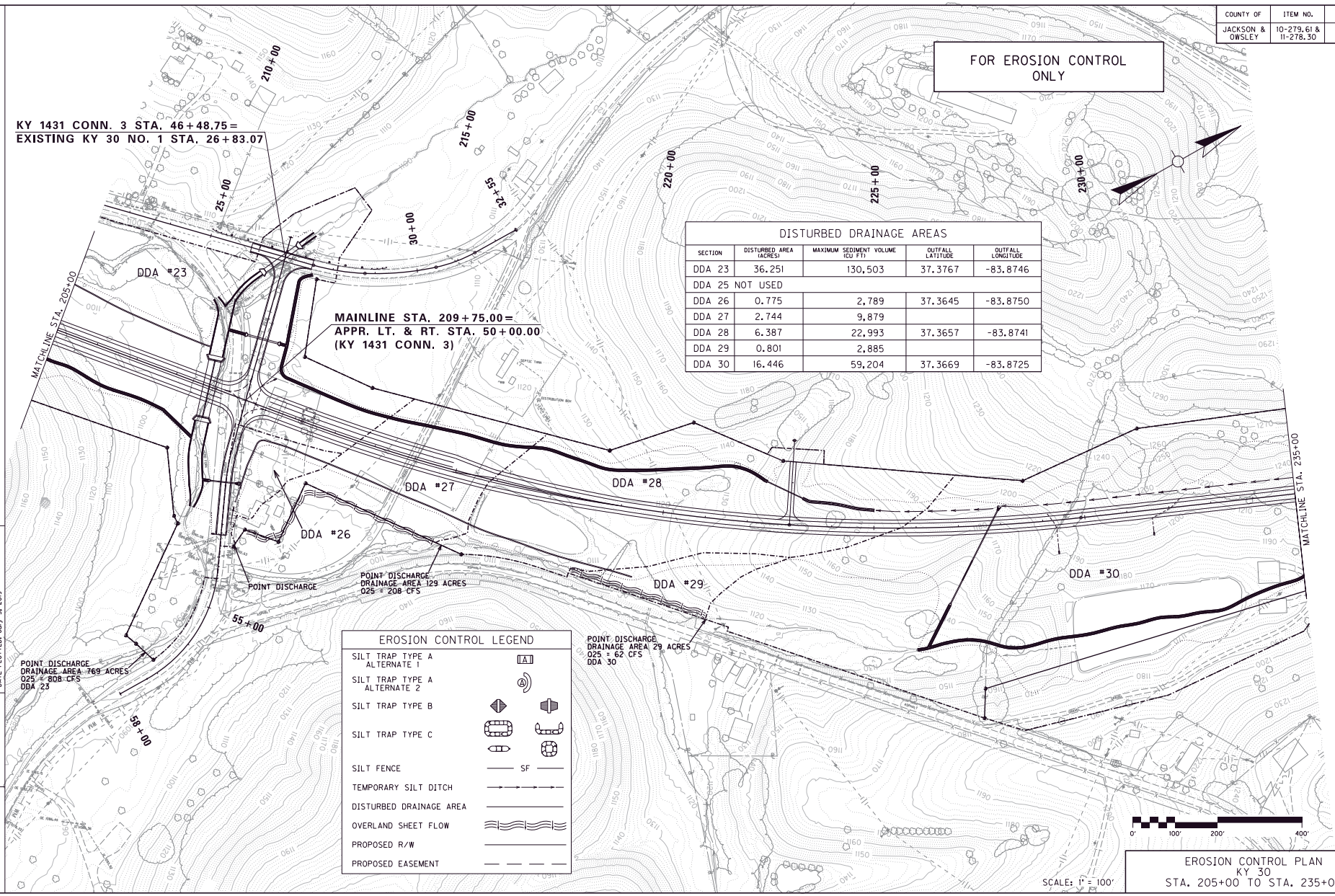
EROSION CONTROL PLAN
KY 30
STA. 145+00 TO STA. 175+00

FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2
USER: peggemeier
DATE PLOTTED: July 3, 2019
E-SHEET NAME:
MicroStation v8.11.9.459

COUNTY OF
JACKSON & OWSLEY
ITEM NO.
10-279.61 & 11-278.30
SHEET NO.
R244
FOR EROSION CONTROL ONLY
EROSION CONTROL PLAN
KY 30
STA. 175+00 TO STA. 205+00
SCALE: 1" = 100'
0'
100'
200'
400'
MATCHLINE STA. 175+00
MATCHLINE STA. 205+00
175+00
180+00
185+00
190+00
195+00
200+00
20+00
DDA #19
DDA #20
DDA #21
DDA #22
DDA #23
DDA #24
POINT DISCHARGE
DRAINAGE AREA 99 ACRES
Q25 = 122 CFS
DDA 19
EROSION CONTROL LEGEND
SILT TRAP TYPE A ALTERNATE 1
SILT TRAP TYPE A ALTERNATE 2
SILT TRAP TYPE B
SILT TRAP TYPE C
SILT FENCE
SF
TEMPORARY SILT DITCH
DISTURBED DRAINAGE AREA
OVERLAND SHEET FLOW
PROPOSED R/W
PROPOSED EASEMENT
DISTURBED DRAINAGE AREAS
SECTION
DISTURBED AREA (ACRES)
MAXIMUM SEDIMENT VOLUME (CU FT)
OUTFALL LATITUDE
OUTFALL LONGITUDE
DDA 19 10.844 39,039 37.3597 -83.8857
DDA 20 0.581 2,090
DDA 21 8.736 31,451
DDA 22 0.605 2,291
DDA 23 36.251 128,210 37.3767 -83.8746
DDA 24 0.850 3,060
MicroStation V8i 11.9.459
E-SHEET NAME:
USER: peggemeier
DATE PLOTTED: July 3, 2019
FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R245

FOR EROSION CONTROL ONLY



DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 23	36.251	130,503	37.3767	-83.8746
DDA 25	NOT USED			
DDA 26	0.775	2,789	37.3645	-83.8750
DDA 27	2.744	9,879		
DDA 28	6.387	22,993	37.3657	-83.8741
DDA 29	0.801	2,885		
DDA 30	16.446	59,204	37.3669	-83.8725

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1 — A
- SILT TRAP TYPE A ALTERNATE 2 — A
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

SCALE: 1" = 100'

EROSION CONTROL PLAN
KY 30
STA. 205+00 TO STA. 235+00

MicroStation v8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R246

EROSION CONTROL PLAN
KY 30
STA. 235+00 TO STA. 265+00

SCALE: 1" = 100'

FOR EROSION CONTROL ONLY

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU.FT.)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 30	16.446	59,204	37.3669	-83.8725
DDA 31	3.647	13,130		
DDA 32	1.672	6,018		
DDA 33	2.968	10,684		
DDA 34	10.667	38,402	37.3744	-83.8672
DDA 35	8.048	28,971	37.3758	-83.8658
DDA 36	2.530	9,108	37.3770	-83.8649

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

POINT DISCHARGE
DRAINAGE AREA 18 ACRES
Q25 = 27 CFS
DDA 34

POINT DISCHARGE
DRAINAGE AREA 13 ACRES
Q25 = 19 CFS
DDA 35

MATCHLINE STA. 235+00

MATCHLINE STA. 265+00

240+00 245+00 250+00 255+00 260+00

DDA #30 DDA #31 DDA #32 DDA #33 DDA #34 DDA #35 DDA #36

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R247

EROSION CONTROL PLAN
KY 30
STA. 265+00 TO STA. 295+00

SCALE: 1" = 100'

FOR EROSION CONTROL ONLY

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 35	8.048	28,971	37.3758	-83.8658
DDA 36	2.530	9,108	37.3770	-83.8649
DDA 37	1.466	5,276		
DDA 38	13.470	48,491	37.3790	-83.8611
DDA 39	2.580	9,287		
DDA 40	2.312	8,323	37.3797	-83.8590
DDA 41	6.960	25,055	37.3804	-83.8590
DDA 42	12.590	45,325	37.3818	-83.8574

MAINLINE STA. 280+00.00 = APPR. LT. & RT. STA. 50+00.00 (BATES VICKERS ROAD)

POINT DISCHARGE DRAINAGE AREA 48 ACRES Q25 = 77 CFS DDA 39

POINT DISCHARGE DRAINAGE AREA 16 ACRES Q25 = 25 CFS DDA 41

POINT DISCHARGE DRAINAGE AREA 36 ACRES Q25 = 50 CFS DDA 42

POINT DISCHARGE

MATCHLINE STA. 265+00

MATCHLINE STA. 295+00

DDA #35
DDA #36
DDA #37
DDA #38
DDA #39
DDA #40
DDA #41
DDA #42

270+00
275+00
280+00
285+00
290+00
42+50
45+00
55+00
58+00

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

MicroStation V8.11.9.459	E-SHEET NAME:	USER: peggemeier DATE PLOTTED: July 3, 2019	FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R248

EROSION CONTROL PLAN
KY 30
STA. 295+00 TO STA. 325+00

SCALE: 1" = 100'

FOR EROSION CONTROL ONLY

MATCHLINE STA. 325+00

MATCHLINE STA. 295+00

320+00

315+00

310+00

305+00

300+00

DDA #42

DDA #43

DDA #44

DDA #45

DDA #46

DDA #47

POINT DISCHARGE
DDA 44

DISTURBED DRAINAGE AREAS

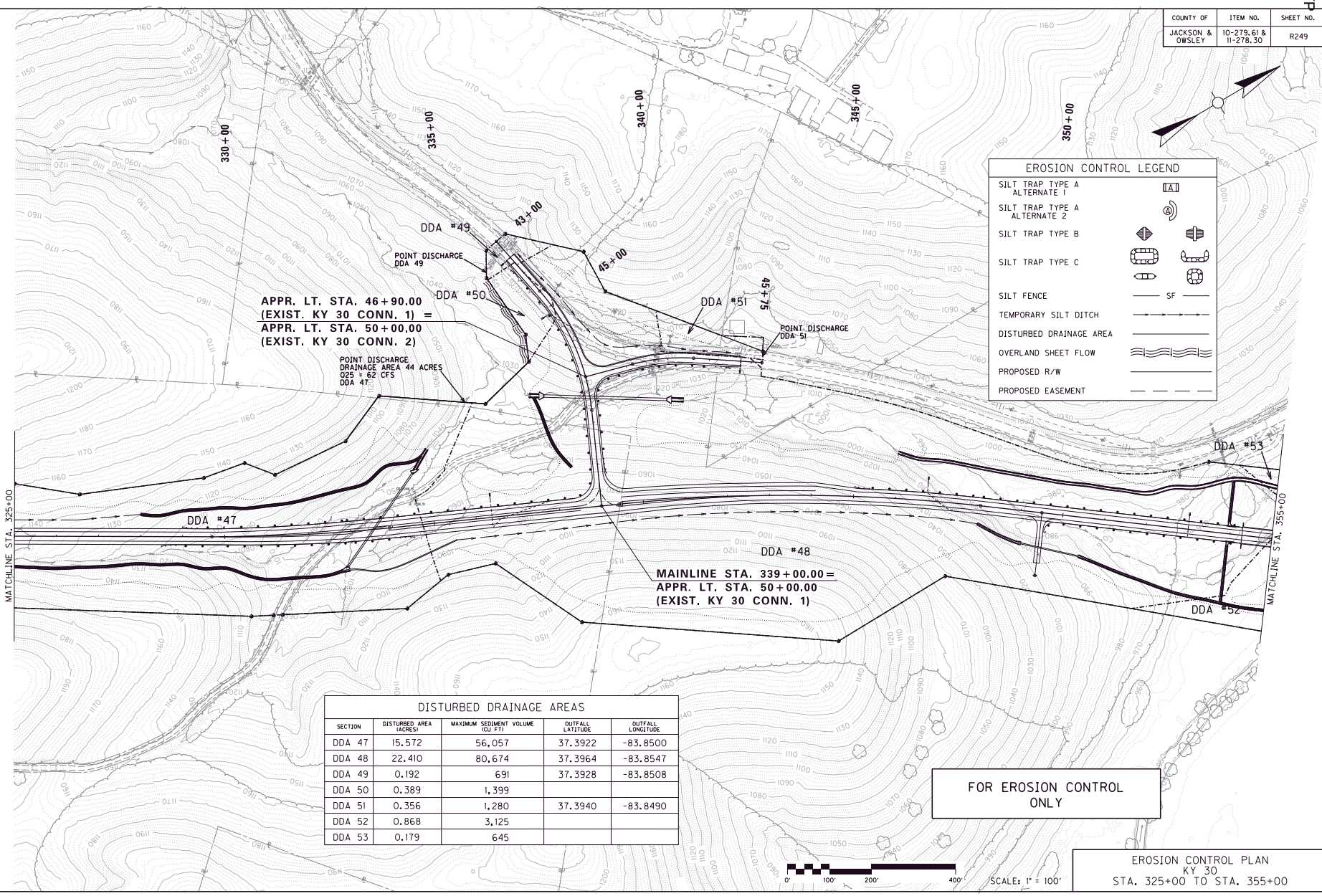
SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU. YDS.)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 42	12.590	45,325	37.3818	-83.8574
DDA 43	1.828	6,580		
DDA 44	1.911	6,880	37.3847	-83.8547
DDA 45	5.602	20,168		
DDA 46	0.779	2,804		
DDA 47	15.572	56,057	37.3922	-83.8500

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

MicroStation V8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R249



DISTURBED DRAINAGE AREAS

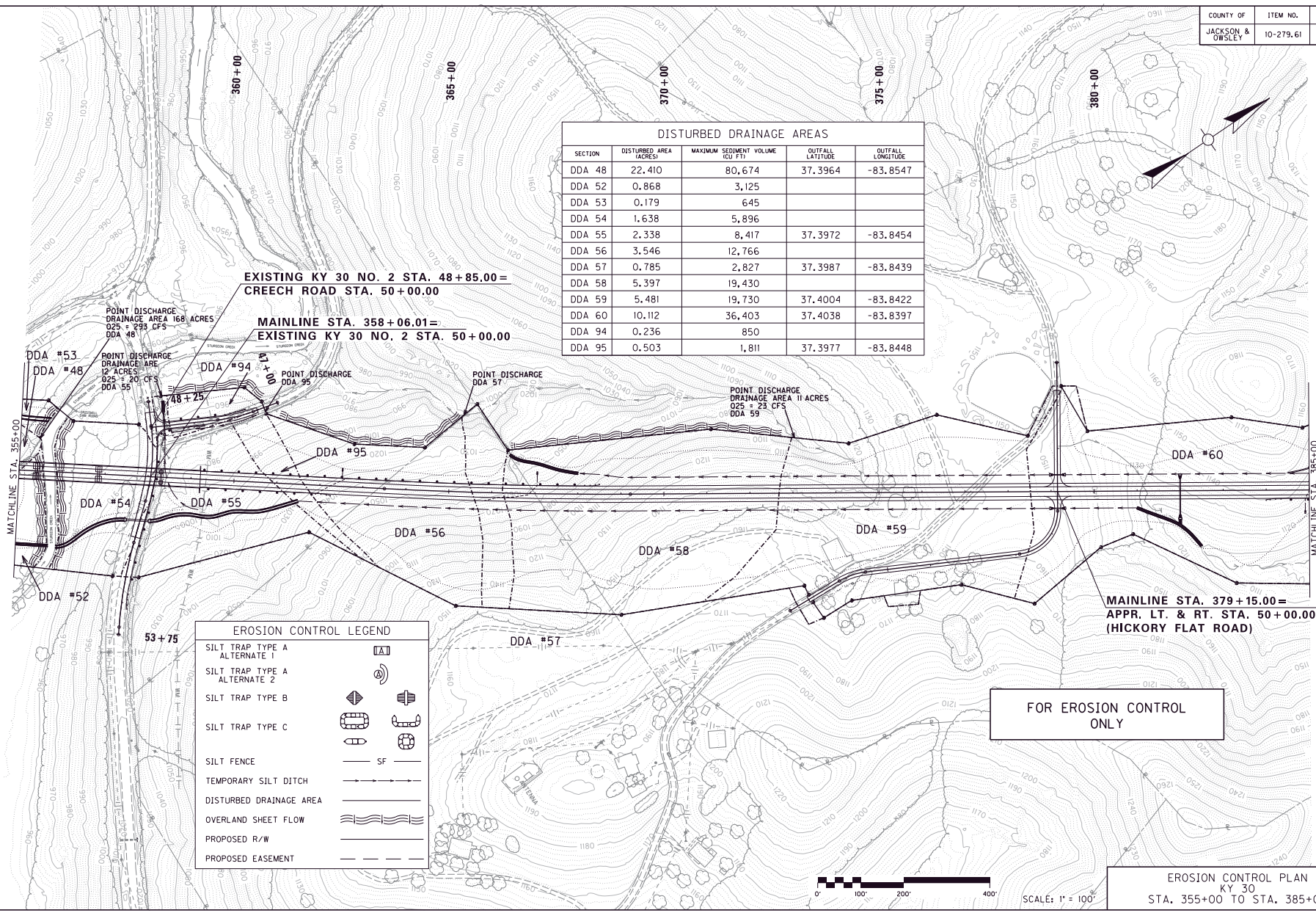
SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 47	15.572	56,057	37.3922	-83.8500
DDA 48	22.410	80,674	37.3964	-83.8547
DDA 49	0.192	691	37.3928	-83.8508
DDA 50	0.389	1,399		
DDA 51	0.356	1,280	37.3940	-83.8490
DDA 52	0.868	3,125		
DDA 53	0.179	645		

FOR EROSION CONTROL ONLY

EROSION CONTROL PLAN
KY 30
STA. 325+00 TO STA. 355+00

MicroStation v8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61	R250



DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 48	22.410	80,674	37.3964	-83.8547
DDA 52	0.868	3,125		
DDA 53	0.179	645		
DDA 54	1.638	5,896		
DDA 55	2.338	8,417	37.3972	-83.8454
DDA 56	3.546	12,766		
DDA 57	0.785	2,827	37.3987	-83.8439
DDA 58	5.397	19,430		
DDA 59	5.481	19,730	37.4004	-83.8422
DDA 60	10.112	36,403	37.4038	-83.8397
DDA 94	0.236	850		
DDA 95	0.503	1,811	37.3977	-83.8448

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1 (A1)
- SILT TRAP TYPE A ALTERNATE 2 (A2)
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE (SF)
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

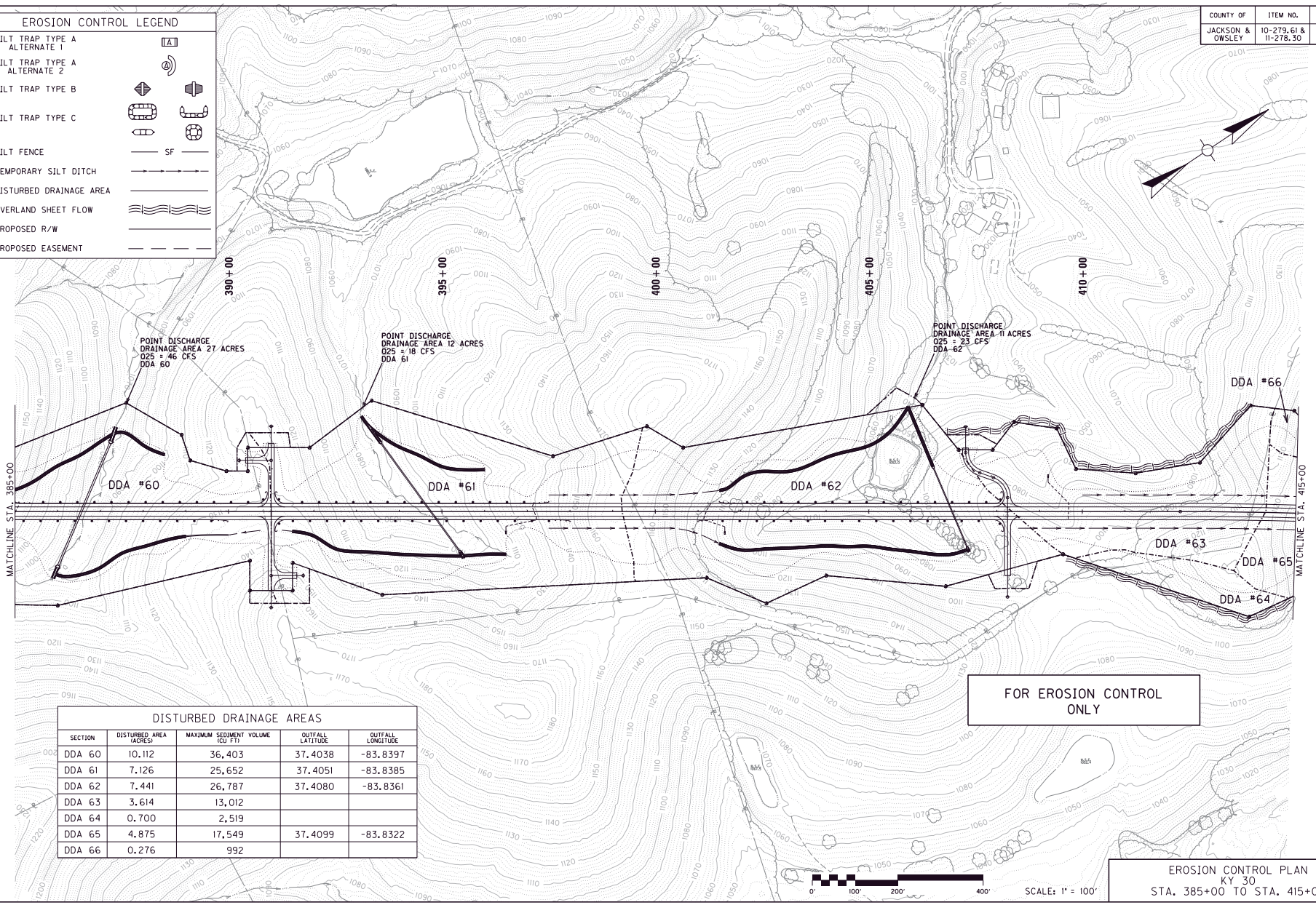
MicroStation v8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\10239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

EROSION CONTROL PLAN
KY 30
STA. 355+00 TO STA. 385+00

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R25I

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1 (A)
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT



FOR EROSION CONTROL ONLY

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 60	10.112	36,403	37.4038	-83.8397
DDA 61	7.126	25,652	37.4051	-83.8385
DDA 62	7.441	26,787	37.4080	-83.8361
DDA 63	3.614	13,012		
DDA 64	0.700	2,519		
DDA 65	4.875	17,549	37.4099	-83.8322
DDA 66	0.276	992		

EROSION CONTROL PLAN
KY 30
STA. 385+00 TO STA. 415+00

MicroStation v8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R252

EROSION CONTROL PLAN
KY 30
STA. 415+00 TO STA. 445+00

FOR EROSION CONTROL ONLY

SCALE: 1" = 100'

0' 100' 200' 400'

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 65	4.875	17,549	37.4099	-83.8322
DDA 66	0.276	992		
DDA 67	7.974	28,708		
DDA 68	2.268	8,163		
DDA 69	1.317	4,742	37.4132	-83.8303
DDA 70	2.558	9,208		
DDA 71	1.820	6,553		
DDA 72	10.189	36,680	37.4140	-83.8268

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

MAINLINE STA. 430+54.17 = EXISTING KY 1071 STA. 50+00.00

MATCHLINE STA. 415+00

MATCHLINE STA. 445+00

DDA #65
DDA #66
DDA #67
DDA #68
DDA #69
DDA #70
DDA #71
DDA #72

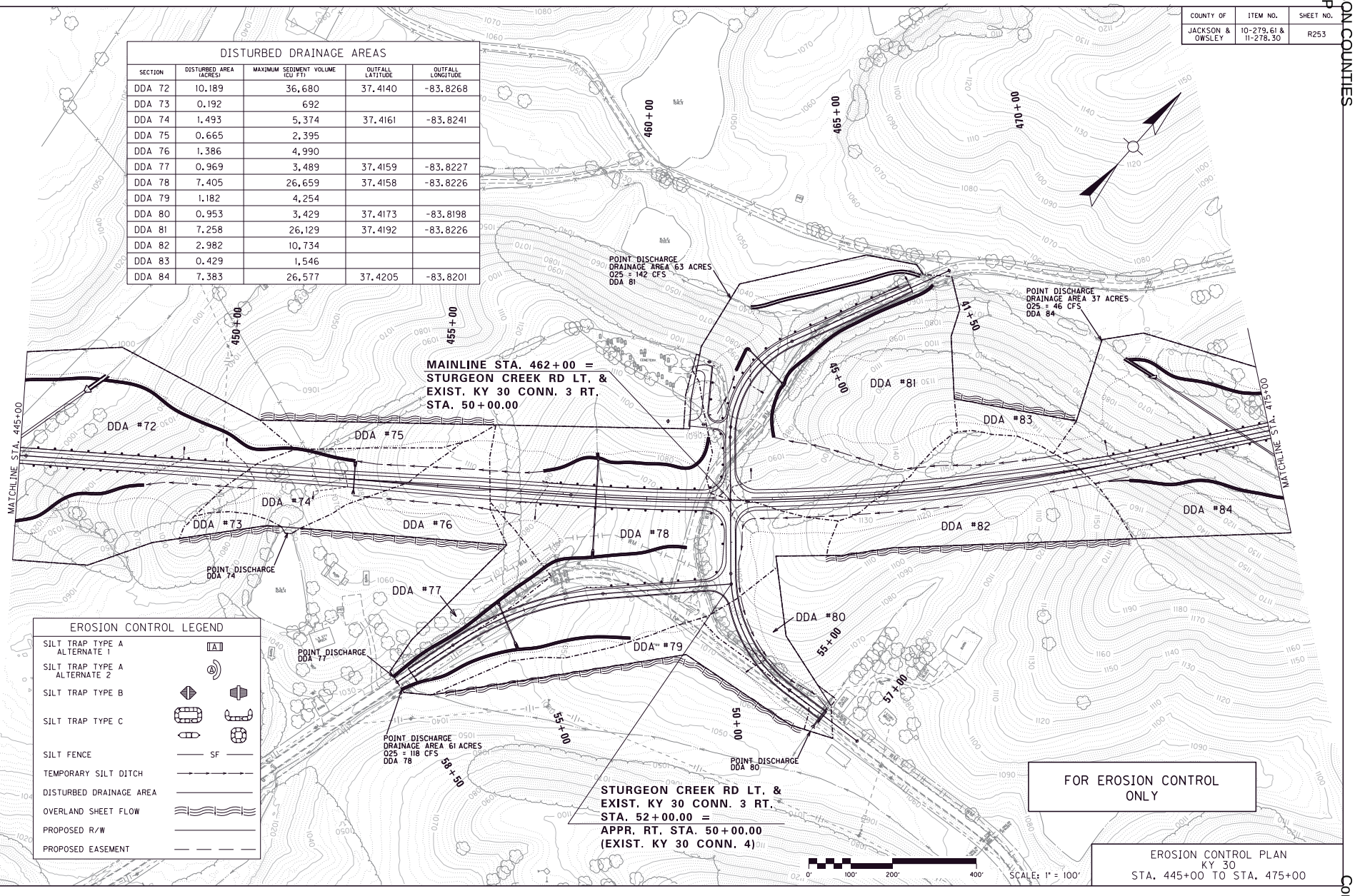
POINT DISCHARGE DDA 65
POINT DISCHARGE DDA 69
POINT DISCHARGE DRAINAGE AREA 157 ACRES Q25 = 491 CFS DDA 72

420+00
425+00
430+00
435+00
440+00
48+00
52+00

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R253

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 72	10.189	36,680	37.4140	-83.8268
DDA 73	0.192	692		
DDA 74	1.493	5,374	37.4161	-83.8241
DDA 75	0.665	2,395		
DDA 76	1.386	4,990		
DDA 77	0.969	3,489	37.4159	-83.8227
DDA 78	7.405	26,659	37.4158	-83.8226
DDA 79	1.182	4,254		
DDA 80	0.953	3,429	37.4173	-83.8198
DDA 81	7.258	26,129	37.4192	-83.8226
DDA 82	2.982	10,734		
DDA 83	0.429	1,546		
DDA 84	7.383	26,577	37.4205	-83.8201



EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

FOR EROSION CONTROL ONLY

EROSION CONTROL PLAN
KY 30
STA. 445+00 TO STA. 475+00

MicroStation v8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD\239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 & 11-278.30	R254

EROSION CONTROL PLAN
KY 30
STA. 475+00 TO STA. 505+00

SCALE: 1" = 100'

FOR EROSION CONTROL ONLY

MATCHLINE STA. 505+00

MATCHLINE STA. 475+00

DDA #84
DDA #85
DDA #86
DDA #87
DDA #88
DDA #89
DDA #90
DDA #91
DDA #92
DDA #93
DDA #100
DDA #101

POINT DISCHARGE DDA 92

POINT DISCHARGE DDA 90 AREA 29 ACRES

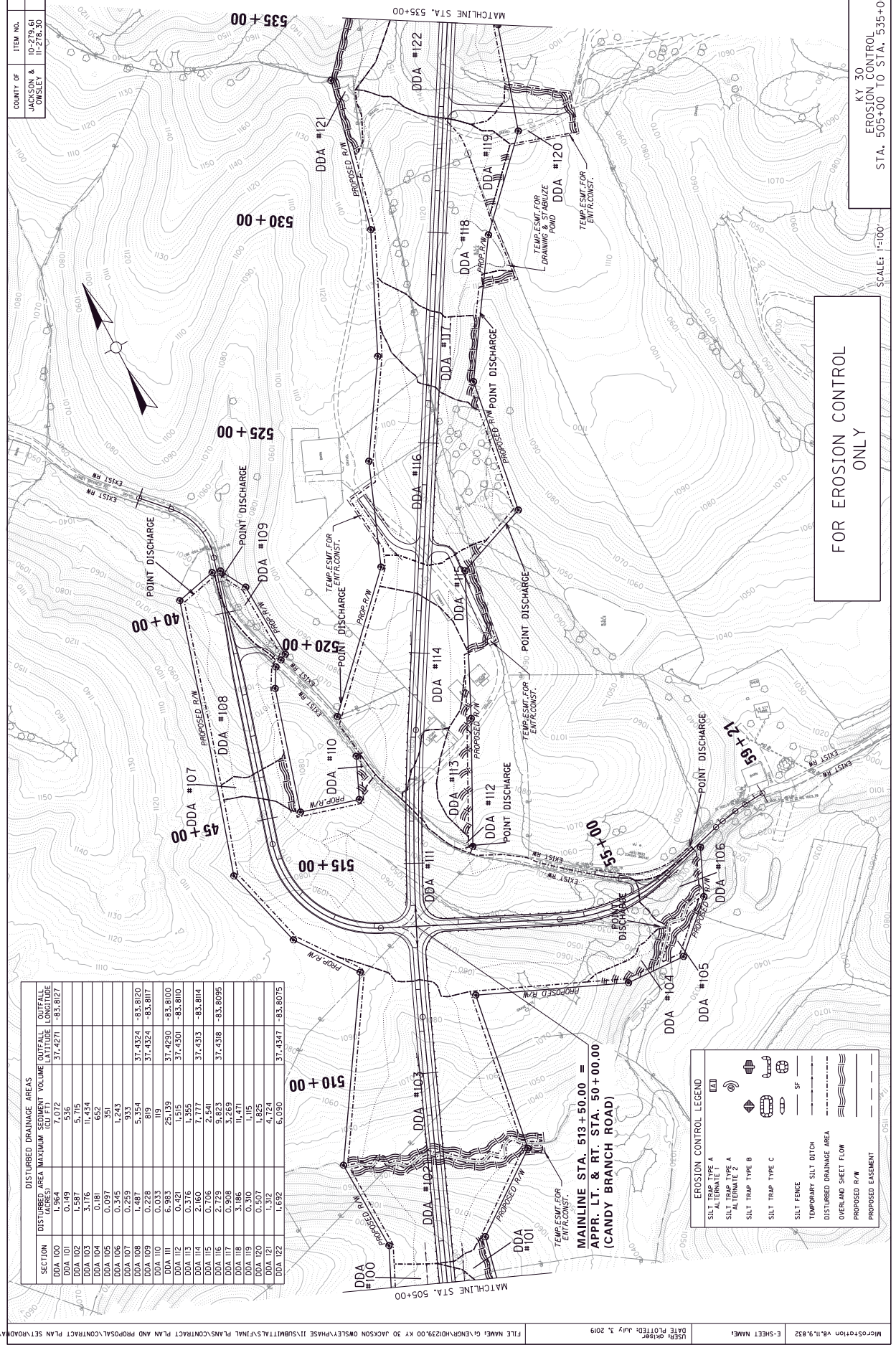
DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)*	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 84	7.383	26,577	37.4205	-83.8201
DDA 85	1.623	5,841		
DDA 86	2.138	7,696		
DDA 87	1.092	3,932		
DDA 88	1.757	6,324		
DDA 89	0.480	1,728		
DDA 90	5.492	19,770	37.4247	-83.8141
DDA 91	1.746	6,284		
DDA 92	1.666	5,998	37.4259	-83.8134
DDA 93	0.253	912		
DDA 96 TO DDA 99 NOT USED				
DDA 100	1.964	7,072	37.4271	-83.8127
DDA 101	0.149	536		

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

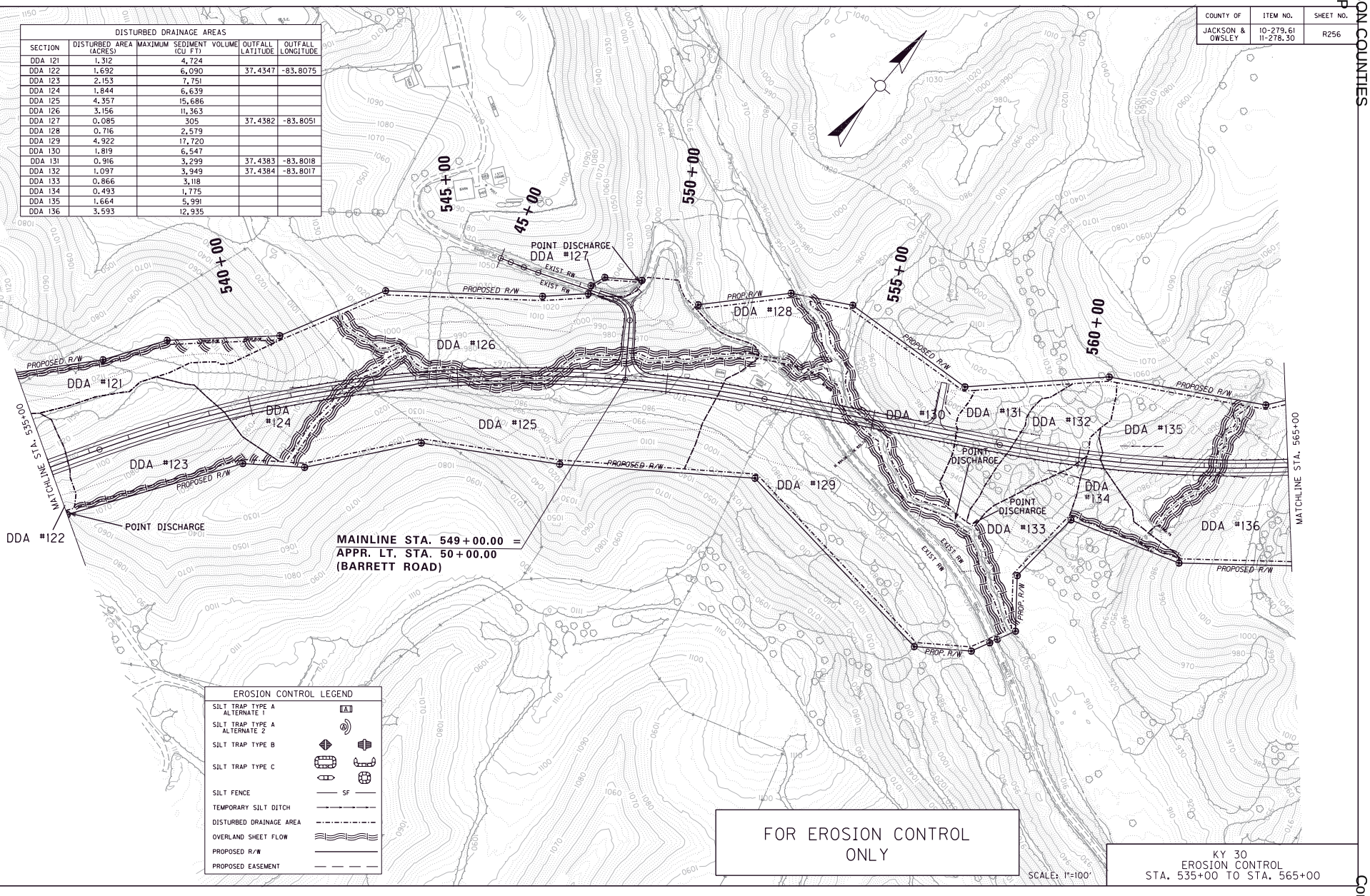
MicroStation V8.11.9.459 | E-SHEET NAME: | USER: peggemeier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2


COUNTY OF
JACKSON & OWSLEY
ITEM NO.
10-279.61
11-278.30
SHEET NO.
R255
KY 30
EROSION CONTROL
STA. 505+00 TO STA. 535+00
SCALE: 1"=100'
FOR EROSION CONTROL ONLY
MAINLINE STA. 513+50.00 = APPR. LT. & RT. STA. 50+00.00 (CANDY BRANCH ROAD)
MATCHLINE STA. 505+00
MATCHLINE STA. 535+00
DISTURBED DRAINAGE AREAS
SECTION | DISTURBED AREA (ACRES) | MAXIMUM SEDIMENT VOLUME (CU FT) | OUTFALL LATITUDE | OUTFALL LONGITUDE
DDA 100 | 1.964 | 7,072 | 37.4271 | -83.8127
DDA 101 | 0.149 | 536
DDA 102 | 1.587 | 5,715
DDA 103 | 3.176 | 11,434
DDA 104 | 0.181 | 652
DDA 105 | 0.097 | 351
DDA 106 | 0.345 | 1,243
DDA 107 | 0.259 | 933 | 37.4324 | -83.8120
DDA 108 | 1.487 | 5,354 | 37.4324 | -83.8117
DDA 109 | 0.228 | 819
DDA 110 | 0.033 | 119
DDA 111 | 6.983 | 25,139 | 37.4290 | -83.8100
DDA 112 | 0.421 | 1,515 | 37.4301 | -83.8110
DDA 113 | 0.376 | 1,355
DDA 114 | 2.160 | 7,777 | 37.4313 | -83.8114
DDA 115 | 0.706 | 2,541
DDA 116 | 2.729 | 9,823 | 37.4318 | -83.8095
DDA 117 | 0.908 | 3,269
DDA 118 | 3.186 | 11,471
DDA 119 | 0.310 | 1,115
DDA 120 | 0.507 | 1,825
DDA 121 | 1.312 | 4,724 | 37.4347 | -83.8075
DDA 122 | 1.692 | 6,090
EROSION CONTROL LEGEND
SILT TRAP TYPE A
SILT TRAP TYPE A ALTERNATE 1
SILT TRAP TYPE A ALTERNATE 2
SILT TRAP TYPE B
SILT TRAP TYPE C
SILT FENCE
TEMPORARY SILT DITCH
DISTURBED DRAINAGE AREA
OVERLAND SHEET FLOW
PROPOSED R/W
PROPOSED EASEMENT
DDA #100
DDA #101
DDA #102
DDA #103
DDA #104
DDA #105
DDA #106
DDA #107
DDA #108
DDA #109
DDA #110
DDA #111
DDA #112
DDA #113
DDA #114
DDA #115
DDA #116
DDA #117
DDA #118
DDA #119
DDA #120
DDA #121
DDA #122
PROP. R/W
PROPOSED R/W
EXIST. R/W
POINT DISCHARGE
TEMP. ESMT. FOR ENTR. CONST.
TEMP. ESMT. FOR DRAINAGE & ST. ABILIZE POND
515+00
520+00
525+00
530+00
535+00
40+00
45+00
55+00
59+21
510+00

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 11-278.30	R256

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 121	1.312	4,724		
DDA 122	1.692	6,090	37.4347	-83.8075
DDA 123	2.153	7,751		
DDA 124	1.844	6,639		
DDA 125	4.357	15,686		
DDA 126	3.156	11,363		
DDA 127	0.085	305	37.4382	-83.8051
DDA 128	0.716	2,579		
DDA 129	4.922	17,720		
DDA 130	1.819	6,547		
DDA 131	0.916	3,299	37.4383	-83.8018
DDA 132	1.097	3,949	37.4384	-83.8017
DDA 133	0.866	3,118		
DDA 134	0.493	1,775		
DDA 135	1.664	5,991		
DDA 136	3.593	12,935		



EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE 1
- SILT TRAP TYPE A ALTERNATE 2
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

FOR EROSION CONTROL ONLY

SCALE: 1"=100'

KY 30
EROSION CONTROL
STA. 535+00 TO STA. 565+00

MicroStation v8.11.9.832 | E-SHEET NAME: | USER: aclisel DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 11-278.30	R257

KY 30
EROSION CONTROL
STA. 565+00 TO STA. 590+00

SCALE: 1"=100'

FOR EROSION CONTROL ONLY

DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 136	3.593	12,935		
DDA 137	0.271	976		
DDA 138	4.256	15,321		
DDA 139	0.840	3,022		
DDA 140	5.307	19,105		
DDA 141	0.204	735		
DDA 142	3.660	13,176		
DDA 143	1.500	5,401	37.4427	-83.7954
DDA 144	0.099	358		
DDA 145	1.498	5,393		
DDA 146	0.222	798		
DDA 147	2.360	8,495	37.4443	-83.7940
DDA 148	0.997	3,590	37.4445	-83.7938
DDA 149	0.426	1,533		
DDA 150	3.396	12,225		
DDA 151	0.566	2,038	37.4449	-83.7934

EROSION CONTROL LEGEND

- SILT TRAP TYPE A ALTERNATE I
- SILT TRAP TYPE A ALTERNATE II
- SILT TRAP TYPE B
- SILT TRAP TYPE C
- SILT FENCE — SF —
- TEMPORARY SILT DITCH
- DISTURBED DRAINAGE AREA
- OVERLAND SHEET FLOW
- PROPOSED R/W
- PROPOSED EASEMENT

MATCHLINE STA. 565+00

MATCHLINE STA. 590+00

570+00

575+00

580+00

585+00

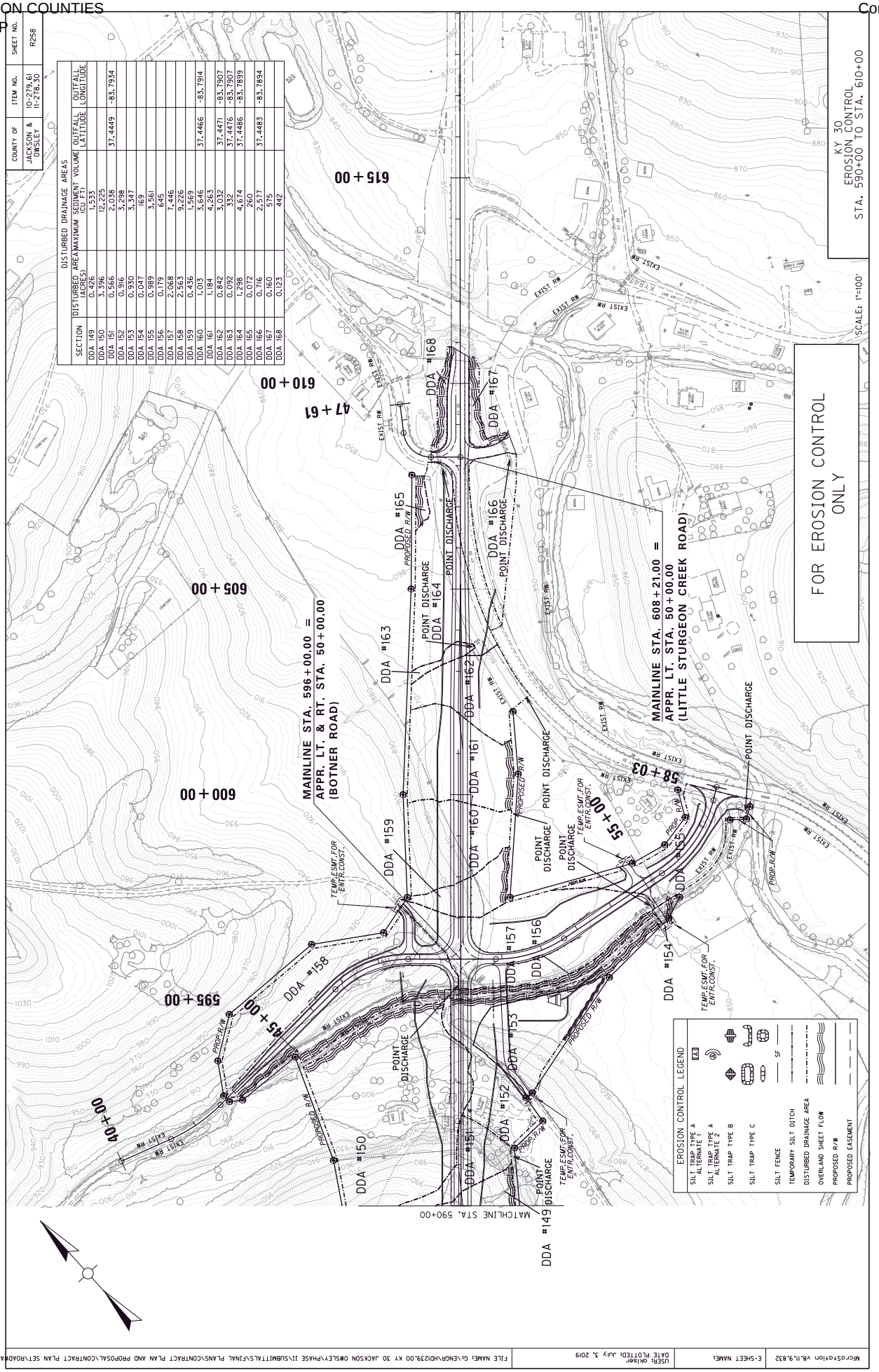
DDA #136 DDA #137 DDA #138 DDA #139 DDA #140 DDA #141 DDA #142 DDA #143 DDA #144 DDA #145 DDA #146 DDA #147 DDA #148 DDA #149 DDA #150 DDA #151

TEMP. ESMT. FOR ENTR. CONST.

PROPOSED R/W

POINT DISCHARGE

MicroStation V8.11.9.832 | E-SHEET NAME: | USER: akleier DATE PLOTTED: July 3, 2019 | FILE NAME: G:\ENGR\HD1239.00 KY 30 JACKSON OWSLEY\PHASE II\SUBMITTALS\FINAL PLANS\CONTRACT PLAN AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\R2



DISTURBED DRAINAGE AREAS

SECTION	DISTURBED AREA (ACRES)	MAXIMUM SEDIMENT VOLUME (CU FT)	OUTFALL LATITUDE	OUTFALL LONGITUDE
DDA 149	0.426	1,533		
DDA 150	3.396	12,225		
DDA 151	0.566	2,038	37.4449	-83.7934
DDA 152	0.916	3,298		
DDA 153	0.930	3,347		
DDA 154	0.047	169		
DDA 155	0.989	3,561		
DDA 156	0.179	645		
DDA 157	2.068	7,446		
DDA 158	2.563	9,226		
DDA 159	0.436	1,569		
DDA 160	1.013	3,646	37.4466	-83.7914
DDA 161	1.184	4,263		
DDA 162	0.842	3,032	37.4471	-83.7907
DDA 163	0.092	332	37.4476	-83.7907
DDA 164	1.298	4,674	37.4486	-83.7899
DDA 165	0.072	260		
DDA 166	0.716	2,577	37.4483	-83.7894
DDA 167	0.160	575		
DDA 168	0.123	442		

COUNTY OF	ITEM NO.	SHEET NO.
JACKSON & OWSLEY	10-279.61 11-278.30	R258

KENTUCKY TRANSPORTATION CABINET
COMMUNICATING ALL PROMISES (CAP)
ACTIVE

Item No. 10 - 279.61 **Project Mgr.** KYTC\DARREN.BACK

County OWSLEY **Route** KY-30

CAP #	Date of Promise	Promise made to:	Location of Promise
1	21-AUG-18	Parcel 55 - John Moore	On right of way acquired from P55

CAP Description

KYTC has agreed that the owner can harvest any marketable timber on property until October 1, 2018.

2	21-AUG-18	Parcel 55 - John Moore	On right of way acquired from P55

CAP Description

The awarded contractor will attempt to salvage any concrete culvert pipes from P55 right of way acquisition area.

3	21-AUG-18	Parcel 55 - John Moore	Mainline Sta. 126+10 R and L

CAP Description

KYTC has an agreement with the owner on the alignment of their driveway. The driveway shall be constructed as shown on the plans. Any deviation has to be approved by the owner and KYTC engineer.

4	19-JUN-18	Parcel 80 - Phillip & Linda Akemon	Parcel 80 Remainder

CAP Description

A water meter shall be placed on the eastern ~0.5 acre remainder of the property. This meter will be installed in a in a utility relocation contract with Jackson County Water Association.

5	19-MAR-18	Parcel 81 - Chester L. Smith	Sta. 157+80 R 390'

CAP Description

The owner has agreed to give KYTC access to the property for only the purpose of demolishing the barn at this location.

6	25-OCT-17	Parcel 96 - James E. & Sheila Strong	Appr. LT. Bates Vickers Road ~Sta. 43+60 LT

CAP Description

KYTC has agreed to cap the open water well on this parcel. Roadway plans have been revised and appropriate quantities hav been added to the summary sheet to complete this work.

7	07-SEP-17	Parcel 104 - Raymond & Wayne Flannery	Mainline Sta. 349+50 RT

CAP Description

KYTC agreed to add an entrance at this location to Parcel 104. Plans have been revised and quantities added to construct the entrance.

8	08-MAR-18	Parcel 118 - Freda Marcum	Mainline Sta. 450+00 - 455+00

CAP Description

KYTC agreed to revise the drainage patterns along mainline in this area to what is shown on the plans. Any deviation would have to be agreed on by the property owner and KYTC engineer. Appropriate quantities have been added to complete the work.

9	21-FEB-18	Parcel 132 - Betty Flannery	Mainline Sta. 556+50

CAP Description

KYTC agreed to add an entrance at this location to Parcel 132. Plans have been revised and quantities added to construct the entrance.

10	01-JUL-19	Parcel 106 - Wendell & Linda Kilburn	Hickory Flat Rd. Sta. 47+50 RT

CAP Description

The contractor shall drain existing pond, place fill in the pond up to surrounding grade, and seed and protect. An agreement was reached with the property owner for the contractor to perform this work on private property.

MATERIAL SUMMARY

CONTRACT ID: 191044 **121GR19D044-STP** **DE05500301944**

LONDON-BOONEVILLE ROAD(KY-30) IMPROVE KY-30 FROM US-421 TO THE OWSLEY COUNTY LINE GRADE, DRAIN & SURFACE WITH BRIDGE, A DISTANCE OF 9 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0790	00003	CRUSHED STONE BASE	73,901.00	TON
0795	00008	CEMENT STABILIZED ROADBED	186,442.00	SQYD
0800	00020	TRAFFIC BOUND BASE	793.00	TON
0805	00100	ASPHALT SEAL AGGREGATE	848.00	TON
0810	00103	ASPHALT SEAL COAT	99.00	TON
0815	00212	CL2 ASPH BASE 1.00D PG64-22	18,130.00	TON
0820	00221	CL2 ASPH BASE 0.75D PG64-22	27,990.00	TON
0825	00301	CL2 ASPH SURF 0.38D PG64-22	13,522.00	TON
0830	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	125.00	TON
0835	00358	ASPHALT CURING SEAL	187.00	TON
0840	02542	CEMENT	3,557.00	TON
0845	02702	SAND FOR BLOTTER	466.00	TON
0850	20071EC	JOINT ADHESIVE	110,505.00	LF
0855	24781EC	INTELLIGENT COMPACTION FOR ASPHALT	59,642.00	TON
0860	24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	3,332,734.00	SF
0865	24986EC	HMA ELECTRONIC DELIVERY MGMT SYSTEM - JACKSON	1.00	L S
0870	00190	LEVELING & WEDGING PG64-22	50.00	TON
0875	00021	DRAINAGE BLANKET-EMBANKMENT	2,200.00	CUYD
0880	00078	CRUSHED AGGREGATE SIZE NO 2	72,528.00	TON
0885	01000	PERFORATED PIPE-4 IN	4,522.00	LF
0890	01010	NON-PERFORATED PIPE-4 IN	572.00	LF
0895	01020	PERF PIPE HEADWALL TY 1-4 IN	22.00	EACH
0900	01024	PERF PIPE HEADWALL TY 2-4 IN	10.00	EACH
0905	01028	PERF PIPE HEADWALL TY 3-4 IN	13.00	EACH
0910	01032	PERF PIPE HEADWALL TY 4-4 IN	7.00	EACH
0915	01310	REMOVE PIPE	102.00	LF
0920	01891	ISLAND HEADER CURB TYPE 2	250.00	LF
0925	01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	288.00	EACH
0930	01990	DELINEATOR FOR BARRIER WALL-B/W	21.00	EACH
0935	02014	BARRICADE-TYPE III	16.00	EACH
0940	02091	REMOVE PAVEMENT	3,576.00	SQYD
0945	02159	TEMP DITCH	17,127.00	LF
0950	02160	CLEAN TEMP DITCH	8,564.00	LF
0955	02200	ROADWAY EXCAVATION	3,994,530.00	CUYD
0960	02242	WATER	7.00	MGAL
0965	02351	GUARDRAIL-STEEL W BEAM-S FACE	28,550.00	LF
0970	02360	GUARDRAIL TERMINAL SECTION NO 1	24.00	EACH
0975	02363	GUARDRAIL CONNECTOR TO BRIDGE END TY A	10.00	EACH
0980	02371	GUARDRAIL END TREATMENT TYPE 7	4.00	EACH
0985	02381	REMOVE GUARDRAIL	475.00	LF
0990	02391	GUARDRAIL END TREATMENT TYPE 4A	44.00	EACH
0995	02402	REMOVE STONE MASONRY	25.00	CUYD

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1000	02403	REMOVE CONCRETE MASONRY	80.00	CUYD
1005	02429	RIGHT-OF-WAY MONUMENT TYPE 1	269.00	EACH
1010	02431	WITNESS R/W MONUMENT TYPE 2	2.00	EACH
1015	02432	WITNESS POST	268.00	EACH
1020	02475	PLUG WATER WELL	1.00	EACH
1025	02488	CHANNEL LINING CLASS IV	37,414.00	CUYD
1030	02545	CLEARING AND GRUBBING - 380 ACRES-JACKSON	1.00	LS
1035	02555	CONCRETE-CLASS B	566.00	CUYD
1040	02562	TEMPORARY SIGNS	2,100.00	SQFT
1045	02585	EDGE KEY	384.00	LF
1050	02596	FABRIC-GEOTEXTILE TYPE I - (FOR CONST. ENTR.)	360.00	SQYD
1055	02599	FABRIC-GEOTEXTILE TYPE IV - (GEOTECH NOTE 14, 16 & 21)	16,600.00	SQYD
1060	02600	FABRIC GEOTEXTILE TY IV FOR PIPE	14,308.00	SQYD
1065	02650	MAINTAIN & CONTROL TRAFFIC - JACKSON	1.00	LS
1070	02671	PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH
1075	02676	MOBILIZATION FOR MILL & TEXT - JACKSON	1.00	LS
1080	02677	ASPHALT PAVE MILLING & TEXTURING	1,136.00	TON
1085	02696	SHOULDER RUMBLE STRIPS	68,500.00	LF
1090	02701	TEMP SILT FENCE	17,127.00	LF
1095	02703	SILT TRAP TYPE A	348.00	EACH
1100	02704	SILT TRAP TYPE B	348.00	EACH
1105	02705	SILT TRAP TYPE C	348.00	EACH
1110	02706	CLEAN SILT TRAP TYPE A	348.00	EACH
1115	02707	CLEAN SILT TRAP TYPE B	348.00	EACH
1120	02708	CLEAN SILT TRAP TYPE C	348.00	EACH
1125	02726	STAKING - JACKSON	1.00	LS
1130	02731	REMOVE STRUCTURE - (EXISTING 6' X 5' RCBC STA. 48+65)-JACKSON	1.00	LS
1135	05950	EROSION CONTROL BLANKET	665,688.00	SQYD
1140	05952	TEMP MULCH	1,121,024.00	SQYD
1145	05953	TEMP SEEDING AND PROTECTION	840,768.00	SQYD
1150	05963	INITIAL FERTILIZER	174.00	TON
1155	05964	MAINTENANCE FERTILIZER	87.00	TON
1160	05985	SEEDING AND PROTECTION	1,026,364.00	SQYD
1165	05992	AGRICULTURAL LIMESTONE	1,042.00	TON
1170	06406	SBM ALUM SHEET SIGNS .080 IN	793.00	SQFT
1175	06407	SBM ALUM SHEET SIGNS .125 IN	200.00	SQFT
1180	06410	STEEL POST TYPE 1	2,090.00	LF
1185	06490	CLASS A CONCRETE FOR SIGNS	5.52	CUYD
1190	06510	PAVE STRIPING-TEMP PAINT-4 IN	37,812.00	LF
1195	06511	PAVE STRIPING-TEMP PAINT-6 IN	148,041.00	LF
1200	06514	PAVE STRIPING-PERM PAINT-4 IN	18,906.00	LF
1205	06550	PAVE STRIPING-TEMP REM TAPE-W	2,340.00	LF
1210	06551	PAVE STRIPING-TEMP REM TAPE-Y	2,340.00	LF
1215	06556	PAVE STRIPING-DUR TY 1-6 IN W	2,340.00	LF
1220	06557	PAVE STRIPING-DUR TY 1-6 IN Y	2,340.00	LF
1225	06568	PAVE MARKING-THERMO STOP BAR-24IN	219.00	LF
1230	06569	PAVE MARKING-THERMO CROSS-HATCH	2,838.00	SQFT
1235	06574	PAVE MARKING-THERMO CURV ARROW	96.00	EACH
1240	10020NS	FUEL ADJUSTMENT	854,423.00	DOLL

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1245	10030NS	ASPHALT ADJUSTMENT	233,176.00	DOLL
1250	20430ED	SAW CUT	651.00	LF
1255	21289ED	LONGITUDINAL EDGE KEY	525.00	LF
1260	22045NN	FLUME INLET TY 2-MOD	6.00	EACH
1265	22664EN	WATER BLASTING EXISTING STRIPE	5,000.00	LF
1270	23821EC	CENTERLINE RUMBLE STRIPS-12 IN	34,600.00	LF
1275	24489EC	INLAID PAVEMENT MARKER	236.00	EACH
1280	24489EC	INLAID PAVEMENT MARKER	654.00	EACH
1285	24631EC	BARCODE SIGN INVENTORY	224.00	EACH
1290	24814EC	PIPELINE INSPECTION	7,234.00	LF
1295	24845EC	UTILITY COORDINATION - JACKSON	1.00	LS
1300	24995EC	PAVE STRIPING-SPRAY THERMO-6 IN W	80,646.00	LF
1305	24996EC	PAVE STRIPING-SPRAY THERMO-6 IN Y	67,395.00	LF
1310	00462	CULVERT PIPE-18 IN	927.00	LF
1315	00464	CULVERT PIPE-24 IN	1,870.00	LF
1320	00466	CULVERT PIPE-30 IN	1,840.00	LF
1325	00468	CULVERT PIPE-36 IN	79.00	LF
1330	00469	CULVERT PIPE-42 IN	1,037.00	LF
1335	00470	CULVERT PIPE-48 IN	948.00	LF
1340	00471	CULVERT PIPE-54 IN	533.00	LF
1345	00439	ENTRANCE PIPE-12 IN	38.00	LF
1350	00440	ENTRANCE PIPE-15 IN	259.00	LF
1355	00441	ENTRANCE PIPE-18 IN	376.00	LF
1360	00443	ENTRANCE PIPE-24 IN	61.00	LF
1365	00445	ENTRANCE PIPE-30 IN	190.00	LF
1370	24561EN	ENTRANCE PIPE-42 IN	52.00	FT
1375	01511	DROP BOX INLET TYPE 5D	1.00	EACH
1380	01450	S & F BOX INLET-OUTLET-18 IN	5.00	EACH
1385	01451	S & F BOX INLET-OUTLET-24 IN	7.00	EACH
1390	01453	S & F BOX INLET-OUTLET-36 IN	1.00	EACH
1395	01204	PIPE CULVERT HEADWALL-18 IN	7.00	EACH
1400	01208	PIPE CULVERT HEADWALL-24 IN	15.00	EACH
1405	01210	PIPE CULVERT HEADWALL-30 IN	14.00	EACH
1410	01212	PIPE CULVERT HEADWALL-36 IN	1.00	EACH
1415	01214	PIPE CULVERT HEADWALL-42 IN	12.00	EACH
1420	01216	PIPE CULVERT HEADWALL-48 IN	6.00	EACH
1425	24026EC	PIPE CULVERT HEADWALL-54 IN	2.00	EACH
1430	08100	CONCRETE-CLASS A	74.20	CUYD
1435	08104	CONCRETE-CLASS AA	392.00	CUYD
1440	08150	STEEL REINFORCEMENT	9,850.00	LB
1445	08151	STEEL REINFORCEMENT-EPOXY COATED	86,323.00	LB
1450	22417EN	DRILLED SHAFT-54 IN-COMMON	27.00	LF
1455	03299	ARMORED EDGE FOR CONCRETE	76.00	LF
1460	08019	CYCLOPEAN STONE RIP RAP	180.00	TON
1465	08020	CRUSHED AGGREGATE SLOPE PROT	98.00	TON
1470	02998	MASONRY COATING	1,352.00	SQYD
1475	08046	PILES-STEEL HP12X53	303.00	LF
1480	08094	PILE POINTS-12 IN	14.00	EACH
1485	20637ED	DRILLED SHAFT-ROCK 48 IN	28.00	LF
1490	24098EC	PPC I-BEAM TYPE HN 66-49	924.70	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1495	21532ED	RAIL SYSTEM TYPE III	466.00	LF
1500	02231	STRUCTURE GRANULAR BACKFILL	276.00	CUYD
1505	21084ED	SOUNDINGS	27.00	LF
1510	20746ED	ROCK CORINGS	48.00	LF
1515	21432NC	CONCRETE FORMLINER	1,293.00	SQFT
1520	23168ED	CONCRETE STAINING	144.00	SQYD
1525	22861EN	HIGH STRENGTH GEOTEXTILE FABRIC TY V	1,706.00	SQYD
1530	24595EN	ELASTICIZED EPS - (10" THICKNESS)	136.00	SQYD
1535	08033	TEST PILES	61.00	LF
1540	08100	CONCRETE-CLASS A	286.20	CUYD
1545	08150	STEEL REINFORCEMENT	21,047.00	LB
1550	08003	FOUNDATION PREPARATION	1.00	LS
1555	08002	STRUCTURE EXCAV-SOLID ROCK	72.80	CUYD
1560	02223	GRANULAR EMBANKMENT	61.60	CUYD
1565	08100	CONCRETE-CLASS A	541.60	CUYD
1570	08150	STEEL REINFORCEMENT	56,774.00	LB
1575	08003	FOUNDATION PREPARATION	1.00	LS
1580	08002	STRUCTURE EXCAV-SOLID ROCK	188.00	CUYD
1585	02555	CONCRETE-CLASS B	10.00	CUYD
1590	08100	CONCRETE-CLASS A	118.90	CUYD
1595	08150	STEEL REINFORCEMENT	9,723.00	LB
1600	08003	FOUNDATION PREPARATION	1.00	LS
1605	08002	STRUCTURE EXCAV-SOLID ROCK	79.80	CUYD
1610	02223	GRANULAR EMBANKMENT	5.00	CUYD
1615	08100	CONCRETE-CLASS A	325.00	CUYD
1620	08150	STEEL REINFORCEMENT	27,230.00	LB
1625	08003	FOUNDATION PREPARATION	1.00	LS
1630	08002	STRUCTURE EXCAV-SOLID ROCK	154.10	CUYD
1635	02555	CONCRETE-CLASS B	45.40	CUYD
1640	08100	CONCRETE-CLASS A	141.70	CUYD
1645	08150	STEEL REINFORCEMENT	11,579.00	LB
1650	08003	FOUNDATION PREPARATION	1.00	LS
1655	08002	STRUCTURE EXCAV-SOLID ROCK	5.00	CUYD
1660	02223	GRANULAR EMBANKMENT	64.00	CUYD
1665	08100	CONCRETE-CLASS A	315.50	CUYD
1670	08104	CONCRETE-CLASS AA	677.20	CUYD
1675	08150	STEEL REINFORCEMENT	55,899.00	LB
1680	08151	STEEL REINFORCEMENT-EPOXY COATED	187,081.00	LB
1685	20744ED	DRILLED SHAFT 60 IN-COMMON	34.00	LF
1690	03299	ARMORED EDGE FOR CONCRETE	76.00	LF
1695	08019	CYCLOPEAN STONE RIP RAP	628.00	TON
1700	08020	CRUSHED AGGREGATE SLOPE PROT	196.00	TON
1705	02998	MASONRY COATING	2,973.00	SQYD
1710	08046	PILES-STEEL HP12X53	477.00	LF
1715	08094	PILE POINTS-12 IN	14.00	EACH
1720	20743ED	DRILLED SHAFT 54 IN-SOLID ROCK	24.00	LF
1725	24098EC	PPC I-BEAM TYPE HN 66-49	1,958.00	LF
1730	21532ED	RAIL SYSTEM TYPE III	986.00	LF
1735	02231	STRUCTURE GRANULAR BACKFILL	276.00	CUYD
1740	08001	STRUCTURE EXCAVATION-COMMON	139.00	CUYD

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1745	08002	STRUCTURE EXCAV-SOLID ROCK	152.00	CUYD
1750	21084ED	SOUNDINGS	34.00	LF
1755	20746ED	ROCK CORINGS	44.00	LF
1760	22861EN	HIGH STRENGTH GEOTEXTILE FABRIC TY V	1,706.00	SQYD
1765	24595EN	ELASTICIZED EPS - (10" THICKNESS)	136.00	SQYD
1770	08033	TEST PILES	83.00	LF
1775	08100	CONCRETE-CLASS A	309.00	CUYD
1780	08104	CONCRETE-CLASS AA	490.00	CUYD
1785	08150	STEEL REINFORCEMENT	67,171.00	LB
1790	08151	STEEL REINFORCEMENT-EPOXY COATED	156,879.00	LB
1795	02998	MASONRY COATING	2,247.00	SQYD
1800	03299	ARMORED EDGE FOR CONCRETE	38.00	LF
1805	08019	CYCLOPEAN STONE RIP RAP	609.00	TON
1810	08020	CRUSHED AGGREGATE SLOPE PROT	318.00	TON
1815	08033	TEST PILES	78.00	LF
1820	08051	PILES-STEEL HP14X89	703.00	LF
1825	08095	PILE POINTS-14 IN	10.00	EACH
1830	24582EN	PRECAST PC I BEAM-HN 72-49	1,314.00	LF
1835	21532ED	RAIL SYSTEM TYPE III	663.00	LF
1840	20745ED	ROCK SOUNDINGS	77.00	LF
1845	20746ED	ROCK CORINGS	156.00	LF
1850	22885EN	DRILLED SHAFT-72 IN-ROCK	88.00	LF
1855	24001EC	DRILLED SHAFT-78 IN COMMON	66.00	LF
1860	22861EN	HIGH STRENGTH GEOTEXTILE FABRIC TY V	829.00	SQYD
1865	24595EN	ELASTICIZED EPS - (10" THICKNESS)	46.00	SQYD
1870	02231	STRUCTURE GRANULAR BACKFILL	232.00	CUYD
1875	02568	MOBILIZATION	1.00	LS
1880	02569	DEMOBILIZATION	1.00	LS
1885	02742	TRAINEE PAYMENT REIMBURSEMENT - (1 GROUP 2, 3 OR 4 OPERATOR)	1,400.00	HOUR

CONTRACT ID: 191044 **121GR19D044-STP** **DE09500301944**

LONDON-BOONEVILLE ROAD(KY-30) IMPROVE KY-30 FROM KY-847 IN OWSLEY COUNTY TO JACKSON COUNTY LINE. GRADE & DRAIN WITH ASPHALT SURFACE, A DISTANCE OF 4 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0005	00003	CRUSHED STONE BASE	46,289.00	TON
0010	00008	CEMENT STABILIZED ROADBED	101,289.00	SQYD
0015	00020	TRAFFIC BOUND BASE	750.00	TON
0020	00100	ASPHALT SEAL AGGREGATE	342.00	TON
0025	00103	ASPHALT SEAL COAT	42.00	TON
0030	00212	CL2 ASPH BASE 1.00D PG64-22	8,510.00	TON
0035	00221	CL2 ASPH BASE 0.75D PG64-22	15,711.00	TON
0040	00301	CL2 ASPH SURF 0.38D PG64-22	7,032.00	TON
0045	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	77.00	TON
0050	00358	ASPHALT CURING SEAL	101.00	TON

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0055	02542	CEMENT	1,932.00	TON
0060	02702	SAND FOR BLOTTER	254.00	TON
0065	20071EC	JOINT ADHESIVE	59,885.00	LF
0070	24781EC	INTELLIGENT COMPACTION FOR ASPHALT	31,253.00	TON
0075	24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	1,734,882.00	SF
0080	24986EC	HMA ELECTRONIC DELIVERY MGMT SYSTEM - OWSLEY	1.00	L S
0085	00190	LEVELING & WEDGING PG64-22	200.00	TON
0090	00021	DRAINAGE BLANKET-EMBANKMENT	2,200.00	CUYD
0095	00078	CRUSHED AGGREGATE SIZE NO 2	22,451.00	TON
0100	01000	PERFORATED PIPE-4 IN	2,623.00	LF
0105	01010	NON-PERFORATED PIPE-4 IN	781.00	LF
0110	01020	PERF PIPE HEADWALL TY 1-4 IN	19.00	EACH
0115	01024	PERF PIPE HEADWALL TY 2-4 IN	8.00	EACH
0120	01028	PERF PIPE HEADWALL TY 3-4 IN	17.00	EACH
0125	01032	PERF PIPE HEADWALL TY 4-4 IN	3.00	EACH
0130	01310	REMOVE PIPE	72.00	LF
0135	01891	ISLAND HEADER CURB TYPE 2	50.00	LF
0140	01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	262.00	EACH
0145	01990	DELINEATOR FOR BARRIER WALL-B/W	5.00	EACH
0150	02014	BARRICADE-TYPE III	16.00	EACH
0155	02091	REMOVE PAVEMENT	1,727.00	SQYD
0160	02159	TEMP DITCH	9,018.00	LF
0165	02160	CLEAN TEMP DITCH	4,509.00	LF
0170	02200	ROADWAY EXCAVATION	1,854,894.00	CUYD
0175	02242	WATER	7.00	MGAL
0180	02351	GUARDRAIL-STEEL W BEAM-S FACE	20,575.00	LF
0185	02360	GUARDRAIL TERMINAL SECTION NO 1	26.00	EACH
0190	02363	GUARDRAIL CONNECTOR TO BRIDGE END TY A	2.00	EACH
0195	02371	GUARDRAIL END TREATMENT TYPE 7	1.00	EACH
0200	02383	REMOVE & RESET GUARDRAIL	475.00	LF
0205	02391	GUARDRAIL END TREATMENT TYPE 4A	36.00	EACH
0210	02402	REMOVE STONE MASONRY	10.00	CUYD
0215	02429	RIGHT-OF-WAY MONUMENT TYPE 1	254.00	EACH
0220	02432	WITNESS POST	254.00	EACH
0225	02475	PLUG WATER WELL	2.00	EACH
0230	02488	CHANNEL LINING CLASS IV	21,002.00	CUYD
0235	02545	CLEARING AND GRUBBING - 174 ACRES-OWSLEY	1.00	LS
0240	02555	CONCRETE-CLASS B	358.00	CUYD
0245	02562	TEMPORARY SIGNS	2,100.00	SQFT
0250	02585	EDGE KEY	303.00	LF
0255	02596	FABRIC-GEOTEXTILE TYPE I - (FOR CONST. ENTR.)	360.00	SQYD
0260	02599	FABRIC-GEOTEXTILE TYPE IV - (GEOTECH NOTE 14, 16 & 21)	16,600.00	SQYD
0265	02600	FABRIC GEOTEXTILE TY IV FOR PIPE	13,024.00	SQYD
0270	02650	MAINTAIN & CONTROL TRAFFIC - OWSLEY	1.00	LS
0275	02671	PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH
0280	02676	MOBILIZATION FOR MILL & TEXT - OWSLEY	1.00	LS
0285	02677	ASPHALT PAVE MILLING & TEXTURING	114.00	TON
0290	02696	SHOULDER RUMBLE STRIPS	36,079.00	LF
0295	02701	TEMP SILT FENCE	9,018.00	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0300	02703	SILT TRAP TYPE A	164.00	EACH
0305	02704	SILT TRAP TYPE B	164.00	EACH
0310	02705	SILT TRAP TYPE C	164.00	EACH
0315	02706	CLEAN SILT TRAP TYPE A	164.00	EACH
0320	02707	CLEAN SILT TRAP TYPE B	164.00	EACH
0325	02708	CLEAN SILT TRAP TYPE C	164.00	EACH
0330	02726	STAKING - OWSLEY	1.00	LS
0335	03262	CLEAN PIPE STRUCTURE	1.00	EACH
0340	05950	EROSION CONTROL BLANKET	279,709.00	SQYD
0345	05952	TEMP MULCH	526,555.00	SQYD
0350	05953	TEMP SEEDING AND PROTECTION	394,917.00	SQYD
0355	05963	INITIAL FERTILIZER	49.00	TON
0360	05964	MAINTENANCE FERTILIZER	43.00	TON
0365	05985	SEEDING AND PROTECTION	571,813.00	SQYD
0370	05992	AGRICULTURAL LIMESTONE	526.00	TON
0375	06406	SBM ALUM SHEET SIGNS .080 IN	336.00	SQFT
0380	06407	SBM ALUM SHEET SIGNS .125 IN	32.00	SQFT
0385	06410	STEEL POST TYPE 1	783.00	LF
0390	06490	CLASS A CONCRETE FOR SIGNS	.46	CUYD
0395	06510	PAVE STRIPING-TEMP PAINT-4 IN	41,842.00	LF
0400	06511	PAVE STRIPING-TEMP PAINT-6 IN	71,520.00	LF
0405	06514	PAVE STRIPING-PERM PAINT-4 IN	20,921.00	LF
0410	06568	PAVE MARKING-THERMO STOP BAR-24IN	148.00	LF
0415	06569	PAVE MARKING-THERMO CROSS-HATCH	885.00	SQFT
0420	06574	PAVE MARKING-THERMO CURV ARROW	22.00	EACH
0425	16034	G SERVICE LONG SIDE 3/4 INCH	1.00	EACH
0430	10020NS	FUEL ADJUSTMENT	403,989.00	DOLL
0435	10030NS	ASPHALT ADJUSTMENT	122,187.00	DOLL
0440	22664EN	WATER BLASTING EXISTING STRIPE	5,000.00	LF
0445	23821EC	CENTERLINE RUMBLE STRIPS-12 IN	18,145.00	LF
0450	24489EC	INLAID PAVEMENT MARKER	50.00	EACH
0455	24489EC	INLAID PAVEMENT MARKER	308.00	EACH
0460	24631EC	BARCODE SIGN INVENTORY	80.00	EACH
0465	24814EC	PIPELINE INSPECTION	3,765.00	LF
0470	24845EC	UTILITY COORDINATION	1.00	LS
0475	24995EC	PAVE STRIPING-SPRAY THERMO-6 IN W	38,057.00	LF
0480	24996EC	PAVE STRIPING-SPRAY THERMO-6 IN Y	33,463.00	LF
0485	00462	CULVERT PIPE-18 IN	377.00	LF
0490	00464	CULVERT PIPE-24 IN	935.00	LF
0495	00466	CULVERT PIPE-30 IN	523.00	LF
0500	00468	CULVERT PIPE-36 IN	990.00	LF
0505	00469	CULVERT PIPE-42 IN	766.00	LF
0510	00470	CULVERT PIPE-48 IN	174.00	LF
0515	00440	ENTRANCE PIPE-15 IN	151.00	LF
0520	00441	ENTRANCE PIPE-18 IN	155.00	LF
0525	01511	DROP BOX INLET TYPE 5D	1.00	EACH
0530	01450	S & F BOX INLET-OUTLET-18 IN	2.00	EACH
0535	01451	S & F BOX INLET-OUTLET-24 IN	1.00	EACH
0540	01452	S & F BOX INLET-OUTLET-30 IN	1.00	EACH
0545	01202	PIPE CULVERT HEADWALL-15 IN	8.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0550	01204	PIPE CULVERT HEADWALL-18 IN	9.00	EACH
0555	01208	PIPE CULVERT HEADWALL-24 IN	11.00	EACH
0560	01210	PIPE CULVERT HEADWALL-30 IN	7.00	EACH
0565	01212	PIPE CULVERT HEADWALL-36 IN	8.00	EACH
0570	01214	PIPE CULVERT HEADWALL-42 IN	4.00	EACH
0575	01216	PIPE CULVERT HEADWALL-48 IN	2.00	EACH
0580	08100	CONCRETE-CLASS A	32.00	CUYD
0585	08104	CONCRETE-CLASS AA	180.00	CUYD
0590	08150	STEEL REINFORCEMENT	7,594.00	LB
0595	08151	STEEL REINFORCEMENT-EPOXY COATED	53,892.00	LB
0600	02998	MASONRY COATING	586.00	SQYD
0605	03299	ARMORED EDGE FOR CONCRETE	38.00	LF
0610	08020	CRUSHED AGGREGATE SLOPE PROT	221.00	TON
0615	08033	TEST PILES	27.00	LF
0620	08051	PILES-STEEL HP14X89	245.00	LF
0625	08095	PILE POINTS-14 IN	10.00	EACH
0630	24582EN	PRECAST PC I BEAM-HN 72-49	446.00	LF
0635	21532ED	RAIL SYSTEM TYPE III	225.00	LF
0640	22861EN	HIGH STRENGTH GEOTEXTILE FABRIC TY V	955.00	SQYD
0645	24595EN	ELASTICIZED EPS - (10" THICKNESS)	51.00	SQYD
0650	02231	STRUCTURE GRANULAR BACKFILL	261.00	CUYD
0655	08100	CONCRETE-CLASS A	673.80	CUYD
0660	08150	STEEL REINFORCEMENT	71,765.00	LB
0665	08003	FOUNDATION PREPARATION	1.00	LS
0670	08002	STRUCTURE EXCAV-SOLID ROCK	150.80	CUYD
0675	08100	CONCRETE-CLASS A	1,263.40	CUYD
0680	08150	STEEL REINFORCEMENT	103,258.00	LB
0685	08003	FOUNDATION PREPARATION	1.00	LS
0690	08002	STRUCTURE EXCAV-SOLID ROCK	888.00	CUYD
0695	08100	CONCRETE-CLASS A	428.00	CUYD
0700	08150	STEEL REINFORCEMENT	50,009.00	LB
0705	08003	FOUNDATION PREPARATION	1.00	LS
0710	14059	W PIPE PVC 06 INCH	955.00	LF
0715	14058	W PIPE PVC 04 INCH	2,420.00	LF
0720	14056	W PIPE PVC 02 INCH	2,150.00	LF
0725	14004	W DIRECTIONAL BORE	180.00	LF
0730	14014	W ENCASEMENT STEEL OPEN CUT RANGE 3	585.00	LF
0735	14022	W FLUSH HYDRANT ASSEMBLY - TYPE 1	1.00	EACH
0740	14022	W FLUSH HYDRANT ASSEMBLY - TYPE 3	3.00	EACH
0745	14105	W VALVE 06 INCH	3.00	EACH
0750	14104	W VALVE 04 INCH	5.00	EACH
0755	14102	W VALVE 02 INCH	1.00	EACH
0760	14094	W TIE-IN 06 INCH	4.00	EACH
0765	14093	W TIE-IN 04 INCH	5.00	EACH
0770	14091	W TIE-IN 02 INCH	1.00	EACH
0775	02568	MOBILIZATION	1.00	LS
0780	02569	DEMOBILIZATION	1.00	LS
0785	02742	TRAINEE PAYMENT REIMBURSEMENT - (1 GROUP 2,3 OR 4 OPERATOR)	1,400.00	HOUR

GUARDRAIL DELIVERY VERIFICATION SHEET

Contract Id: _____ **Contractor: _____**

Section Engineer: _____ **District & County: _____**

DESCRIPTION	UNIT	QTY LEAVING PROJECT	QTY RECEIVED@BB YARD
GUARDRAIL (Includes End treatments & crash cushions)	LF	_____	_____
STEEL POSTS	EACH	_____	_____
STEEL BLOCKS	EACH	_____	_____
WOOD OFFSET BLOCKS	EACH	_____	_____
BACK UP PLATES	EACH	_____	_____
CRASH CUSHION	EACH	_____	_____
NUTS, BOLTS, WASHERS	BAG/BCKT	_____	_____
DAMAGED RAIL TO MAINT. FACILITY	LF	_____	_____
DAMAGED POSTS TO MAINT. FACILITY	EACH	_____	_____

****Required Signatures before Leaving Project Site***

Printed Section Engineer's Representative_____ & Date_____

Signature Section Engineer's Representative_____& Date_____

Printed Contractor's Representative_____& Date_____

Signature Contractor's Representative_____& Date_____

Required Signatures after Arrival at Bailey Bridge Yard (All material on truck must be counted & the quantity received column completed before signatures)

Printed Bailey Bridge Yard Representative_____ & Date_____

Signature Bailey Bridge Yard Representative_____& Date_____

Printed Contractor's Representative_____& Date_____

Signature Contractor's Representative_____& Date_____

**Payment for the bid item remove guardrail will be based upon the quantities shown in the Bailey Bridge Yard received column. Payment will not be made for guardrail removal until the guardrail verification sheets are electronically submitted to the Section Engineer by the Bailey Bridge Yard Representative.

Completed Form Submitted to Section Engineer Date: _____ By: _____

10-279.61 / 11-278.30
SPECIAL NOTE FOR PRE-BID CONFERENCE

The Department will conduct a Pre-Bid Conference of the subject project on **Thursday, August 15, 2019 at 10:00 AM** at;

Kentucky Department of Highways
District 10
473 Highway 15 South
Jackson, KY 41339
Phone: (606) 666-8841

Any company that is interested in bidding on the subject project or being part of a joint venture must be represented at the conference by at least **one person of sufficient authority to bind the company**. No individual can represent more than one company. At the conference a roster will be taken of the representatives present. **Only companies represented at the conference will be eligible to have their bids opened at the date of letting.**

The purpose of the conference is to familiarize all prospective bidders with the contract requirements of the contract.

Department of Highways officials present at the conference will answer questions concerning the projects.

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

11C

SPECIAL NOTE FOR DRILLED SHAFTS

1.0 DESCRIPTION. Furnish all equipment, materials and labor necessary for constructing reinforced concrete drilled shafts in cylindrically excavated holes according to the details shown on the plans or as the Engineer directs. Construct the shaft to the lines and dimensions shown on the plans, or as the Engineer directs. Section references herein are to the Department's 2019 Standard Specifications for Road and Bridge Construction.

2.0 MATERIALS.

2.1 Concrete. Use Class A Modified concrete unless otherwise shown on the plans. The slump at the time of placement shall be 6.5 to 9.5 inches, the coarse aggregate shall be size 67, 68, 78, 8 or 9M, and the water/cementitious material ratio shall not exceed 0.45. Include water reducing and retarding admixtures. Type F high range water reducers used in combination with retarding admixtures or Type G high range water reducers fully meeting trial batch requirements are permitted and Class F fly ash is permitted in conformance with Section 601. Design the mix such that the concrete slump exceeds 4 inches at 4 hours after batching. If the estimated concrete transport, plus time to complete placement, exceeds 4 hours, design the concrete to have a slump that exceeds 4 inches or more for the greater time after batching and demonstrate that the slump requirement can be achieved after the extended time period using a trial batch.

Perform trial batches prior to beginning drilled shaft construction in order to demonstrate the adequacy of the proposed concrete mix. Demonstrate that the mix to be used will meet the requirements for temperature, slump, air content, water/cementitious material ratio, and compressive strength. Use the ingredients, proportions and equipment (including batching, mixing, and delivery) to be used on the project. Make at least 2 independent consecutive trial batches of 3 cubic yards each using the same mix proportions and meeting all specification requirements for mix design approval. Submit a report containing these results for slump, air content, water/cement ratio, temperature, and compressive strength and mix proportions for each trial batch to the Engineer for review and approval. Failure to demonstrate the adequacy of the concrete mix, methods, or equipment to the Engineer is cause for the Engineer to require appropriate alterations in concrete mix, equipment, and/or method by the Contractor to eliminate unsatisfactory results. Perform additional trial batches required to demonstrate the adequacy of the concrete mix, method, or equipment.

2.2 Steel Reinforcement. Provide Grade 60 deformed bars conforming to Section 811 of the Standard Specifications. Rail steel is permitted for straight bars only. Place according to Section 602 of the Standard Specifications, this Special Note, and the plans. Use non-corrosive centering devices and feet to maintain the specified reinforcement clearances.

2.3 Casings. Provide casing meeting the requirements of ASTM A 252 Grade 2 or better unless otherwise specified. Ensure casing is smooth, clean, watertight, true and straight, and of ample strength to withstand handling, installation, and extraction stresses and the pressure of both concrete and the surrounding earth materials. Ensure the outside diameter of casing is not less than the specified diameter of shaft.

Use only continuous casings. Cut off the casing at the prescribed elevation and trim to within tolerances prior to acceptance. Extend casing into bedrock a sufficient distance to stabilize the shaft excavation against collapse, excessive deformation, and/or flow of water if required and/or shown on the plans.

Install from the work platform continuous casing meeting the design thickness requirements, but not less than 3/8 inch, to the elevations shown on the plans. When drilled

shafts are located in open water areas, extend casings above the water elevation to the plan tip elevation to protect the shaft concrete from water action during concrete placement and curing. All casing is permanent unless temporary casing is specified in the contract drawings or documents. Permanent casing is incidental to the applicable drilled shaft unit bid price unless noted otherwise in the contract. Temporary casing may be required for drilled shafts not socketed into bedrock. If temporary surface casings are used, extend each casing up to the work platform. Remove all temporary surface casing prior to final acceptance unless otherwise permitted by the Central Office Construction Engineer.

Ensure casing splices have full penetration butt welds conforming to the current edition of AWS D1.1 with no exterior or interior splice plates and produce true and straight casing.

2.4 Slurry. When slurry is to be used for installation of the Drilled Shaft, submit a detailed plan for its use and disposal. The plan should include, but not be limited to the following:

1) Material properties
2) Mixing requirements and procedures
3) Testing requirements
4) Placement procedures
5) Disposal techniques

Obtain the Central Office Division of Construction's approval for the slurry use and disposal plan before installing drilled shafts.

2.5 Tremies. Provide tremies of sufficient length, weight, and diameter to discharge concrete at the shaft base elevation. Ensure the tremie diameter is least 6 times the maximum size coarse aggregate to be used in the concrete mix and no less than 10 inches. Provide adequate wall thickness to prevent crimping or sharp bends that restrict concrete placement. Support tremies used for depositing concrete in a dry drilled shaft excavation so that the free fall of the concrete does not cause the shaft excavation to cave or slough. Maintain a clean and smooth tremie surface to permit both flow of concrete and unimpeded withdrawal during concrete placement. Do not allow any aluminum parts to contact the concrete. Construct tremies used to deposit concrete for wet excavations so that they are watertight and will readily discharge concrete.

2.6 Concrete Pumps. Provide pump lines with a minimum diameter of 5 inches and watertight joints.

2.7 Drop Chutes. Do not use aluminum drop chutes.

3.0 CONSTRUCTION.

3.1 Preconstruction.

3.1.1 Prequalification. The Department will require prequalification by the Division of Construction Procurement before accepting a bid for the construction of Drilled Shafts.

3.1.2 Pre-Bid Inspection. Inspect both the project site and all subsurface information, including any soil or rock samples, prior to submitting a bid. Contact the Geotechnical Branch (502-564-2374) to schedule a viewing of the subsurface information. Failure to inspect the project site and view the

subsurface information will result in the forfeiture of the right to file a claim based on site conditions and may result in disqualification from the project.

3.1.3 Drilled Shaft Installation Plan. Upon request, the Department will review a Drilled Shaft Installation Plan. Submit the plan no later than 45 calendar days prior to constructing drilled shafts. Items covered in this plan should include, but not be limited to the following:

1) Name and experience record of jobsite drilled shaft superintendent and foremen in charge of drilled shaft operations for each shift.
2) List and size of proposed equipment including cranes, drills, augers, bailing buckets, final cleaning equipment, de-sanding equipment, slurry pumps, core sampling equipment, tremies or concrete pumps, casings, etc.
3) Details of overall construction operation sequence and the sequence of shaft construction in the bents or groups.
4) Details of shaft excavation methods including methods to over-ream or roughen shaft walls, if necessary.
5) Details of slurry when the use of slurry is anticipated. Include methods to mix, circulate, and de-sand the proposed slurry. Provide details of proposed testing, test methods, sampling methods, and test equipment.
6) Details of proposed methods to clean shaft and inside of casing after initial excavation.
7) Details of reinforcement handling, lifting, and placement including support and method to center in shaft. Also include rebar cage support during concrete placement and temporary casing removal.
8) Details of concrete placement including procedures for concrete tremie or pump. Include initial placement, raising during placement, and overfilling of the shaft to expel contaminated concrete.
9) Required submittals including shop drawings and concrete design mixes.
10) Other information shown in the plans or requested by the Engineer.
11) Special considerations for wet construction.
12) Details of environmental control procedures to protect the environment from discharge of excavation spoil, slurry (natural and mineral), and concrete over-pour.

The Division of Construction will review the submitted procedure and provide comments and recommendations. The Contractor is responsible for satisfactory construction and ultimate performance of the Drilled Shaft.

3.2 General Construction. Construct drilled shafts as indicated in the plans or described in this Special Note by either the dry or wet method. When the plans describe a particular method of construction, use this method unless the Engineer permits otherwise. When the plans do not describe a particular method, propose a method on the basis of its suitability to the site conditions. Approval of this proposed method is contingent upon the satisfactory results of the technique shaft.

The construction of the first drilled shaft or technique shaft will be used to determine if the methods and equipment used by the contractor are sufficient to produce a completed shaft meeting the requirements of the plans and specifications. Ability to control dimensions and alignment of excavations within tolerances; to seal the casing into impervious materials; to prevent caving or deterioration of subsurface materials by the use of slurry or other means; to

properly clean the completed shaft excavation; to construct excavations in open water areas when required by the plans; to establish methods for belling or over-reaming when required by the plans; to determine the elevation of ground water; to satisfactorily handle, lift, place, and support the reinforcement cage; to satisfactorily place concrete meeting the specifications within the prescribed time frame; and to satisfactorily execute any other necessary construction operations will be evaluated during construction of the first shaft(s). Revise the methods and equipment as necessary at any time during the construction of the first shaft when unable to satisfactorily carry out any of the necessary operations described above or unable to control the dimensions and alignment of the shaft excavation within tolerances. Accurately locate technique so they may be used in the finished structure unless directed otherwise in the contract document or by the Engineer.

If at any time the Contractor fails to satisfactorily demonstrate, to the satisfaction of the Engineer, the adequacy of methods or equipment and alterations are required, additional technique shafts will be required at no additional cost to the Department and with no extension of contract time. Additional technique shafts shall be located as near as possible to the proposed production shafts but in a location as not to interfere with other construction activities. Once approval has been given to construct production shafts, no changes will be permitted in the methods or equipment used to construct the satisfactory shaft without written approval of the Engineer.

Do not make a claim against the Department for costs of construction delays, or any materials, labor, or equipment that may be necessary due to the Contractor's failure to furnish drilled shafts of a length sufficient to obtain the required bearing values, or for variations in length due to subsurface conditions that may be encountered. Soundings, boring logs, soil profiles, or other subsurface data included in the Contract documents are used by the Department for design and making preliminary estimates of quantities and should be used only at the risk of the Contractor for determining equipment, materials, or labor necessary for drilling shafts as required by the contract.

When necessary, set temporary removable surface casing. Use surface casing of sufficient length to prevent caving of the surface soils and to aid in maintaining shaft position and alignment. Pre-drilling with slurry and/or over-reaming to the outside diameter of the casing may be required to install the surface casing at some sites.

Provide equipment capable of constructing shafts to the deepest shaft depth shown in the plans plus 15 feet, 20 percent greater than the longest shaft (measured from the ground or water surface to the tip of the shaft), or 3 times the shaft diameter, whichever is greater. Blasting excavation methods are not permitted.

Use permanent casing unless otherwise noted in the Contract. Place casing as shown on the plans before beginning excavation. If full penetration cannot be attained, the Engineer may direct that excavation through the casing be accomplished and the casing advanced until reaching the plan tip elevation. In some cases, over-reaming to the outside diameter of the casing may be required before placing the casing. Cut off the casing at the prescribed elevation and leave the remainder of the casing in place. Do not use vibratory hammers for casing installation within 50 feet of shafts that have been completed less than 24 hours.

3.2.1 Dry Construction Method. Use the dry construction method only at sites where the ground water table and soil conditions (generally stiff to hard clays or rock above the water table) make it feasible to construct the shaft in a relatively dry excavation and where the sides and bottom of the shaft are stable and may be visually inspected by the Engineer prior to placing the concrete. The dry construction method consists of drilling the shaft excavation, removing accumulated seepage water and loose material from the excavation, and placing the shaft concrete in a relatively dry excavation.

3.2.2 Wet Construction Method. Use the wet construction method at all sites where it is impractical to excavate by the dry method. The wet construction method consists of drilling the shaft excavation below the water table, keeping the shaft filled with water (including natural slurry formed during the drilling process) or slurry as defined in part 2.4 of this Special Note, desanding and cleaning the slurry as required, final cleaning of the excavation by means of a bailing bucket, air lift, submersible pump or other approved devices and placing the shaft concrete (with a tremie or concrete pump beginning at the shaft bottom) which displaces the water or slurry as concrete is placed.

Where drilled shafts are located in open water areas, construct the shafts by the wet method using casings extending from above water elevation to the plan casing tip elevation to protect the shaft concrete from water action during placement and curing. Install the casing in a manner that will produce a positive seal at the bottom of the casing.

3.3 Slurry. When the Contractor elects to use slurry, adjust construction operations so that the slurry is in contact with the bottom 5 feet of the shaft for less than 4 hours unless the Engineer approves otherwise. If the 4-hour limit is exceeded, over-ream the bottom 5 feet of shaft.

3.4 Cleaning. Over-reaming, cleaning, or wire brushing the sidewalls of the shaft excavation and permanent casings may be necessary to remove the depth of softening or to remove excessive slurry cake buildup as indicated by sidewall samples or other test methods employed by the Engineer. Over-ream around the perimeter of the excavation a minimum depth of 1/2 inch and maximum depth of 3 inches.

3.5 Subsurface Exploration. Take subsurface exploration borings when shown on the plans or as the Engineer directs to determine the character of the material that the shaft extends through and the material directly below the shaft excavation. Complete subsurface exploration borings prior to beginning excavation for any drilled shaft in a group. Unless directed otherwise, extend subsurface exploration borings a minimum depth of 3 shaft diameters but not less than 10 feet below the bottom of the anticipated tip of drilled shaft excavation as shown on the plans. For subsurface exploration borings where soil sampling is required use thin-wall tube samples and perform standard penetration tests according to the Department’s current Geotechnical Manual. When shafts extend into bedrock, soil samples are not required unless otherwise specified. Perform rock core drilling according to the Department’s Geotechnical Manual. When the Engineer directs, perform additional subsurface exploration borings prior to drilled shaft construction. Measure soil samples and/or rock cores and visually identify and describe them on the subsurface log according to the Department’s current Geotechnical Manual. Subsurface exploration borings must be performed by contractors/consultants prequalified by the Department’s Division of Professional Services for Geotechnical Drilling Services at the time that field work begins.

The Engineer or geotechnical branch representative may be on-site during the subsurface exploration process to evaluate the soil and/or rock core samples. The Engineer or geotechnical branch representative will determine the need to extend the borings to depths greater than the depths previously specified. Handle, label, identify, and store soil and/or rock samples according to the Department's current Geotechnical Manual and deliver them with the subsurface logs to the geotechnical branch’s rock core lab in Frankfort within 24-hours of completing the borings, unless directed otherwise.

The Engineer will inspect the soil samples and/or cores and determine the final depth of required excavation (final drilled shaft tip elevation) based on evaluation of the material's suitability. The Engineer will establish the final tip elevations for shaft locations, other than

those for which subsurface exploration borings have been performed, based on the results of the subsurface exploration. Within 15 calendar days after completion of the subsurface exploration borings, the Engineer will notify the contractor of the final tip elevations for shaft locations.

3.6 Excavations. The plans indicate the expected depths, the top of shaft elevations, and the estimated bottom of shaft elevations between which the drilled shaft are to be constructed. Drilled shafts may be extended deeper when the Engineer determines that the material encountered while drilling the shaft excavation is unsuitable and/or is not the same as anticipated in the design of the drilled shaft. Drilled shafts may be shortened when the Engineer determines the material encountered is better than that anticipated.

Begin drilled shaft excavation the excavation, excavation inspection, reinforcement placement, and concrete placement can be completed as one continuous operation. Do not construct new shafts within 24 hours adjacent to recently completed shafts if the center-to-center spacing is less than 3 shaft diameters.

Dispose of excavated material removed from the shaft according to the Standard Specifications or the contract documents.

Do not allow workmen to enter the shaft excavation for any reason unless both a suitable casing has been installed and adequate safety equipment and procedures have been provided to the workmen entering the excavation. Recommended Procedures for the Entry of Drilled Shaft Foundation Excavations, prepared by ADSC: The International Association of Foundation Drilling provides guideline recommendations for down-hole entry of drilled excavations.

3.7 Obstructions. Remove subsurface obstructions at drilled shaft locations. Such obstructions may include man-made materials such as old concrete foundations or natural materials such as boulders. Blasting is not permitted.

3.8 Inspections of Excavations. Provide equipment for checking the dimensions and alignment of each shaft excavation. Determine the dimensions and alignment of the shaft excavation under the observation and direction of the Engineer. Provide equipment necessary to verify shaft cleanliness for the method of inspection selected by the Engineer.

Measure final shaft depths with a weighted tape or other approved methods after final cleaning. Ensure the base of each shaft has less than ½ inch of sediment at the time of concrete placement. For dry excavations, do not allow the depth of water to exceed 3 inches for tremie or pump methods of concrete placement. Verify shaft cleanliness to the Engineer using direct visual inspection or other method the Engineers determines acceptable. Video camera or underwater inspection procedures may be used if specified in the plans. Inspect the side surfaces of rock sockets to ensure they are rough and of such condition to ensure bond between the shaft concrete and the rock. Calipers, bent rods, or other devices may be used to inspect the diameter and roughness of rock sockets. When the Engineer directs, mechanically roughen surfaces found to be smooth.

3.9 Reinforcing Steel Cage Fabrication and Placement. Assemble the reinforcing steel cage, consisting of longitudinal bars, ties, spirals, cage stiffener bars, spacers, centering devices, and other necessary appurtenances and place as a prefabricated unit immediately after the shaft excavation is inspected and accepted, and just prior to concrete placement.

Tie the reinforcing steel with 100 percent double-wire ties and provide support so that it will remain within allowable tolerances for position. Locate splices as shown on the plans. Splice no more than 50 percent of the longitudinal reinforcing within 2-lap splice lengths of any location or within 3 feet of the splice location if approved mechanical connectors are used. All splices are to be in accordance with plan details. Use bands, temporary cross ties,

etc. as required to provide a reinforcement cage of sufficient rigidity to prevent racking, permanent deformations, etc. during installation.

Use concrete centering devices or other approved non-corrosive centering devices at sufficient intervals along the length of the reinforcement cage to ensure concentric spacing for the entire cage length. As a minimum, provide a set of non-corrosive centering devices at intervals not exceeding 5 feet throughout the length of the shaft. When the size of the longitudinal reinforcement exceeds one inch in diameter the minimum spacing may be increased to 10 feet. As a minimum, provide a set of centering devices within 2 feet of the top and 2 feet of the bottom of the shaft. In addition provide one set of centering devices 2 feet above and 2 feet below each change in shaft diameter. Provide feet (bottom supports) at the bottom of the shaft on vertical bars. As a minimum, provide non-corrosive centering devices at 60 degree intervals around the circumference of the shaft to maintain the required reinforcement clearances. Ensure the centering devices maintain the specified annular clearance between the outside of the reinforcing cage and the side of the excavated hole or casing.

Concrete centering devices and feet will be constructed of concrete equal in quality and durability to the concrete specified for the shaft. Use epoxy coated centering devices fabricated from reinforcing steel. Use feet (bottom supports) of adequate size and number to assure the rebar cage is the proper distance above the bottom as determined by part 3.11 3) of this Special Note. The feet are not intended to support the weight of the cage. In the event that the shaft has been excavated below the anticipated tip elevation, extend the reinforcing cage at the tip (low) end by lap splices, mechanical connectors, or welded splices conforming to the Standard Specifications. In this instance, splices need not be staggered and 100 percent of the reinforcing bars may be spliced at a given location. The bottom 12 inches of the shaft may not be reinforced when below plan tip elevation.

During concrete placement, support the reinforcing cage at or near the top of shaft such that the concrete feet are positioned approximately one inch above the bottom of shaft excavation. Not sooner than 24 hours after the completion of concrete placement, remove temporary supports. Provide the needed equipment, including extra cranes if necessary, to provide this cage support.

Prior to placing the reinforcement cage, demonstrate to the satisfaction of the Engineer that the fabrication and handling methods to be used will result in a reinforcing cage placed in the proper position, with the proper clearances, and without permanent bending, squashing, or racking of the reinforcement cage. During this demonstration bring the cage to an upright position, lower into a shaft excavation, and support as if for concrete placement.

Check the elevation of the top of the reinforcing cage before and after the concrete is placed. If the reinforcing cage is not maintained within the specified tolerances, correct to the satisfaction of the Engineer. Do not construct additional shafts until the contractor has modified his reinforcing cage support to obtain the required tolerances.

3.10 Concrete Placement. Place concrete according to the applicable portions of the Standard Specifications and with the requirements set forth herein. Do not apply the provisions of the Special Note 6U for Structural Mass Concrete.

Place concrete as soon as practical after reinforcing steel placement but no later than 4 hours after completion of the shaft excavation. Place concrete continuously from the bottom to above the top elevation of the shaft. For shafts that extend above ground or water surface, place concrete continuously after the shaft is full until good quality concrete is evident at the top of the shaft. Form any portion of the shaft above ground with a removable form or other approved method to the dimensions shown on the plans.

For shafts constructed in the wet with the top of the shaft below the water surface and below top of casing, place concrete to approximately one shaft diameter but no less than 2 feet above the top of shaft elevation. Remove contaminated concrete and deleterious material, as

determined by the Engineer, accumulated above the top of shaft elevation immediately after completing concrete placement. Deleterious material and contaminated concrete may be airlifted under a head of water or slurry provided that the head is maintained at or near the exterior water surface elevation. Carefully remove any concrete remaining above plan top of shaft after curing and excess casing removal.

Place concrete either by free fall, through a tremie, or concrete pump. Use the free fall placement method in dry holes only. The maximum height of free fall placement is 20 feet. Do not allow concrete placed by free fall to contact either the reinforcing cage or hole sidewall. Drop chutes may be used to direct concrete to the base during free fall placement.

Place concrete in the shaft in one continuous operation. Maintain a minimum slump of 4 inches or more throughout the placement for 4 hours after batching. Adjust approved admixtures in the concrete mix for the conditions encountered on the job so that the concrete remains in a workable plastic state throughout the placement. Perform slump loss tests to demonstrate that the concrete will maintain a 4-inch or greater slump for a period of time equal to the estimated transport plus the 2-hour placement time, but not less than 4 hours.

When the Engineer determines the concrete placement methods and/or equipment during construction of any technique and/or production shafts to be inadequate, make appropriate alterations to eliminate unsatisfactory results.

Drilled shafts not meeting the concrete placement requirements of this Special Note or contract plans are unacceptable. Correct all unacceptable completed shafts to the satisfaction of the Engineer.

3.10.1 Tremie Placement. Tremies may be used for concrete placement in either wet or dry holes. Extend the tremie to the shaft base elevation before starting underwater placement. Valves, bottom plates, or plugs may be used only if concrete discharge can begin approximately 2 inches above the excavation bottom. Remove plugs from the excavation unless otherwise approved by the Engineer. Maintain tremie discharge at or near the bottom of excavation as long as practical during concrete placement. Immerse tremie discharge end as deep as practical in the concrete but not less than 10 feet.

If at any time during the concrete pour the tremie line orifice is removed from the fluid concrete column and discharges concrete above the rising concrete surface, the entire drilled shaft is considered defective. In such case, remove the reinforcing cage and concrete, complete any necessary sidewall cleaning or over-reaming as directed by the Engineer, and repour the shaft.

3.10.2 Pumped Concrete. Concrete pumps and lines may be used for concrete placement in either wet or dry excavations. Do not begin concrete placement until the pump line discharge orifice is at the shaft base elevation.

For wet excavations, use a plug or similar device to separate the concrete from the fluid in the hole until pumping begins. Remove the plug unless otherwise approved by the engineer.

Ensure the discharge orifice remains at least 10 feet below the surface of the fluid concrete. When lifting the pump line during concrete placement, reduce the line pressure until the orifice has been repositioned at a higher level in the excavation.

If at any time during the concrete pour the pump line orifice is removed from the fluid concrete column and discharges concrete above the rising concrete level, the Department will consider the shaft defective. In such case, remove the reinforcing cage and concrete, complete any necessary sidewall cleaning or over-reaming as the Engineer directs, and repour the shaft.

3.10.3 Drop Chutes. Drop chutes may be used to direct placement of free fall concrete in excavations where the maximum depth of water does not exceed one inch. Do not use the free fall method of placement in wet excavations. Concrete may be placed through either a hopper at the top of the tube or side openings as the drop chute is retrieved during concrete placement. Reduce the height of free fall and/or reduce the rate of concrete flow into the excavation if the concrete placement causes the shaft excavation to cave or slough, or if the concrete strikes the reinforcing cage or sidewall. When the Engineer determines free fall placement cannot be accomplished satisfactorily, use either tremie or pumping to accomplish the pour.

3.11 Construction Tolerances. The following construction tolerances apply to drilled shafts unless otherwise stated in the contract document:

1) Construct drilled shaft within 3 inches of plan position in the horizontal plane at the top of the shaft.
2) Do not vary the vertical alignment of a shaft excavation from the plan alignment by more than 1/4 inch per foot of depth or 6 inches total.
3) Maintain the top of the reinforcing steel cage no more than 6 inches above and no more than 3 inches below plan position.
4) All casing diameters shown on the plans refer to O.D. (outside diameter) dimensions. The casing dimensions are subject to American Pipe Institute tolerances applicable to regular steel pipe. A casing larger in diameter than shown in the plans may be used, at no additional cost, with prior approval by the Department.
5) Maintain the top of shaft concrete within ± 3 inches from the plan top of shaft elevation, measured after excess shaft concrete has been removed.
6) Design excavation equipment and methods so that the completed shaft excavation will have a planar bottom. Maintain the cutting edges of excavation equipment normal to the vertical axis of the equipment within a tolerance of ± 3/8 inch per foot of diameter. The tip elevation of the shaft has a tolerance of ± 6 inches from final shaft tip elevation unless otherwise specified in the plans.

Drilled shaft excavations and completed shafts not constructed within the required tolerances are unacceptable. Correct all unacceptable shaft excavations and completed shafts to the satisfaction of the Engineer. When a shaft excavation is completed with unacceptable tolerances, present corrective measures designed by a registered Professional Engineer for approval.

4.0 MEASUREMENT.

4.1 Drilled Shafts. The Department will not measure for payment any trial batches required to demonstrate the adequacy of the concrete mix, method, or equipment; concrete required to fill an oversized casing or oversized excavation; obstruction removal; over-reaming or sidewall cleaning; inspection work or inspection equipment; materials or work necessary, including engineering analyses and redesign, to alter unacceptable work methods or to complete corrections for unacceptable work; and will consider them incidental to the Drilled Shaft. Unless noted otherwise in the contract documents, casing is incidental to the drilled shaft.

4.1.1 Drilled Shaft, Common. The Department will measure the length, in linear feet, of drilled shaft above the top of rock elevation shown on the plans. The

Department will consider this quantity Drilled Shaft, Common regardless of the character of material actually encountered.

4.1.2 Drilled Shafts, Solid Rock. The Department will measure the length, in linear feet, of drilled shaft below the top of rock elevation shown on plans. The Department will consider this quantity Drilled Shafts, Solid Rock regardless of the character of material actually encountered during excavation.

4.2 Technique Shaft. The Department will pay for technique shaft at the contract unit price per each as detailed on the plans or as directed by the Engineer. This will constitute full compensation for all costs incurred during installation as described herein for 'Drilled Shaft' or in the contract documents. No additional compensation beyond the number of technique shafts allowed for in the plans will be permitted for additional technique shafts required because of failure to demonstrate adequacy of methods.

4.3 Rock Coring and Rock Sounding. The Department will measure Rock Sounding and Rock Coring shown on the plans, as specified in part 3.5 of this Special Note, and as the Engineer directs, in linear feet to the nearest 0.1-foot. If soil samples are specified in the contract documents they will be incidental to the unit price bid for Rock Sounding. The Department will not measure or pay for subsurface exploration performed deeper than the elevations indicated on the plans and/or in this Special Note, unless directed by the Engineer, and will consider it incidental to these items of work. Additionally, the Department will consider all mobilization, equipment, labor, incidental items, and operations necessary to complete the boring operations incidental to these items of work.

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

Code	Pay Item	Pay Unit
-----	Drilled Shaft, Diameter*, Common	Linear Foot
-----	Drilled Shaft, Diameter*, Solid Rock	Linear Foot
-----	Technique Shaft	Each
20745ED	Rock Sounding	Linear Foot
20746ED	Rock Coring	Linear Foot

* *See Plan Sheets for sizes of shafts.*

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

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 2019 Standard Specifications for Road and Bridge Construction.

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 materials. Regulations include but are not limited to the following:

1) KRS 351.310 through 351.990
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.

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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

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).

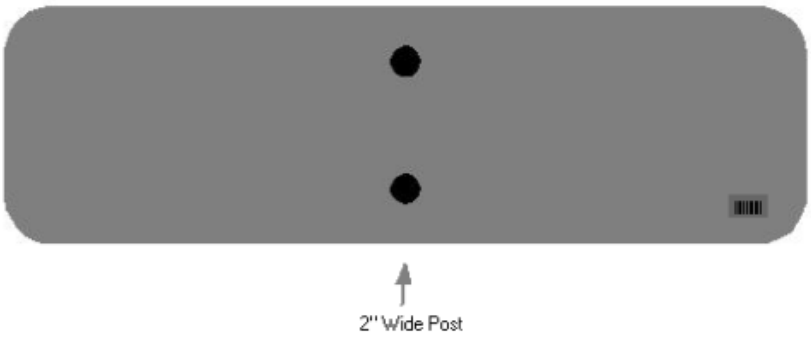
The installation of the permanent sign will be measured in accordance to Section 715.

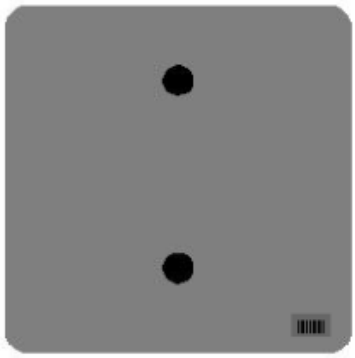
5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

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.

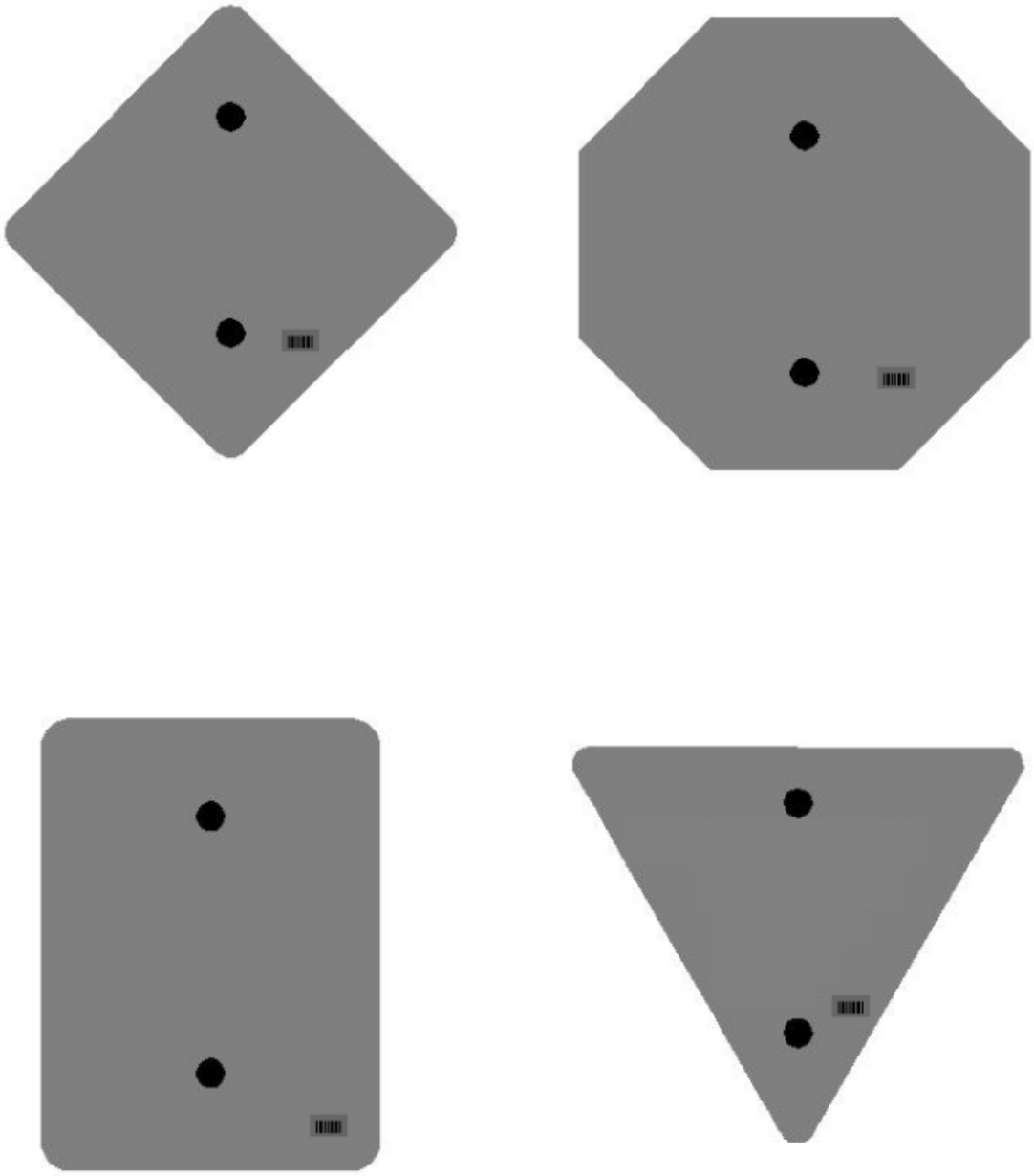
One Sign Post



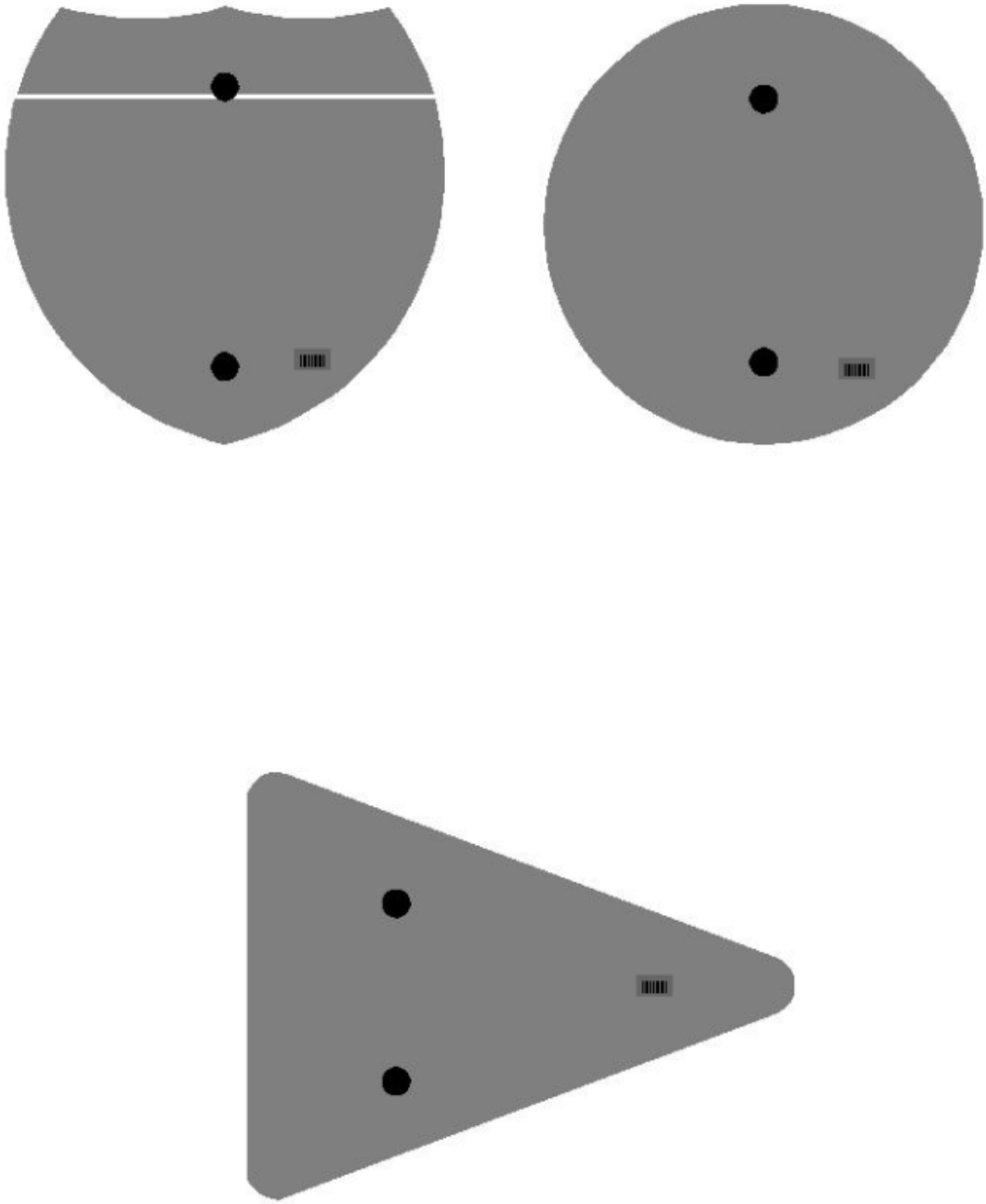




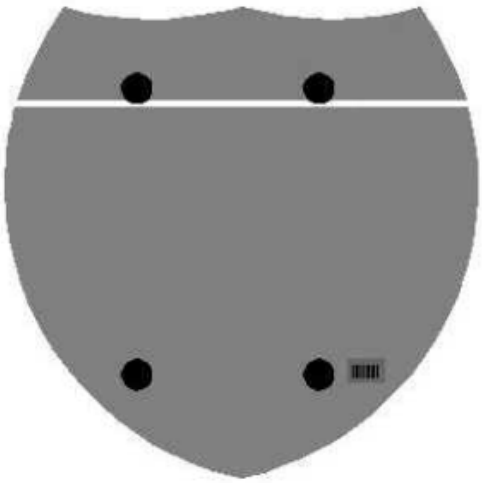
One Sign Post



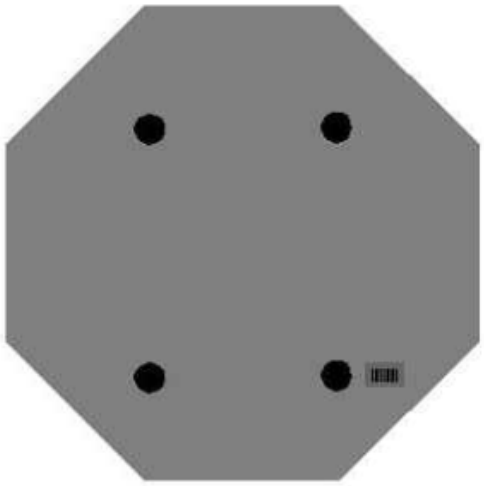
One Sign Post



Double Sign Post



Interstate
Shield

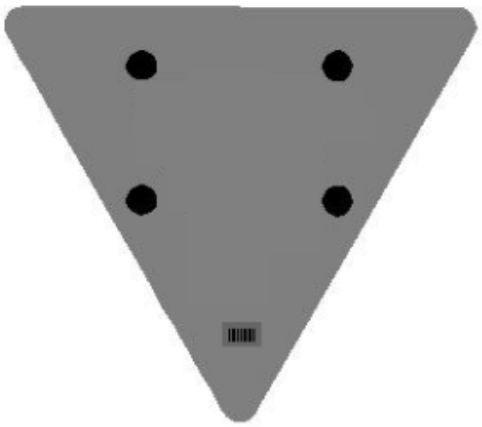


48" Stop

2 Post Signs







11N

SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE

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

2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

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

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

2.2. Equipment.

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

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

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

3. CONSTRUCTION.

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

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

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

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

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

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.

5. PAYMENT. The Department will pay for the Pavement Joint Adhesive at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

11N

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

Code	Pay Item	Pay Unit
20071EC	Joint Adhesive	Linear Foot

May 7, 2014

SPECIAL PROVISION FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES

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

1.0 DESCRIPTION. Construct a soil, granular, or rock embankment with soil, granular or cohesive pile core and place structure granular backfill, as the Plans require. Construct the embankment according to the requirements of this Special Provision, the Plans, Standard Drawing RGX 100 and 105, and the Standard Specifications, Current Edition.

2.0 MATERIALS.

2.1 Granular Embankment. Conform to Subsection 805.10. When Granular Embankment materials are erodible or unstable according to Subsection 805.03.04, use the Special Construction Methods found in 3.2 of the Special Provision.

2.2 Rock Embankment. Provide durable rock from roadway excavation that consists principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.

2.3 Pile Core. Provide a pile core in the area of the embankments where deep foundations are to be installed unless otherwise specified. The Pile Core is the zone indicated on Standard Drawings RGX 100 and 105 designated as Pile Core. Material control of the pile core area during embankment construction is always required. Proper Pile Core construction is required for installation of foundation elements such as drilled or driven piles or drilled shafts. The type of material used to construct the pile core is as directed in the plans or below. Typically, the pile core area will be constructed from the same material used to construct the surrounding embankment. Pile Core can be classified as one of three types:

A) Pile Core - Conform to Section 206 of the Standard Specifications. Provide pile core material consisting of the same material as the adjacent embankment except the material in the pile core area shall be free of boulders or particle sizes larger than 4 inches in any dimension or any other obstructions that may hinder pile driving operations. If the pile core material hinders pile driving operations, take the appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

B) Granular Pile Core. Granular pile core is required only when specified in the plans. Select a gradation of durable rock to facilitate pile driving that conforms to Subsection 805.11. If granular pile core material hinders pile driving operations, take appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

C) Cohesive Pile Core. Cohesive Pile Core is required only when specified in the plans. Conform to Section 206 of the Standard Specifications and use soil with at least 50 percent passing a No. 4 sieve having a minimum Plasticity Index (PI) of 10. In addition, keep the cohesive pile core free of boulders, larger than 4 inches in any dimension, or any other obstructions, which would interfere with drilling operations. If cohesive pile core material interferes with drilling operations, take appropriate means necessary to maintain

excavation stability, at no expense to the Department.

2.4 Structure Granular Backfill. Conform to Subsection 805.11

2.5 Geotextile Fabric. Conform to Type I or Type IV in Section 214 and 843.

3.0 CONSTRUCTION.

3.1 General. Construct roadway embankments at end bents according to Section 206 and in accordance with the Special Provision, the Plans, and Standard Drawings for the full embankment section. In some instances, granular or rock embankment will be required for embankment construction for stability purposes, but this special provision does not prevent the use of soil when appropriate. Refer to the plans for specific details regarding material requirements for embankment construction.

Place and compact the pile core and structure granular backfill according to the applicable density requirements for the project. If the embankment and pile core are dissimilar materials (i.e., a granular pile core is used with a soil embankment or a cohesive pile core is used with a granular embankment), a Geotextile Fabric, Type IV, will be required between the pile core and embankment in accordance with Sections 214 and 843 of the Standard Specifications.

When granular or rock embankment is required for embankment construction, conform to the general requirements of Subsection 206.03.02 B. In addition, place the material in no greater than 2-foot loose lifts and compact with a vibrating smooth wheel roller capable of producing a minimum centrifugal force of 15 tons. Apply these requirements to the full width of the embankment for a distance of half the embankment height or 50 feet, whichever is greater, as shown on Standard Drawing RGX-105.

When using granular pile core, install 8-inch perforated underdrain pipe at or near the elevation of the original ground in the approximate locations depicted on the standard drawing, and as the Engineer directs, to ensure positive drainage of the embankment. Wrap the perforated pipe with a fabric of a type recommended by the pipe manufacturer.

After constructing the embankment, excavate for the end bent cap, drive piling, install shafts or other foundation elements, place the mortar bed, construct the end bent, and complete the embankment to finish grade according to the construction sequence shown on the Plans or Standard Drawings and as specified hereinafter.

Certain projects may require widening of existing embankments and the removal of substructures. Construct embankment according to the plans. Substructure removal shall be completed according to the plans and Section 203. Excavation may be required at the existing embankment in order to place the structure granular backfill as shown in the Standard Drawings.

After piles are driven or shafts installed (see design drawings), slope the bottom of the excavation towards the ends of the trench as noted on the plans for drainage. Using a separate pour, place concrete mortar, or any class concrete, to provide a base for forming and placing the cap. Place side forms for the end bent after the mortar has set sufficiently to support workmen and forms without being disturbed.

Install 4-inch perforated pipe in accordance with the plans and Standard Drawings. In the event slope protection extends above the elevation of the perforated pipe, extend the pipe through the slope protection.

After placing the end bent cap and achieving required concrete cylinder strengths, remove adjacent forms and fill the excavation with compacted structure granular backfill material (maximum 1’ loose lifts) to the level of the berm prior to placing beams for the bridge. Place Type IV geotextile fabric between embankment material and structure granular backfill. After completing the end bent backwall, or after completing the span end

wall, place the compacted structure granular backfill (maximum 1' loose lifts) to subgrade elevation. If the original excavation is enlarged, fill the entire volume with compacted structure granular backfill (maximum 1' loose lifts) at no expense to the Department. Do not place backfill before removing adjacent form work. Place structure granular backfill material in trench ditches at the ends of the excavation. Place Geotextile Fabric, Type IV over the surface of the compacted structure granular backfill prior to placing aggregate base course.

Tamp the backfill with hand tampers, pneumatic tampers, or other means approved by the Engineer. Thoroughly compact the backfill under the overhanging portions of the structure to ensure that the backfill is in intimate contact with the sides of the structure.

Do not apply seeding, sodding, or other vegetation to the exposed granular embankment.

3.2 Special Construction Methods. Erodible or unstable materials may erode even when protected by riprap or channel lining; use the special construction method described below when using these materials.

Use fine aggregates or friable sandstone granular embankment at "dry land" structures only. Do not use them at stream crossings or locations subject to flood waters.

For erodible or unstable materials having 50 percent or more passing the No. 4 sieve, protect with geotextile fabric. Extend the fabric from the original ground to the top of slope over the entire area of the embankment slopes on each side of, and in front of, the end bent. Cover the fabric with at least 12 inches of non-erodible material.

For erodible or unstable materials having less than 50 percent passing a No. 4 sieve, cover with at least 12 inches of non-erodible material.

Where erodible or unstable granular embankment will be protected by riprap or channel lining, place Type IV geotextile fabric between the embankment and the specified slope protection.

4.0 MEASUREMENT.

4.1 Granular Embankment. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment any Granular Embankment that is not called for in the plans.

The Department will not measure for payment any special construction caused by using erodible or unstable materials and will consider it incidental to the Granular Embankment regardless of whether the erodible or unstable material was specified or permitted.

4.2 Rock Embankment. The Department will not measure for payment any rock embankment and will consider it incidental to roadway excavation or embankment in place, as applicable. Rock embankments will be constructed using granular embankment on projects where there is no available rock present within the excavation limits of the project.

4.3 Pile Core. Pile core will be measured and paid under roadway excavation or embankment in place, as applicable. The Department will not measure the pile core for separate payment. The Department will not measure for payment the 8-inch perforated underdrain pipe and will consider it incidental to the Pile Core.

4.4 Structure Granular Backfill. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure any additional material required for backfill outside the limits shown on the Plans and Standard Drawings for payment and will

consider it incidental to the work.

The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Structure Granular Backfill.

4.5 Geotextile Fabric. The Department will not measure the quantity of fabric used for separating dissimilar materials when constructing the embankment and pile core and will consider it incidental to embankment construction.

The Department will not measure for payment the Geotextile Fabric used to separate the Structure Granular Backfill from the embankment and aggregate base course and will consider it incidental to Structure Granular Backfill.

The Department will not measure for payment the Geotextile Fabric required for construction with erodible or unstable materials and will consider it incidental to embankment construction.

4.6 End Bent. The Department will measure the quantities according to the Contract. The Department will not measure furnishing and placing the 2-inch mortar or concrete bed for payment and will consider it incidental to the end bent construction.

4.7 Structure Excavation. The Department will not measure structure excavation on new embankments for payment and will consider it incidental to the Structure Granular Backfill or Concrete as applicable.

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

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

ATTACHMENTS

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

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

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

TRAINING SPECIAL PROVISIONS

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

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

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

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

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

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

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

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case. The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Kentucky Transportation Cabinet, Department of Highways and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

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

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

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

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

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

1-1-93

General Decision Number: KY190107 01/04/2019 KY107

Superseded General Decision Number: KY20180187

State: Kentucky

Construction Type: Highway

Counties: Adair, Barren, Bell, Breathitt, Casey, Clay, Clinton, Cumberland, Estill, Floyd, Garrard, Green, Harlan, Hart, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lincoln, Magoffin, Martin, McCreary, Menifee, Metcalfe, Monroe, Morgan, Owsley, Perry, Pike, Powell, Pulaski, Rockcastle, Russell, Taylor, Wayne, Whitley and Wolfe Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS

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

SUKY2015-047 10/20/2015

	Rates	Fringes
BOILERMAKER	$ 24.65	12.94
BRICKLAYER		
Bricklayer	$ 22.90	8.50

Stone Mason	$ 21.50	8.50
CARPENTER		
Carpenter	$ 24.90	14.50
Piledriver	$ 24.55	14.50
CEMENT MASON	$ 21.25	8.50
ELECTRICIAN		
Electrician	$ 29.36	10.55
Equipment Operator	$ 26.90	10.31
Groundsman	$ 17.79	8.51
Lineman	$ 30.09	10.94

When workmen are required to work from bosum chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and T.V. towers, structural steel (open, unprotected, unfloored raw steel), and bridges or similar hazardous locations where workmen are subject to fall, except where using JLG's and bucket trucks up to 75 feet: Add 25% to workman's base rate for 50 to 75 feet, and add 50% to workman's base rate for over 75 feet.

IRONWORKER	$ 27.56	20.57
LABORER		
Group 1	$ 21.80	12.36
Group 2	$ 22.05	12.36
Group 3	$ 22.10	12.36
Group 4	$ 22.70	12.36

GROUP 1: Aging and Curing of Concrete (Any Mode or Method), Asbestos Abatement Worker, Asphalt Plant Laborers, Asphalt Laborers, Batch Truck Dumpers, Carpenter Tenders, Cement Mason Tenders, Cleaning of Machines, Concrete Laborers, Demolition Laborers, Dredging Laborers, Drill Tender, Environmental Laborer - Nuclear, Radiation, Toxic and Hazardous Waste - Level D, Flagmen, Grade Checkers, All Hand Digging and Hand Back Filling, Highway Marker Placers, Landscaping Laborers, Mesh Handlers and Placers, Puddler, Railroad Laborers, Rip-rap and Grouters, Right of Way Laborers, Sign, Guard Rail and Fence Installers (All Types), Signalmen, Sound Barrier Installer, Storm and Sanitary Sewer Laborers, Swampers, Truck Spotters and Dumpers, Wrecking of Concrete Forms, General Cleanup

GROUP 2: Batter Board Men (Sanitary and Storm Sewer), Brickmason Tenders, Mortar Mixer Operator, Scaffold Builders, Burner and Welder, Bushammers, Chain Saw Operator, Concrete Saw Operators, Deckhand Scow Man, Dry Cement Handlers, Environmental Laborers - Nuclear, Radiation, Toxic and Hazardous Waste - Level C, Forklift Operators for Masonry, Form Setters, Green Concrete Cutting, Hand Operated Grouter and Grinder Machine Operator, Jack Hammers, Lead Paint Abatement, Pavement Breakers, Paving Joint Machine, Pipe Layers - Laser Operators (Non-metallic), Plastic Pipe Fusion, Power Driven Georgia Buggy and Wheel Barrow, Power Post Hole Diggers, Precast Manhole Setters, Walk-behind Tampers, Walk-behind Trenchers, Sand Blasters, Concrete Chippers, Surface Grinders, Vibrator Operators, Wagon Drillers

GROUP 3: Air Track Driller (All Types), Asphalt Luteman and Rakers, Gunnite Nozzleman, Gunnite Operators and Mixers, Grout

Pump Operator, Powderman and Blaster, Side Rail Setters, Rail Paved Ditches, Screw Operators, Tunnel Laborers (Free Air), Water Blasters

GROUP 4: Caisson Workers (Free Air), Cement Finishers, Environmental Laborer - Nuclear, Radiation, Toxic and Hazardous Waste - Level A and B, miners and Drillers (Free Air), Tunnel Blasters, and Tunnel Mockers (Free Air), Directional and Horizontal Boring, Air Track Drillers (All Types), Powder Man and Blasters, Troxler and Concrete Tester if Laborer is Utilized

PAINTER		
All Excluding Bridges	$ 19.92	9.57
Bridges	$ 23.92	10.07
PLUMBER	$ 22.52	7.80
POWER EQUIPMENT OPERATOR:		
Group 1	$ 29.95	14.40
Group 2	$ 29.95	14.40
Group 3	$ 27.26	14.40
Group 4	$ 26.96	14.40

GROUP 1: Auto Patrol, Batcher Plant, Bituminous Paver, Cable-Way, Clamshell, Concrete Mixer (21 cu ft or over), Concrete Pump, Crane, Crusher Plant, Derrick, Derrick Boat, Ditching and Trenching Machine, Dragline, Dredge Engineer, Elevator (regardless of ownership when used for hoisting any building material), Elevating Grader and all types of Loaders, Hoe-type Machine, Hoisting Engine, Locomotive, LeTourneau or Carry-all Scoop, Bulldozer, Mechanic, Orangepeel Bucket, Piledriver, Power Blade, Roller (Bituminous), Roller (Earth), Roller (Rock), Scarifier, Shovel, Tractor Shovel, Truck Crane, Well Point, Winch Truck, Push Dozer, Grout Pump, High Lift, Fork Lift (regardless of lift height), all types of Boom Cats, Multiple Operator, Core Drill, Tow or Push Boat, A-Frame Winch Truck, Concrete Paver, Grade-All, Hoist, Hyster, Material Pump, Pumpcrete, Ross Carrier, Sheepfoot, Sideboom, Throttle-Valve Man, Rotary Drill, Power Generator, Mucking Machine, Rock Spreader attached to Equipment, Scoopmobile, KeCal Loader, Tower Cranes,(French, German and other types), Hydrocrane, Tugger, Backfiller Gurries, Self-propelled Compactor, Self-Contained Hydraulic Percussion Drill

GROUP 2: All Air Compressors (200 cu ft/min or greater), Bituminous Mixer, Concrete Mixer (21 cu. ft. or over), Welding Machine, Form Grader, Tractor (50 hp and over), Bull Float, Finish Machine, Outboard Motor Boat, Brakeman, Mechanic Tender, Whirly Oiler, Tract-air, Road Widening Trencher, Articulating Trucks

GROUP 3: Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4: Bituminous Distributor, Cement Gun, Conveyor, Mud Jack, Paving Joint Machine, Pump, Tamping Machine, Tractor (under 50 hp), Vibrator, Oiler, Air Compressor (under 200 cu ft per minute), Concrete Saw, Burlap and Curing Machine, Hydro Seeder, Power Form Handling Equipment, Deckhand Oiler, Hydraulic Post Driver

SHEET METAL WORKER	$ 20.40	7.80
TRUCK DRIVER		
Driver (3 Tons and Over), Driver (Truck Mounted Rotary Drill)	$ 23.74	14.50
Driver (3 Tons and Under), Tire Changer and Truck Mechanic Tender	$ 23.53	14.50
Driver (Semi-Trailer or Pole Trailer), Driver (Dump Truck, Tandem Axle), Driver of Distributor	$ 23.40	14.50
Driver on Mixer Trucks (All Types)	$ 23.45	14.50
Driver on Pavement Breakers	$ 23.55	14.50
Driver, Euclid and Other Heavy Earth Moving Equipment and Low Boy	$ 24.31	14.50
Driver, Winch Truck and A-Frame when used in Transporting Materials	$ 23.30	14.50
Greaser on Greasing Facilities	$ 24.40	14.50
Truck Mechanic	$ 23.50	14.50
Truck Tender and Warehouseman	$ 23.20	14.50

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
7.0%	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 Jackson County.

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
7.0%	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 Owsley County.

PART IV

INSURANCE

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

PART V

BID ITEMS

191044

PROPOSAL BID ITEMS

Report Date 7/31/19

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	120,190.00	TON		$	
0020	00008		CEMENT STABILIZED ROADBED	287,731.00	SQYD		$	
0030	00020		TRAFFIC BOUND BASE	1,543.00	TON		$	
0040	00100		ASPHALT SEAL AGGREGATE	1,190.00	TON		$	
0050	00103		ASPHALT SEAL COAT	141.00	TON		$	
0060	00190		LEVELING & WEDGING PG64-22	250.00	TON		$	
0070	00212		CL2 ASPH BASE 1.00D PG64-22	26,640.00	TON		$	
0080	00221		CL2 ASPH BASE 0.75D PG64-22	43,701.00	TON		$	
0090	00301		CL2 ASPH SURF 0.38D PG64-22	20,554.00	TON		$	
0100	00358		ASPHALT CURING SEAL	288.00	TON		$	
0110	02542		CEMENT	5,489.00	TON		$	
0120	02702		SAND FOR BLOTTER	720.00	TON		$	
0130	20071EC		JOINT ADHESIVE	170,390.00	LF		$	
0140	24781EC		INTELLIGENT COMPACTION FOR ASPHALT	90,895.00	TON		$	
0150	24891EC		PAVE MOUNT INFRARED TEMP EQUIPMENT	5,067,616.00	SF		$	
0160	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	202.00	TON		$	
0170	24986EC		HMA ELECTRONIC DELIVERY MGMT SYSTEM JACKSON	1.00	L S		$	
0180	24986EC		HMA ELECTRONIC DELIVERY MGMT SYSTEM OWSLEY	1.00	L S		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0190	00021		DRAINAGE BLANKET-EMBANKMENT	4,400.00	CUYD		$	
0200	00078		CRUSHED AGGREGATE SIZE NO 2	94,979.00	TON		$	
0210	01000		PERFORATED PIPE-4 IN	7,145.00	LF		$	
0220	01010		NON-PERFORATED PIPE-4 IN	1,353.00	LF		$	
0230	01020		PERF PIPE HEADWALL TY 1-4 IN	41.00	EACH		$	
0240	01024		PERF PIPE HEADWALL TY 2-4 IN	18.00	EACH		$	
0250	01028		PERF PIPE HEADWALL TY 3-4 IN	30.00	EACH		$	
0260	01032		PERF PIPE HEADWALL TY 4-4 IN	10.00	EACH		$	
0270	01310		REMOVE PIPE	174.00	LF		$	
0280	01891		ISLAND HEADER CURB TYPE 2	300.00	LF		$	
0290	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	550.00	EACH		$	
0300	01990		DELINEATOR FOR BARRIER WALL-B/W	26.00	EACH		$	
0310	02014		BARRICADE-TYPE III	32.00	EACH		$	
0320	02091		REMOVE PAVEMENT	5,303.00	SQYD		$	
0330	02159		TEMP DITCH	26,145.00	LF		$	
0340	02160		CLEAN TEMP DITCH	13,073.00	LF		$	
0350	02200		ROADWAY EXCAVATION	5,849,424.00	CUYD		$	
0360	02242		WATER	14.00	MGAL		$	
0370	02351		GUARDRAIL-STEEL W BEAM-S FACE	49,125.00	LF		$	

191044

PROPOSAL BID ITEMS

Report Date 7/31/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0380	02360		GUARDRAIL TERMINAL SECTION NO 1	50.00	EACH		$	
0390	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	12.00	EACH		$	
0400	02371		GUARDRAIL END TREATMENT TYPE 7	5.00	EACH		$	
0410	02381		REMOVE GUARDRAIL	475.00	LF		$	
0420	02383		REMOVE & RESET GUARDRAIL	475.00	LF		$	
0430	02391		GUARDRAIL END TREATMENT TYPE 4A	80.00	EACH		$	
0440	02402		REMOVE STONE MASONRY	35.00	CUYD		$	
0450	02403		REMOVE CONCRETE MASONRY	80.00	CUYD		$	
0460	02429		RIGHT-OF-WAY MONUMENT TYPE 1	523.00	EACH		$	
0470	02431		WITNESS R/W MONUMENT TYPE 2	2.00	EACH		$	
0480	02432		WITNESS POST	522.00	EACH		$	
0490	02475		PLUG WATER WELL	3.00	EACH		$	
0500	02488		CHANNEL LINING CLASS IV	58,416.00	CUYD		$	
0510	02545		CLEARING AND GRUBBING 174 ACRES-OWSLEY	1.00	LS		$	
0520	02545		CLEARING AND GRUBBING 380 ACRES-JACKSON	1.00	LS		$	
0530	02555		CONCRETE-CLASS B	924.00	CUYD		$	
0540	02562		TEMPORARY SIGNS	4,200.00	SQFT		$	
0550	02585		EDGE KEY	687.00	LF		$	
0560	02596		FABRIC-GEOTEXTILE TYPE I (FOR CONST. ENTR.)	720.00	SQYD		$	
0570	02599		FABRIC-GEOTEXTILE TYPE IV (GEOTECH NOTE 14, 16 & 21)	33,200.00	SQYD		$	
0580	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	27,332.00	SQYD	$2.00	$	$54,664.00
0590	02650		MAINTAIN & CONTROL TRAFFIC JACKSON	1.00	LS		$	
0600	02650		MAINTAIN & CONTROL TRAFFIC OWSLEY	1.00	LS		$	
0610	02671		PORTABLE CHANGEABLE MESSAGE SIGN	8.00	EACH		$	
0620	02676		MOBILIZATION FOR MILL & TEXT JACKSON	1.00	LS		$	
0630	02676		MOBILIZATION FOR MILL & TEXT OWSLEY	1.00	LS		$	
0640	02677		ASPHALT PAVE MILLING & TEXTURING	1,250.00	TON		$	
0650	02696		SHOULDER RUMBLE STRIPS	104,579.00	LF		$	
0660	02701		TEMP SILT FENCE	26,145.00	LF		$	
0670	02703		SILT TRAP TYPE A	512.00	EACH		$	
0680	02704		SILT TRAP TYPE B	512.00	EACH		$	
0690	02705		SILT TRAP TYPE C	512.00	EACH		$	
0700	02706		CLEAN SILT TRAP TYPE A	512.00	EACH		$	
0710	02707		CLEAN SILT TRAP TYPE B	512.00	EACH		$	
0720	02708		CLEAN SILT TRAP TYPE C	512.00	EACH		$	
0730	02726		STAKING JACKSON	1.00	LS		$	
0740	02726		STAKING OWSLEY	1.00	LS		$	
0750	02731		REMOVE STRUCTURE (EXISTING 6' X 5' RCBC STA. 48+65)- JACKSON	1.00	LS		$	
0760	03262		CLEAN PIPE STRUCTURE	1.00	EACH		$	
0770	05950		EROSION CONTROL BLANKET	945,397.00	SQYD		$	

191044

PROPOSAL BID ITEMS

Report Date 7/31/19

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0780	05952		TEMP MULCH	1,647,579.00	SQYD		$	
0790	05953		TEMP SEEDING AND PROTECTION	1,235,685.00	SQYD		$	
0800	05963		INITIAL FERTILIZER	223.00	TON		$	
0810	05964		MAINTENANCE FERTILIZER	130.00	TON		$	
0820	05985		SEEDING AND PROTECTION	1,598,177.00	SQYD		$	
0830	05992		AGRICULTURAL LIMESTONE	1,568.00	TON		$	
0840	06406		SBM ALUM SHEET SIGNS .080 IN	1,129.00	SQFT		$	
0850	06407		SBM ALUM SHEET SIGNS .125 IN	232.00	SQFT		$	
0860	06410		STEEL POST TYPE 1	2,873.00	LF		$	
0870	06490		CLASS A CONCRETE FOR SIGNS	5.98	CUYD		$	
0880	06510		PAVE STRIPING-TEMP PAINT-4 IN	79,654.00	LF		$	
0890	06511		PAVE STRIPING-TEMP PAINT-6 IN	219,561.00	LF		$	
0900	06514		PAVE STRIPING-PERM PAINT-4 IN	39,827.00	LF		$	
0910	06550		PAVE STRIPING-TEMP REM TAPE-W	2,340.00	LF		$	
0920	06551		PAVE STRIPING-TEMP REM TAPE-Y	2,340.00	LF		$	
0930	06556		PAVE STRIPING-DUR TY 1-6 IN W	2,340.00	LF		$	
0940	06557		PAVE STRIPING-DUR TY 1-6 IN Y	2,340.00	LF		$	
0950	06568		PAVE MARKING-THERMO STOP BAR-24IN	367.00	LF		$	
0960	06569		PAVE MARKING-THERMO CROSS-HATCH	3,723.00	SQFT		$	
0970	06574		PAVE MARKING-THERMO CURV ARROW	118.00	EACH		$	
0980	10020NS		FUEL ADJUSTMENT	1,258,412.00	DOLL	$1.00	$	$1,258,412.00
0990	10030NS		ASPHALT ADJUSTMENT	355,363.00	DOLL	$1.00	$	$355,363.00
1000	16034		G SERVICE LONG SIDE 3/4 INCH	1.00	EACH		$	
1010	20430ED		SAW CUT	651.00	LF		$	
1020	21289ED		LONGITUDINAL EDGE KEY	525.00	LF		$	
1030	22045NN		FLUME INLET TY 2-MOD	6.00	EACH		$	
1040	22664EN		WATER BLASTING EXISTING STRIPE	10,000.00	LF		$	
1050	23821EC		CENTERLINE RUMBLE STRIPS-12 IN	52,745.00	LF		$	
1060	24489EC		INLAID PAVEMENT MARKER	1,248.00	EACH		$	
1070	24631EC		BARCODE SIGN INVENTORY	304.00	EACH		$	
1080	24814EC		PIPELINE INSPECTION	10,999.00	LF		$	
1090	24845EC		UTILITY COORDINATION	1.00	LS		$	
1100	24845EC		UTILITY COORDINATION JACKSON	1.00	LS		$	
1110	24995EC		PAVE STRIPING-SPRAY THERMO-6 IN W	118,703.00	LF		$	
1120	24996EC		PAVE STRIPING-SPRAY THERMO-6 IN Y	100,858.00	LF		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1130	00439		ENTRANCE PIPE-12 IN	38.00	LF		$	
1140	00440		ENTRANCE PIPE-15 IN	410.00	LF		$	
1150	00441		ENTRANCE PIPE-18 IN	531.00	LF		$	
1160	00443		ENTRANCE PIPE-24 IN	61.00	LF		$	
1170	00445		ENTRANCE PIPE-30 IN	190.00	LF		$	
1180	00462		CULVERT PIPE-18 IN	1,304.00	LF		$	
1190	00464		CULVERT PIPE-24 IN	2,805.00	LF		$	
1200	00466		CULVERT PIPE-30 IN	2,363.00	LF		$	
1210	00468		CULVERT PIPE-36 IN	1,069.00	LF		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1220	00469		CULVERT PIPE-42 IN	1,803.00	LF		$	
1230	00470		CULVERT PIPE-48 IN	1,122.00	LF		$	
1240	00471		CULVERT PIPE-54 IN	533.00	LF		$	
1250	01202		PIPE CULVERT HEADWALL-15 IN	8.00	EACH		$	
1260	01204		PIPE CULVERT HEADWALL-18 IN	9.00	EACH		$	
1270	01204		PIPE CULVERT HEADWALL-18 IN	7.00	EACH		$	
1280	01208		PIPE CULVERT HEADWALL-24 IN	11.00	EACH		$	
1290	01208		PIPE CULVERT HEADWALL-24 IN	15.00	EACH		$	
1300	01210		PIPE CULVERT HEADWALL-30 IN	7.00	EACH		$	
1310	01210		PIPE CULVERT HEADWALL-30 IN	14.00	EACH		$	
1320	01212		PIPE CULVERT HEADWALL-36 IN	8.00	EACH		$	
1330	01212		PIPE CULVERT HEADWALL-36 IN	1.00	EACH		$	
1340	01214		PIPE CULVERT HEADWALL-42 IN	4.00	EACH		$	
1350	01214		PIPE CULVERT HEADWALL-42 IN	12.00	EACH		$	
1360	01216		PIPE CULVERT HEADWALL-48 IN	2.00	EACH		$	
1370	01216		PIPE CULVERT HEADWALL-48 IN	6.00	EACH		$	
1380	01450		S & F BOX INLET-OUTLET-18 IN	7.00	EACH		$	
1390	01451		S & F BOX INLET-OUTLET-24 IN	8.00	EACH		$	
1400	01452		S & F BOX INLET-OUTLET-30 IN	1.00	EACH		$	
1410	01453		S & F BOX INLET-OUTLET-36 IN	1.00	EACH		$	
1420	01511		DROP BOX INLET TYPE 5D	2.00	EACH		$	
1430	24026EC		PIPE CULVERT HEADWALL-54 IN	2.00	EACH		$	
1440	24561EN		ENTRANCE PIPE-42 IN	52.00	FT		$	

Section: 0004 - BRIDGE- NO. 27780 - KY 30 OVER STURGEON CREEK STA 356+75

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1450	02231		STRUCTURE GRANULAR BACKFILL	276.00	CUYD		$	
1460	02998		MASONRY COATING	2,973.00	SQYD		$	
1470	03299		ARMORED EDGE FOR CONCRETE	76.00	LF		$	
1480	08001		STRUCTURE EXCAVATION-COMMON	139.00	CUYD		$	
1490	08002		STRUCTURE EXCAV-SOLID ROCK	152.00	CUYD		$	
1500	08019		CYCLOPEAN STONE RIP RAP	628.00	TON		$	
1510	08020		CRUSHED AGGREGATE SLOPE PROT	196.00	TON		$	
1520	08033		TEST PILES	83.00	LF		$	
1530	08046		PILES-STEEL HP12X53	477.00	LF		$	
1540	08094		PILE POINTS-12 IN	14.00	EACH		$	
1550	08100		CONCRETE-CLASS A	315.50	CUYD		$	
1560	08104		CONCRETE-CLASS AA	677.20	CUYD		$	
1570	08150		STEEL REINFORCEMENT	55,899.00	LB		$	
1580	08151		STEEL REINFORCEMENT-EPOXY COATED	187,081.00	LB		$	
1590	20743ED		DRILLED SHAFT 54 IN-SOLID ROCK	24.00	LF		$	
1600	20744ED		DRILLED SHAFT 60 IN-COMMON	34.00	LF		$	
1610	20746ED		ROCK CORINGS	44.00	LF		$	
1620	21084ED		SOUNDINGS	34.00	LF		$	
1630	21532ED		RAIL SYSTEM TYPE III	986.00	LF		$	
1640	22861EN		HIGH STRENGTH GEOTEXTILE FABRIC TY V	1,706.00	SQYD		$	
1650	24098EC		PPC I-BEAM TYPE HN 66-49	1,958.00	LF		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1660	24595EN		ELASTICIZED EPS (10" THICKNESS)	136.00	SQYD		$	

Section: 0005 - BRIDGE- NO. 27721 - KY 30 BRIDGE OVER US 421

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1670	02231		STRUCTURE GRANULAR BACKFILL	276.00	CUYD		$	
1680	02998		MASONRY COATING	1,352.00	SQYD		$	
1690	03299		ARMORED EDGE FOR CONCRETE	76.00	LF		$	
1700	08019		CYCLOPEAN STONE RIP RAP	180.00	TON		$	
1710	08020		CRUSHED AGGREGATE SLOPE PROT	98.00	TON		$	
1720	08033		TEST PILES	61.00	LF		$	
1730	08046		PILES-STEEL HP12X53	303.00	LF		$	
1740	08094		PILE POINTS-12 IN	14.00	EACH		$	
1750	08100		CONCRETE-CLASS A	74.20	CUYD		$	
1760	08104		CONCRETE-CLASS AA	392.00	CUYD		$	
1770	08150		STEEL REINFORCEMENT	9,850.00	LB		$	
1780	08151		STEEL REINFORCEMENT-EPOXY COATED	86,323.00	LB		$	
1790	20637ED		DRILLED SHAFT-ROCK 48 IN	28.00	LF		$	
1800	20746ED		ROCK CORINGS	48.00	LF		$	
1810	21084ED		SOUNDINGS	27.00	LF		$	
1820	21432NC		CONCRETE FORMLINER	1,293.00	SQFT		$	
1830	21532ED		RAIL SYSTEM TYPE III	466.00	LF		$	
1840	22417EN		DRILLED SHAFT-54 IN-COMMON	27.00	LF		$	
1850	22861EN		HIGH STRENGTH GEOTEXTILE FABRIC TY V	1,706.00	SQYD		$	
1860	23168ED		CONCRETE STAINING	144.00	SQYD		$	
1870	24098EC		PPC I-BEAM TYPE HN 66-49	924.70	LF		$	
1880	24595EN		ELASTICIZED EPS (10" THICKNESS)	136.00	SQYD		$	

Section: 0006 - BRIDGE- NO. 27781 - KY 30 OVER MILLS BR & KY 1071 STA 429+44.50

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1890	02231		STRUCTURE GRANULAR BACKFILL	261.00	CUYD		$	
1900	02998		MASONRY COATING	586.00	SQYD		$	
1910	03299		ARMORED EDGE FOR CONCRETE	38.00	LF		$	
1920	08020		CRUSHED AGGREGATE SLOPE PROT	221.00	TON		$	
1930	08033		TEST PILES	27.00	LF		$	
1940	08051		PILES-STEEL HP14X89	245.00	LF		$	
1950	08095		PILE POINTS-14 IN	10.00	EACH		$	
1960	08100		CONCRETE-CLASS A	32.00	CUYD		$	
1970	08104		CONCRETE-CLASS AA	180.00	CUYD		$	
1980	08150		STEEL REINFORCEMENT	7,594.00	LB		$	
1990	08151		STEEL REINFORCEMENT-EPOXY COATED	53,892.00	LB		$	
2000	21532ED		RAIL SYSTEM TYPE III	225.00	LF		$	
2010	22861EN		HIGH STRENGTH GEOTEXTILE FABRIC TY V	955.00	SQYD		$	
2020	24582EN		PRECAST PC I BEAM-HN 72-49	446.00	LF		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2030	24595EN		ELASTICIZED EPS (10" THICKNESS)	51.00	SQYD		$	

Section: 0007 - BRIDGE- NO. 27722 - 6' X 5' RCBC STA 121+95

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2040	02223		GRANULAR EMBANKMENT	61.60	CUYD		$	
2050	08002		STRUCTURE EXCAV-SOLID ROCK	72.80	CUYD		$	
2060	08003		FOUNDATION PREPARATION	1.00	LS		$	
2070	08100		CONCRETE-CLASS A	286.20	CUYD		$	
2080	08150		STEEL REINFORCEMENT	21,047.00	LB		$	

Section: 0008 - BRIDGE- NO. 27782 - 6' X 6' RCBC STA 444+45

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2090	08002		STRUCTURE EXCAV-SOLID ROCK	150.80	CUYD		$	
2100	08003		FOUNDATION PREPARATION	1.00	LS		$	
2110	08100		CONCRETE-CLASS A	673.80	CUYD		$	
2120	08150		STEEL REINFORCEMENT	71,765.00	LB		$	

Section: 0009 - BRIDGE- NO. 27723 - DBL 14' X 7' RCBC STA 208+83

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2130	02555		CONCRETE-CLASS B	10.00	CUYD		$	
2140	08002		STRUCTURE EXCAV-SOLID ROCK	188.00	CUYD		$	
2150	08003		FOUNDATION PREPARATION	1.00	LS		$	
2160	08100		CONCRETE-CLASS A	541.60	CUYD		$	
2170	08150		STEEL REINFORCEMENT	56,774.00	LB		$	

Section: 0010 - BRIDGE- NO. 27783 - 8' X 7' RCBC STA 555+40

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2180	08002		STRUCTURE EXCAV-SOLID ROCK	888.00	CUYD		$	
2190	08003		FOUNDATION PREPARATION	1.00	LS		$	
2200	08100		CONCRETE-CLASS A	1,263.40	CUYD		$	
2210	08150		STEEL REINFORCEMENT	103,258.00	LB		$	

Section: 0011 - BRIDGE- NO. 27724 - 12' X5' RCBC STA 60+70

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2220	02223		GRANULAR EMBANKMENT	5.00	CUYD		$	
2230	08002		STRUCTURE EXCAV-SOLID ROCK	79.80	CUYD		$	
2240	08003		FOUNDATION PREPARATION	1.00	LS		$	
2250	08100		CONCRETE-CLASS A	118.90	CUYD		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2260	08150		STEEL REINFORCEMENT	9,723.00	LB		$	

Section: 0012 - BRIDGE- NO. 27784 - 8' X 6' RCBC STA 595+00

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2270	08003		FOUNDATION PREPARATION	1.00	LS		$	
2280	08100		CONCRETE-CLASS A	428.00	CUYD		$	
2290	08150		STEEL REINFORCEMENT	50,009.00	LB		$	

Section: 0013 - BRIDGE- NO. 27725 - 6' X 6' RCBC STA 47+40

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2300	02555		CONCRETE-CLASS B	45.40	CUYD		$	
2310	08002		STRUCTURE EXCAV-SOLID ROCK	154.10	CUYD		$	
2320	08003		FOUNDATION PREPARATION	1.00	LS		$	
2330	08100		CONCRETE-CLASS A	325.00	CUYD		$	
2340	08150		STEEL REINFORCEMENT	27,230.00	LB		$	

Section: 0014 - BRIDGE- NO. 27726 - 10' X 5' RCBC STA 26+80

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2350	02223		GRANULAR EMBANKMENT	64.00	CUYD		$	
2360	08002		STRUCTURE EXCAV-SOLID ROCK	5.00	CUYD		$	
2370	08003		FOUNDATION PREPARATION	1.00	LS		$	
2380	08100		CONCRETE-CLASS A	141.70	CUYD		$	
2390	08150		STEEL REINFORCEMENT	11,579.00	LB		$	

Section: 0015 - BRIDGE- NO. 27781 - KY 30 OVER MILLS BR & KY 1071 STA 429+44.50

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2400	02231		STRUCTURE GRANULAR BACKFILL	232.00	CUYD		$	
2410	02998		MASONRY COATING	2,247.00	SQYD		$	
2420	03299		ARMORED EDGE FOR CONCRETE	38.00	LF		$	
2430	08019		CYCLOPEAN STONE RIP RAP	609.00	TON		$	
2440	08020		CRUSHED AGGREGATE SLOPE PROT	318.00	TON		$	
2450	08033		TEST PILES	78.00	LF		$	
2460	08051		PILES-STEEL HP14X89	703.00	LF		$	
2470	08095		PILE POINTS-14 IN	10.00	EACH		$	
2480	08100		CONCRETE-CLASS A	309.00	CUYD		$	
2490	08104		CONCRETE-CLASS AA	490.00	CUYD		$	
2500	08150		STEEL REINFORCEMENT	67,171.00	LB		$	
2510	08151		STEEL REINFORCEMENT-EPOXY COATED	156,879.00	LB		$	
2520	20745ED		ROCK SOUNDINGS	77.00	LF		$	
2530	20746ED		ROCK CORINGS	156.00	LF		$	
2540	21532ED		RAIL SYSTEM TYPE III	663.00	LF		$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2550	22861EN		HIGH STRENGTH GEOTEXTILE FABRIC TY V	829.00	SQYD		$	
2560	22885EN		DRILLED SHAFT-72 IN-ROCK	88.00	LF		$	
2570	24001EC		DRILLED SHAFT-78 IN COMMON	66.00	LF		$	
2580	24582EN		PRECAST PC I BEAM-HN 72-49	1,314.00	LF		$	
2590	24595EN		ELASTICIZED EPS (10" THICKNESS)	46.00	SQYD		$	

Section: 0016 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2600	14004		W DIRECTIONAL BORE	180.00	LF		$	
2610	14014		W ENCASEMENT STEEL OPEN CUT RANGE 3	585.00	LF		$	
2620	14022		W FLUSH HYDRANT ASSEMBLY TYPE 1	1.00	EACH		$	
2630	14022		W FLUSH HYDRANT ASSEMBLY TYPE 3	3.00	EACH		$	
2640	14056		W PIPE PVC 02 INCH	2,150.00	LF		$	
2650	14058		W PIPE PVC 04 INCH	2,420.00	LF		$	
2660	14059		W PIPE PVC 06 INCH	955.00	LF		$	
2670	14091		W TIE-IN 02 INCH	1.00	EACH		$	
2680	14093		W TIE-IN 04 INCH	5.00	EACH		$	
2690	14094		W TIE-IN 06 INCH	4.00	EACH		$	
2700	14102		W VALVE 02 INCH	1.00	EACH		$	
2710	14104		W VALVE 04 INCH	5.00	EACH		$	
2720	14105		W VALVE 06 INCH	3.00	EACH		$	

Section: 0017 - TRAINEES

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2730	02742		TRAINEE PAYMENT REIMBURSEMENT (1 GROUP 2, 3 OR 4 OPERATOR)	1,400.00	HOUR		$	
2740	02742		TRAINEE PAYMENT REIMBURSEMENT (1 GROUP 2,3 OR 4 OPERATOR)	1,400.00	HOUR		$	

Section: 0018 - DEMOBILIZATION &/OR MOBILIZATION

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