CALL NO. 302

CONTRACT ID. 151280

KNOX COUNTY

FED/STATE PROJECT NUMBER FD39 061 1487 000-001

DESCRIPTION MANCHESTER STREET (KY 1487)

WORK TYPE ASPHALT REHAB WITH GRADE & DRAIN

PRIMARY COMPLETION DATE 11/15/2016

LETTING DATE: November 20,2015

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN STANDARD TIME November 20,2015. Bids will be publicly announced at 10:00 AM EASTERN STANDARD TIME.

PLANS AVAILABLE FOR THIS PROJECT.

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

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PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 11

CONTRACT ID - 151280

FD39 061 1487 000-001

COUNTY - KNOX

PCN - DE06414871580
FD39 061 1487 000-001

MANCHESTER STREET (KY 1487) (MP 0.000) CONSTRUCT TURN LANES, SIDEWALKS CURVE IMPROVEMENTS AND STORM DRAINAGE, SYSTEM IMPROVEMENTS ALONG KY 1487 (MANCHESTER STREET) AT THE UNION COLLEGE CAMPUS IN BARBOURVILLE (MP 0.410), A DISTANCE OF 0.41 MILES.GRADE & DRAIN WITH ASPHALT SURFACE SYP NO. 11-03004.00.

GEOGRAPHIC COORDINATES LATITUDE 36:52:22.00 LONGITUDE 83:53:21.00

COMPLETION DATE(S):

COMPLETED BY 11/15/2016	APPLIES TO ENTIRE CONTRACT
COMPLETED BY 08/15/2016	MILESTONE - WATER, SEWER, ASPHALT BASE, TEMP STRIPING & ETC.

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 Expedite Bidding Program available on the Internet web site of the Department of Highways, Division of Construction Procurement. (www.transportation.ky.gov/construction-procurement)

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 is advised that the Underground Facility Damage Protection Act of 1994, became law January 1, 1995. It is the contractor's responsibility to determine the impact of the act regarding this project, and take all steps necessary to be in compliance with the provision of the act.

SPECIAL NOTE FOR COMPOSITE OFFSET BLOCKS

Contrary to the Standard Drawings (2012 edition) the Cabinet will allow 6" composite offset blocks in lieu of wooden offset blocks, except as specified on proprietary end treatments and crash cushions. The composite blocks shall be selected from the Cabinet's List of Approved Materials.

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. (See attachment)

10/29/12

Commonwealth of Kentucky
Finance and Administration Cabinet
OFFICE OF THE SECRETARY
Room 383, Capitol Annex
702 Capital Avenue
Frankfort, KY 40601-3462
(502) 564-4240
Fax (502) 564-6785

Steven L. Beshear
Governor

Lori H. Flanery
Secretary

SECRETARY'S ORDER 11-004

FINANCE AND ADMINISTRATION CABINET

Vendor Document Disclosure

WHEREAS, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary to conduct a review of the records of a private vendor that holds a contract to provide goods and/or services to the Commonwealth; and

WHEREAS, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary during the course of an audit, investigation or any other inquiry by an Executive Branch agency that involves the review of documents; and

WHEREAS, KRS 42.014 and KRS 12.270 authorizes the Secretary of the Finance and Administration Cabinet to establish the internal organization and assignment of functions which are not established by statute relating to the Finance and Administration Cabinet; further, KRS Chapter 45A.050 and 45A.230 authorizes the Secretary of the Finance and Administration Cabinet to procure, manage and control all supplies and services that are procured by the Commonwealth and to intervene in controversies among vendors and state agencies; and

NOW, THEREFORE, pursuant to the authority vested in me by KRS 42.014, KRS 12.270, KRS 45A.050, and 45A.230, I, Lori H. Flanery, Secretary of the Finance and Administration Cabinet, do hereby order and direct the following:

I. Upon the request of an Executive Branch agency, the Finance and Administration Cabinet ("FAC") shall formally review any dispute arising where the agency has requested documents from a private vendor that holds a state contract and the vendor has refused access to said documents under a claim that said documents are not directly pertinent or relevant to the agency's inquiry upon which the document request was predicated.

II. Upon the request of an Executive Branch agency, the FAC shall formally review any situation where the agency has requested documents that the agency deems necessary to

conduct audits, investigations or any other formal inquiry where a dispute has arisen as to what documents are necessary to conclude the inquiry.

III. Upon receipt of a request by a state agency pursuant to Sections I & II, the FAC shall consider the request from the Executive Branch agency and the position of the vendor or party opposing the disclosure of the documents, applying any and all relevant law to the facts and circumstances of the matter in controversy. After FAC's review is complete, FAC shall issue a Determination which sets out FAC's position as to what documents and/or records, if any, should be disclosed to the requesting agency. The Determination shall be issued within 30 days of receipt of the request from the agency. This time period may be extended for good cause.

IV. If the Determination concludes that documents are being wrongfully withheld by the private vendor or other party opposing the disclosure from the state agency, the private vendor shall immediately comply with the FAC's Determination. Should the private vendor or other party refuse to comply with FAC's Determination, then the FAC, in concert with the requesting agency, shall effectuate any and all options that it possesses to obtain the documents in question, including, but not limited to, jointly initiating an action in the appropriate court for relief.

V. Any provisions of any prior Order that conflicts with the provisions of this Order shall be deemed null and void.

SPECIAL NOTE FOR RECIPROCAL PREFERENCE

Reciprocal preference to be given by public agencies to resident bidders

By reference, KRS 45A.490 to 45A.494 are incorporated herein and in compliance regarding the bidders residency. Bidders who want to claim resident bidder status should complete the Affidavit for Claiming Resident Bidder Status along with their bid in the Expedite Bidding Program. Submittal of the Affidavit should be done along with the bid in Bid Express.

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.

OPTION A

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

SPECIAL NOTE FOR
GUARDRAIL END TREATMENT TYPE 1

Contrary to KYTC Standard Drawing RBR-020-05 the guardrail end treatment ET-Plus manufactured by Trinity Industries will not be permitted as an option for bid item “Guardrail End Treatment Type 1”.

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 2012 Standard Specifications for Road and Bridge Construction.

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

KY 1487, Knox County
FD04 061 1487 000-001
11-3004.00

SPECIAL NOTE FOR FIXED COMPLETION DATE AND DISINCENTIVE FEES

Fixed Completion Date and Disincentive Fees

This project will have a fixed completion date of November 15, 2016 for completion of all work associated with this project. Contrary to Section 108.07.04 of the Standard Specifications, time extensions for any of the fixed completion dates **will not** be granted for any reason.

This project will also have an intermediate fixed completion date of August 15, 2016 for completion of the following items:

1. Water and Sewer utility lines relocated.
2. Excavation.
3. Construction of storm sewer pipes and all curb box inlets.
4. Construction of subgrade and edge drains.
5. Curb and gutter items.
6. All asphalt base in the driving lanes and shoulders.
7. Temporary striping for maintenance of traffic.

A Disincentive Fee equal to $2400 per calendar day will be charged for each calendar day after August 15th, 2016 that the work prescribed under the intermediate completion date is not completed. ***Liquidated Damages will be charged for each day past November 15, 2016 the project is not called complete. Liquidated Damages will be calculated as per Section 108.09 except*** contrary to Section 108.09 of the Standard Specifications, ***both*** the Disincentive Fee ***and all project Liquidated Damages*** will be charged during those periods when seasonal ***or temperature*** limitations of the Contract prohibit the Contractor from working on a controlling item or operation.

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

TC 62-226
Rev. 07/2015
Page 1 of 1

RIGHT OF WAY CERTIFICATION

ITEM #	COUNTY	PROJECT #	FEDERAL PROJECT #
11-3004.00	Knox	FDO4 SPP 061 1487 000-001	Not federally funded

PROJECT DESCRIPTION Construct turn lanes, sidewalks, curve improvements and strom drainage along KY 1487 (Manchester St).

☐ **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 with FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional rights of way or relocation assistance were required for this project.

☐ **ADDITIONAL RIGHT OF WAY REQUIRED AND CLEARED**

TOTAL NUMBER OF PARCELS ON PROJECT		IMPROVEMENTS	
NUMBER OF PARCELS THAT HAVE BEEN ACQUIRED BY:		☐	There were no improvements within the required right of way
Signed Deed		☐	All improvements have ben removed from the required right of way
Condemnation			
Signed Right of Entry Agreement		☐	Improvements are currently being removed and it is anticipated that right of way will be cleared prior to the letting date
RELOCATION ASSISTANCE		☐	Improvement removal will be included in the construction contract
Relocation Assistance was not required for this project	☐		
All parties have been relocated in accordance with FHWA regulations	☐		

☒ **ADDITIONAL RIGHT OF WAY REQUIRED WITH EXCEPTION**

TOTAL NUMBER OF PARCELS ON PROJECT	24
Number of parcels acquired by Deed, Condemnation or Signed Right of Entry Agreement	22

EXCEPTION(S)	ANTICIPATED DATE OF POSSESSION	IMPROVEMENTS	
5	11/6/15	☐	There were no improvements within the required right of way
22	11/6/15	☐	All improvements have been removed from the required right of way
		☒	Improvements are currently being removed and it is anticipated that right of way will be cleared prior to the letting date
		☒	Improvement removal will be included in the construction contract

RELOCATION ASSISTANCE

Relocation assistance was not required for this project	☐
All parties have been relocated in accordance with FHWA regulations	☒

Notes/Comments: Parcel 5 has received IOJ and we are only waiting on the commissioner's award check to post the award. Parcel 22 is the Barbourville Housing Authority and we have been waiting on their authority to sign, which they've now received so they will be signed next week. Parcel 3 has a mics. move scheduled for November 11th with the moving company. Barbourville Utility Commission still has a few easements they are in the process of getting signed. All items completed by 11/15/15.

LPA		Right of Way Director	
Printed Name		Printed Name	DM Loy
Signature		Signature	DM Loy
Date		Date	30 OCT 2015
Right of Way Supervisor		**FHWA**	
Printed Name	David Fiddes	Printed Name	
Signature	David Fiddes	Signature	
Date	10/30/15	Date	

UTILITIES AND RAIL CERTIFICATION NOTE

KNOX COUNTY
FD04 061 85640 01U
KY1487 (Manchester Street) Improvements
11-3004.00

GENERAL PROJECT NOTE ON UTILITY PROTECTION

Care should be exercised when working near overhead lines. Delta Gas has underground facilities in the area of the project that should not be disturbed.

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

N/A

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

THE FOLLOWING COMPANIES ARE RELOCATING/ADJUSTING THEIR UTILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

The Barbourville Utility Commission has overhead electric & CATV lines being relocated outside the disturbed limits. As a part of their relocations, there will be a new underground electric crossing near STA 6+50 that is not to be disturbed. Coordinate with the Utility Commission before beginning excavation in this area.

Delta Gas has relocated various sizes (3/4" to 4") of plastic line inside the project limits. Plans showing the relocation will be provided.

THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE COMPANY OR THE COMPANY'S SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

N/A.

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

The Barbourville Utility Commission's water & sanitary sewer lines are to be relocated as shown in the utility relocation plans. Lines not on right of way will be located on permanent easements obtained by the Utility Commission, which will also be shown on the relocation plans. All work should be coordinated with the Utility Commission.

THE FOLLOWING RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

(•) No Rail Involved ( ) Minimal Rail Involved (See Below) ( ) Rail Involved (See Below)

UTILITIES AND RAIL CERTIFICATION NOTE

KNOX COUNTY
FD04 061 85640 01U
KY1487 (Manchester Street) Improvements
11-3004.00

SPECIAL CAUTION NOTE – PROTECTION OF UTILITIES

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

BEFORE YOU DIG

The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

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

UTILITIES AND RAIL CERTIFICATION NOTE

KNOX COUNTY
FD04 061 85640 01U
KY1487 (Manchester Street) Improvements
11-3004.00

AREA UTILITIES CONTACT LIST

Utility Company/Agency	Contact Name	Contact Information
Barbourville Utility Comm.	**Josh Callihan (Manager)**	**606-546-3187**
Barbourville Utility Comm.	**Casey Jones (Elec. Sup.)**	**606-622-0382**
Windstream	**Tim Williams**	**606-862-9034**
Delta Gas	**Brian Sidwell**	**859-744-6171x1234**

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 Standard 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:

Contractors preapproved by Barbourville Utility Commission:

- Akins Excavating – Corbin, KY
- Kay & Kay Contracting – London, KY
- Irvine Contracting – London, KY

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 Standard 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:

> **No materials are being supplied by the utility owner. All materials are to be supplied by the contractor per bid item descriptions, utility specifications, and utility plans**.

SECURITY OF SUPPLIED MATERIALS

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

Standard Water Bid Item Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

W LINE MARKER This item is for payment for furnishing and installing a ground level 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, 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, 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.

SPECIFICATIONS

KY 1487 WATER & SEWER RELOCATIONS

KNOX COUNTY, KY

- Prepared for -

BARBOURVILLE UTILITY COMMISSION
P.O. Box 1600
202 Daniel Boone Drive
Barbourville, KY 40906

- Prepared by -

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October 2015

SPECIFICATIONS

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SECTION NO.

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 1.1 SUMMARY OF WORK

The work to be performed under this contract includes the furnishing of all labor, materials, and incidentals necessary for the relocation of existing water and sewer lines.

All work shall be in accordance with the Contract Documents. It is the intent of the Contract Documents to make a complete and workable system, whether every item is specifically mentioned or not.

SECTION 1.2 MEASUREMENT AND PAYMENT

SECTION 1.2.1 GENERAL

Payment for all work covered by these Specifications, the Drawings, Supplemental General Conditions, and Addenda will be at the unit prices bid for the various items of work, installed or constructed, in place and accepted in the final work. The unit prices bid will be used as a basis for computing and checking pay estimates.

Unit prices bid for the various items of work will be used in assigning values for additions or deletions to the work.

The CONTRACTOR will be paid for bid items suitably stored which are to be incorporated into the work when the materials are stored at a specific area on the job site. The amount of payment to the CONTRACTOR will be the actual cost of the material (up to the quantities listed in the bid) less ten percent (10%) retainage. Materials which are not bid items (such as adapters, tees, ells, reducers, plugs, and other incidentals) will not be paid for as materials stored.

SECTION 1.2.2 ITEMS AND MEASUREMENT

GENERAL:

The following items will be paid for as specified below and will constitute full payment for all labor, equipment, and materials necessary to complete the work. All other items and work will be considered incidental.

PVC Waterline, per linear foot of the sizes called for
PVC Gravity Sewer, per linear foot of the sizes called for
PVC Sewer Force Main, per linear foot of the sizes called for
Steel Encasement Pipe – Open Cut, per linear foot of the sizes called for
Tie to Existing Waterline (Wet Tap), per each of the sizes called for
Tie to Existing Waterline (Dry), per each of the sizes called for
Gate Valve, per each of the sizes called for
Fire Hydrant, per each
Remove & Abandon Existing Fire Hydrant, per each
Cap & Abandon Existing Waterline, per each
Plug & Abandon Existing Force Main, per each

Plug & Abandon Existing Sewer Line, per each
PVC Service Lateral, per linear foot of the sizes called for
Wye or Tee, per each
Re-Connect Existing Sewer Service, per each
Sewer Clean-Out, per each
Water Service Setting, per each
Re-Connect Existing Water Service, per each
Copper Service, per linear foot of the sizes called for
Remove Existing Sanitary Sewer Manhole, per each
Manhole, per each
Asphalt Pavement Repair, per square yard

Pipe will be measured as the actual lengths installed.

The per each items will be measured in place.

All existing water meters and vaults within project disturb limits shall be removed and abandoned. All equipment shall be the property of the Barbourville Utility Commission and shall be turned over to them after removal. No extra payment will be made.

SEWER FLOW CONTROL:

Bypass pumping is not a pay item. Where required, it shall be considered incidental to the task being performed and included in the respective unit prices for these items.

RE-CONNECT EXISTING WATER SERVICE:

Payment for Bid Item “Re-Connect Existing Water Service” shall include all labor and materials (including PE service line) to re-connect customer’s existing service line to new meter vault.

WATER SERVICE SETTING:

Payment for Bid Item “Water Service Setting” shall include all labor and materials to install a new water meter and meter vault, including the service saddle, corporation stop, etc. at the main; not including the copper service line from the main to the meter vault, which will be paid separately.

LONG/SHORT SIDE SEWER LATERAL:

Payment for Bid Item “Long/Short Side Sewer Lateral” shall include all labor, piping, materials, equipment, etc. for the construction of a new sewer service from the newly constructed gravity collection line to the existing private service lateral, including the main line tee/wye and construction of a new sewer clean-out at the right-of-way/private property line. Services located on the opposite side of the roadway will be classified as “Long Side Sewer Lateral” and services located on the near side of the roadway will be classified as “Short Side Sewer Lateral”. Contractor shall draw his own conclusion as to the length of piping that may be needed. No extra payment will be made for PVC lateral service piping or sewer clean-outs.

REMOVE EXISTING SANITARY SEWER MANHOLE:

Payment for Bid Item “Remove Existing Sanitary Sewer Manhole” shall include excavation, removal of existing manhole, and KYDOT approved backfill.

SECTION 1.3 FIELD ENGINEERING

The ENGINEER will provide horizontal and vertical control prior to the beginning of construction.

The CONTRACTOR shall lay out his own work, lines, reference lines, measurements, levels, and grades, subject to the checking and directions of the OWNER.

SECTION 1.4 ABBREVIATIONS AND SYMBOLS

Abbreviations of standards, codes, and publications used within these Specifications are as follow:

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
KRS	Kentucky Revised Statutes
KY DOT	Kentucky Transportation Cabinet, Department of Highways, "Standard Specifications for Road and Bridge Construction"
NSF	National Sanitation Foundation

All references are to the latest available edition unless otherwise noted.

SECTION 1.5 SHOP DRAWINGS

The CONTRACTOR shall submit six (6) copies of the shop drawings to the ENGINEER for approval within fifteen (15) days after the award of the general contract. If such a schedule cannot be met, the CONTRACTOR may request in writing for an extension of time to the ENGINEER with a schedule of when they are to be submitted. This schedule must be approved by the ENGINEER prior to the second pay estimate.

Shop drawings shall be submitted on all materials used on this project. Each item of equipment proposed shall be a standard catalog product of an established manufacturer. The shop drawing shall give complete information on the proposed equipment. Each item of the shop drawings shall be properly labeled, indicating the intended service of the material, the job name, and CONTRACTOR's name.

The shop drawings shall be submitted to the ENGINEER with a letter of transmittal. The letter of transmittal shall list each item submitted along with the manufacturer's name. All

submittals shall have signatures by the CONTRACTOR certifying that they have reviewed and approved the submittals prior to submission to the ENGINEER.

No material or equipment shall be incorporated in the work without having previously been submitted to the ENGINEER for approval and having subsequently received approval in writing from the ENGINEER.

Approval rendered on shop drawings shall not be considered as a guarantee of measurements or building conditions. Where drawings are approved, said approval does not mean that drawings have been checked in detail; said approval does not in any way relieve the CONTRACTOR from his responsibility or necessity of furnishing material or performing work as required by the Contract Drawings and Specifications.

SECTION 1.6 PROJECT RECORD DRAWINGS

The CONTRACTOR shall accurately record the location of pipe runs, connections, meters, valves, hydrants, etc., and any uncharted utilities. These drawings shall be submitted to the ENGINEER before or with the final payment estimate.

SECTION 1.7 SECURITY

SECTION 1.7.1 PROTECTION OF EXISTING IMPROVEMENTS

Prior to commencing construction operations, the CONTRACTOR shall make all the provisions necessary to assure the protection of all existing improvements.

The CONTRACTOR shall thoroughly document the existing condition of all structures, landscaping, pavement, and improvements located in all locations where work may result in actual damage or in damage claims. The method of providing this documentation of existing conditions shall be video tape, and a complete tape or set of tapes shall be available to the OWNER and ENGINEER to help settle any disputes which may arise concerning work that is required to return property to its original condition or concerning property damage. This documentation shall be submitted to the ENGINEER prior to the first payment estimate.

Adequate protection shall be provided for all lawns, trees, shrubs, landscape work, fences, sidewalks, hydrants, utility poles, street, alley and driveway paving, curbs, storm sewers, ditches, headwalls, catch basins, surface inlets and all other improvements that are to remain in place. Such protection shall be provided as long as necessary to prevent damage from the CONTRACTOR's operations. Shrubs, bushes, small trees, and flowers which have to be removed shall be protected and replanted or replaced when the backfill is complete.

The CONTRACTOR shall exercise every precaution to prevent damage to property within and outside easements. He shall remove all debris and rock from the site and restore the ground surfaces, replace or repair all driveways, buildings, fences, retaining walls, culverts, drains, paving, sidewalks, etc., which were removed or damaged during construction to a condition as good as or better than existed before the construction.

The CONTRACTOR shall notify each property owner of his schedule to work in the easement on their property before he enters upon their property. Repair, restoration or replacement of any damaged or removed improvements shall be the obligation of the CONTRACTOR at no additional cost to the OWNER.

SECTION 1.7.2 PROTECTION OF TREES AND SHRUBS

The CONTRACTOR shall make every effort to preserve as many trees and shrubs as possible. Where branches of trees or shrubs interfere with the CONTRACTOR'S operations, they shall be protected by tying wherever possible. No limbs or branches shall be cut without written permission of the property owner. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

If his operations will not permit saving certain trees, the CONTRACTOR shall be wholly responsible for satisfying all claims for restoration or restitution resulting from their damage or removal. Trees may be removed only when the ENGINEER approves the cutting, based on information showing that the CONTRACTOR'S operations will be unduly restricted if the trees are not removed. The OWNER will attempt to obtain the right to cut trees in the easements which interfere with normal operations of the CONTRACTOR. Any trees whose stumps will not be removed shall be cut smoothly at the ground surface. The CONTRACTOR shall dispose of all trees and brush. Burning on the site will be permitted only if approved by the property owner and with a permit from the applicable regulatory agencies.

SECTION 1.7.3 DANGER SIGNALS AND SAFETY DEVICES

The CONTRACTOR shall make all necessary precautions to guard against damages to property and injury to persons. He shall put up and maintain in good condition sufficient red or warning lights at night, suitable barricades and other devices necessary to protect the public. In case the CONTRACTOR fails or neglects to take such precautions, the OWNER may have such lights and barricades installed and charge the cost of this work to the CONTRACTOR. Such action by the OWNER does not relieve the CONTRACTOR of any liability incurred under these Contract Documents.

SECTION 1.7.4 USE OF EXPLOSIVES

When the use of explosives is necessary, the CONTRACTOR shall observe all local, state and federal laws in purchasing and handling explosives. The CONTRACTOR shall take all necessary precautions to protect completed work, neighboring property, waterlines, or other underground structures. Where there is danger to structures or property from blasting, the charges shall be reduced and the material shall be covered with suitable timber, steel or rope mats.

The CONTRACTOR shall notify all owners of public utility property of his intention to use explosives at least eight hours before blasting is done close to such property. Any supervision or direction of the use of explosives by the ENGINEER does not in any way reduce the responsibility of the CONTRACTOR or his surety for damages that may be caused by such use.

SECTION 1.7.5 EXISTING UTILITIES

1) The CONTRACTOR shall notify all companies with existing utilities in the area prior to excavation. CONTRACTOR shall follow their procedures for crossing, repair, etc. of such utilities.

2) The appropriate utility companies shall be given five (5) working days advance notice before work is begun. Where revamping of facilities will be required, at least two weeks advance notice shall be given to the utility company in order to allow sufficient time for engineering work to be completed. On major revamps or relocations, longer notice may be necessary.

3) No blasting shall be done within 10 feet of a utility unless a representative of the affected utility company is present.

4) Cables, ropes or attachments of any sort shall not be attached to utility poles.

5) If damage to an existing utility should occur, the CONTRACTOR shall notify the appropriate utility company immediately.

SECTION 1.7.5.1 UNDERGROUND UTILITIES

The locations of existing underground structures are shown on the Drawings in an approximate way only. The CONTRACTOR shall verify the locations of these or any other underground structures and attempt to avoid damaging them. He shall make suitable arrangements with the utility or service company involved to cut and repair, remove and replace, abandon or relocate any structure so encountered.

The CONTRACTOR agrees to be fully responsible for any and all damages which might be caused by failure to locate and preserve any and all underground utilities.

The CONTRACTOR is advised to exercise caution in his operations in areas where the Drawings indicate the presence of a telephone conduit, gas line, or lines carrying hazardous material.

SECTION 1.8 TEMPORARY CONTROLS

SECTION 1.8.1 CONSTRUCTION CLEANING

The CONTRACTOR's cleanup operations shall be performed continuously during construction.

SECTION 1.8.2 DUST CONTROL

The CONTRACTOR shall make such provisions as are necessary for controlling all dust resulting from his operations at all times when such dust would, in any way, interfere with or cause any delay or other inconvenience to traffic, both vehicular and pedestrian, or have any detrimental effect upon the environment.

SECTION 1.8.3 EROSION AND SEDIMENTATION CONTROL

The CONTRACTOR shall exercise every reasonable precaution at all times to prevent the pollution of all streams. No partially completed item of work shall be left in a manner that will contribute to erosion during the period in which work on the item is suspended.

The CONTRACTOR shall comply with the applicable provisions of KRS Chapters 220 and 224 of the State Water Pollution Control Laws and other applicable statutes relating to the prevention or abatement of water pollution. He shall also comply with the requirements of any Federal or State agency which may have jurisdictional control over the land through which the project is constructed.

SECTION 1.9 TRAFFIC REGULATION

SECTION 1.9.1 INTERFERENCE WITH AND PROTECTION OF HIGHWAYS

The CONTRACTOR shall not close or obstruct any portion of any existing highway, street or alley without obtaining a written permit therefore from the proper authority, a copy of which shall be filed with the ENGINEER, prior to the closing or obstructing thereof.

The CONTRACTOR shall store, pile and confine in a satisfactory manner materials and equipment so as not to damage any highway, street, alley, sidewalk, grassed or loamed surface, building, fence or other property, either public or private, on or adjacent to the work.

SECTION 1.9.2 MAINTENANCE OF PUBLIC TRAVEL

Public travel shall be maintained undisturbed wherever and whenever possible. Detours shall be provided when so directed by the local officials or when required by the addenda. Emergency vehicles shall be provided access to the construction area at all times. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment at all times. The CONTRACTOR shall provide adequate signs, barricades, red lights, flagmen and watchmen and take all necessary precautions for the protection of the work and the safety of the public as specified and in accordance with applicable federal, state, and local regulations and in conformance to the Manual on Uniform Traffic Control Devices for Streets and Highways (US Department of Transportation, Federal Highway Administration, current edition).

SECTION 1.10 MATERIAL AND EQUIPMENT

All materials, unless explicitly specified otherwise, shall be new and unused.

All materials used shall be suitable for the application where installed and meet the requirements of the Division of Water of the Kentucky Natural Resources and Environmental Protection Cabinet.

SECTION 1.11 STORAGE AND PROTECTION

The CONTRACTOR shall provide a suitable storage area at no cost to the OWNER, and the CONTRACTOR shall be responsible for the protection of the stored materials until they are incorporated into the work.

SECTION 1.12 WASTEWATER BYPASSING

No wastewater bypassing will be allowed during the work unless a schedule has been approved by the Kentucky Division of Water and the U.S. Environmental Protection Agency pursuant to the terms of the KPDES permit.

Bypassing pumping of wastewater flows within the existing sanitary sewer shown is the Contractor's responsibility. Provide pumps, discharge pipework, protective pipe bridging measures, safety measures, etc., to convey wastewater around a sanitary sewer segment. The Contractor shall provide spare equipment, fuel, manpower, safety measures, etc., as necessary to insure the project has 24-hour protection against failure of bypass pump measures. Any discharge, and corresponding penalties, to surface water conveyances, backup of wastewater into customer facilities, or damages to customer operations are the Contractor's responsibility. No separate payment will be made for Bypass Pumping. The cost for Bypass Pumping, where required, shall be incidental to the cost of the work being performed.

SECTION 1.13 FINAL CLEANING

Final cleaning and dressing shall consist of removing all sediment and debris in the project area and shaping to the original ground lines or to the lines, grades, contours, or cross sections indicated on the Drawings. It shall also include filling with suitable materials all holes and depressions resulting from removal of structures or grubbing or other operations and shaping to conform to the surrounding ground. Where the CONTRACTOR's operations have resulted in filling existing ditches or clogging existing culverts, the CONTRACTOR shall reditch or clean culverts so as to return them to as good as or better condition than existed before the work began.

Before final acceptance of the work, the CONTRACTOR shall satisfactorily clean all areas within the limits of his operations including the street surfaces, walks, gutters, fences, lawns, private property and structures, leaving them in as neat, clean and usable conditions as originally found. He shall remove all structures from the site. He shall also remove organic matter and materials containing organic matter from all areas used by him during construction. All pipes or inlets shall be cleared of all scaffolding, sedimentation, debris, rubbish and dirt.

SECTION 1.14 REPAIR AND RESTORATION

All ground or paved surfaces or existing improvements that have been damaged or destroyed by the CONTRACTOR's operations shall be restored in accordance with these Specifications. Where bituminous or concrete materials and work are required, the CONTRACTOR shall conform also to the details on the Drawings and to requirements of the appropriate sections of KY DOT.

The repair of driveways, sidewalks, or other existing improvements shall return them to a condition as good as or better than existed prior to the beginning of the CONTRACTOR's operations.

All signs and mailboxes that will be affected by the CONTRACTOR's operations, whether they are shown on the Drawings or not, shall be removed and reinstalled by the CONTRACTOR. This work shall include the necessary removal and subsequent construction of the sign or mailbox foundation and of any other materials necessary to complete the reinstallation.

All surplus material, rock, trees, shrubs, concrete, asphalt, pipe, crushed stone, etc., that are not to be used in the CONTRACTOR's restoration operations shall be removed from the site and disposed of in an acceptable manner.

DIVISION 2 - SITEWORK

SECTION 2.1 SITE CLEARING

The area involved with new construction shall be cleared of all weeds, brush, briers, bushes, trees, stumps, and other protruding obstructions not designated to remain. In addition, all bushes, trees, roots, and stumps within the areas where either excavation or embankment is shown shall be grubbed except undisturbed stumps, roots, and nonperishable solid objects which will be a minimum of three feet below subgrade or slope of embankments. Stumps and nonperishable solid objects to be left under embankment shall not extend more than 6 inches above the ground line.

Work shall not be performed outside said work limits and the existing vegetation outside these limits shall not be disturbed unless authorized by the ENGINEER.

All materials resulting from clearing and grubbing shall be completely disposed of by the CONTRACTOR. In addition, any trees cut or pushed by the geotechnical exploration and remaining at either of the tank sites shall be disposed of by the CONTRACTOR. Any burning of perishable material shall be in conformity with regulations issued by the responsible state agency and in conformity with regulations established by local government agencies.

SECTION 2.2 EARTHWORK

SECTION 2.2.1 GENERAL

Earthwork shall include removing and satisfactorily disposing of materials or filling and compacting of materials, within the limits of the work, required for construction in accordance with these Specifications and in conformity with the elevations, typical sections, cross sections, and finish contour lines shown on the Drawings.

SECTION 2.2.2 PRODUCTS

All suitable material taken from excavation shall be used in the formation of embankment, subgrade, and for backfilling as indicated on the Drawings or as directed by the ENGINEER.

When the volume of excavation exceeds that required to construct embankments to the grades indicated on the Drawings, the excess shall be wasted off the project site at locations acquired by the CONTRACTOR at no expense to the OWNER. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be supplied from borrow sources at locations to be acquired by the CONTRACTOR subject to the approval of the ENGINEER.

Excavation and embankment quantities shown on the Drawings are for information only. The bidder shall make his own determination of the quantity involved when preparing his bid. The ENGINEER makes no warranty, either expressed or implied, regarding the accuracy of those quantities shown.

SECTION 2.2.3 EXECUTION

SECTION 2.2.3.1 EXCAVATION

Excavation shall extend from the original ground line to the lines and grades indicated on the Drawings. During the process of excavation, the grade shall be maintained so that it will be well drained at all times. When directed by the ENGINEER, temporary drainage ditches shall be installed to intercept or direct surface water which may affect work.

Rock, shale, hardpan, loose rock, boulders, or other materials unsatisfactory for subgrade shall be excavated to a minimum of 12 inches below designated elevation. Mulch, peat, matted roots or other yielding materials unsatisfactory for subgrade foundation shall be removed to provide a satisfactory foundation. The portion so excavated shall be refilled with suitable material in accordance with these Specifications.

Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 12 inches of the subgrade.

All loose or protruding rocks in the backslopes shall be removed to the lines or finish grades of the slopes. All cut and fill slopes shall be uniformly dressed to the slope, cross section and alignment indicated on the Drawings.

SECTION 2.2.3.2 EMBANKMENT

Where embankments are to be placed on natural slopes steeper than 15 percent, horizontal benches with a minimum width of 6 feet shall be constructed. These benches shall be refilled and compacted in accordance with these Specifications.

All areas where embankments are to be constructed shall be cleared and grubbed and debris subject to termite attack, rot, or corrosion shall be removed. Existing soils in these areas shall be reasonably dry and shall be precompacted by making a minimum of three overlapping runs, one being in the cross direction, with a vibrating roller or other equipment approved by the ENGINEER.

Embankment material shall be free of all organic matter, debris and refuse and shall be of uniform character. Embankment material shall contain no stones or rock fragments larger than 4 inches in the top 12 inches of the embankment.

Embankments of soil, soft shale, or gravel shall be placed in uniform horizontal layers not more than 6 inches in uncompacted depth. Each layer shall be compacted fully and uniformly to a minimum density or a percentage of the Standard Proctor Maximum as shown below (ASTM D-698 or AASHTO Standard Method T-99):

1. Under and within 10 feet of structures: 100%
2. Under streets and parking areas: 95%
3. Other embankment areas: 85%

Soils in embankments where 100% of Standard Proctor Maximum is required shall have a moisture content within ± 2% of optimum moisture when compacted. Soils in embankment where 95% of Standard Proctor is required shall have a moisture content within ± 4% of optimum when compacted.

Embankment material shall be allowed to air dry to the proper moisture as each layer is placed, if necessary, prior to compaction.

No embankment material shall be placed, spread, or rolled when it is frozen or thawing, or during excessively wet weather conditions. When work is interrupted by excessively wet weather, embankment operations shall not resume until the ENGINEER indicates that the moisture content and density of previously placed embankment are as specified.

SECTION 2.2.3.3 SUBGRADE

Preparation of the subgrade shall include compacting to the required density and shaping to conform to the required lines, grades, or cross sections. Subgrade shall be completed to within ± 0.1 foot of the elevations or grades indicated on the Drawings, except for street subgrade. Street subgrade shall conform to Sections 208.02 and 208.03 of KY DOT.

SECTION 2.3 EXCAVATING AND BACKFILLING FOR UTILITIES

SECTION 2.3.1 EXCAVATING

Excavating includes removing and disposing of all materials necessary to perform the work shown on the Drawings or as set out in these Specifications. It includes trenching to the alignment and depth as shown on the Drawings or as directed by the ENGINEER.

All suitable material taken from excavation shall be used for backfilling as indicated on the Drawings or as directed by the ENGINEER.

When the volume of excavation exceeds that required for backfill, the excess shall be wasted off the project site at locations acquired by the CONTRACTOR. When the volume of excavation is not sufficient for backfill, the deficiency shall be supplied from borrow sources at locations to be acquired by the CONTRACTOR subject to the approval of the ENGINEER.

Excavation shall extend from the original ground line to the lines and grades indicated on the Drawings. During the process of excavation, the grade shall be maintained so that it will be well drained at all times. When directed by the ENGINEER, temporary drainage ditches shall be installed to intercept or direct surface water which may effect work.

Material removed in excavation is to be unclassified. The following definitions are provided in order to determine the required dimensions of the trench (the dimensions are different for earth and rock cuts).

Earth excavation includes all clay, silt, loam, sand, gravel, slate, hard pan, river rock, stream beds, pavement rocks, and boulders less than 1/3 cubic yard in volume.

Rock excavation includes solid rock, boulders (greater than 1/3 cubic yard in volume), large stone, and concrete or masonry structures, or any other material which in the opinion of the ENGINEER shall require drilling and blasting.

SECTION 2.3.1.1 TRENCHES

Trenches shall be of such width and depth to provide adequate room for the construction or installation of the pipe to the lines, grades, and dimensions called for on the Drawings. The minimum width of the trench shall be as shown on the Drawings. The trench width may vary at the ground surface depending upon the depth and characteristics of the excavated material. Excavate the trench a minimum of six (6) inches below the plan grade. Take all precautions such as sheeting and bracing to provide a safe working environment. When blasting is necessary, transport, store, handle, and use all explosives in compliance with all applicable local, state and federal regulations.

Trenches are to be dug only so far in advance of pipe laying as is practical and shall be braced and drained where necessary to insure the safety and efficiency of the workmen. No extra payment will be made for the placing of bracing and draining of trenches. No trenches shall be opened up and allowed to remain open without construction work immediately following. Trenches shall not remain open overnight or at any time the CONTRACTOR is not on the job site.

Pipe shall not be strung out in advance of actual construction any further than can be laid during one working day.

SECTION 2.3.2 BACKFILLING

This section includes filling of excavated trenches and spaces around the pipe and structures to the original ground elevations, unless otherwise shown on the Drawings.

Backfilling of excavated trenches in an open cut shall commence as soon as possible after the pipe is laid and the jointing and alignment are approved, but not until authorized by the ENGINEER.

The following materials shall be used to backfill the trenches in accordance with and in the manner indicated by the requirements specified herein.

SECTION 2.3.2.1 OUTSIDE PAVEMENT

Backfill in trenches outside the limits of existing or proposed paved surfaces shall be made with materials as specified below:

Backfill in trenches for sewers and property service connections shall be made with selected materials which may be taken from the trench excavation except where stone backfill is required. The selected materials used from the top of the cradle or encasement up to a plane 2 feet above the exterior top of the pipe or structure shall contain no rock. The backfill materials used between the plane 2 feet above the top of the pipe or structure and one foot below the ground surface may include rock fragments from the excavation.

The backfill shall consist of unfrozen materials free from rocks, concrete pieces, or clay lumps more than one cubic foot in volume, roots, stumps, tin cans, rubbish, and other similar articles whose presence in the backfill could cause settlement. In backfill containing rock, no rock fragment shall be larger than one cubic foot in size and all rock fragments shall be mixed with sufficient earth materials to completely eliminate all voids, subject to the approval of the

ENGINEER. The amount of rock in the backfill shall not exceed 33% of the total backfill. The top one foot of backfill shall be free from rock fragments. Rock fragments and surplus earth materials not used in the backfill shall be removed from the site of work at no expense to the OWNER.

SECTION 2.3.2.2 UNDER PAVEMENT

SECTION 2.3.2.2.1 CITY MAINTAINED ROADWAYS

Backfill in trenches within the limits of existing or proposed paved surfaces or shoulders, and where defined in the Drawings or authorized by the ENGINEER, shall be made with stone material placed as shown on the Drawings. The stone shall meet the requirements of KY DOT Section 805 for Dense Graded Aggregate.

SECTION 2.3.2.2.2 STATE MAINTAINED ROADWAYS

Backfill in trenches within the limits of existing or proposed paved surfaces or shoulders in State Roadways, and where defined in the Drawings or authorized by the ENGINEER, shall be made with flowable fill as shown on the Drawings, unless approval of stone is granted by the ENGINEER. The backfill shall meet the requirements of KY DOT Section 601 for Flowable Fill.

SECTION 2.3.2.3 CONSERVATION OF ACCEPTABLE BACKFILL MATERIAL

The CONTRACTOR shall conserve all acceptable materials from the trench excavation for backfilling the trenches under this contract. In the event there is not enough acceptable materials to backfill the trenches, the CONTRACTOR shall furnish additional acceptable materials as necessary to completely backfill said trenches.

SECTION 2.3.2.4 BACKFILL FOR UNDERGROUND STRUCTURES

Backfill for underground structures shall consist of materials free from pieces of rock, concrete or clay lumps more than one cubic foot in volume, roots, stumps, tin cans, rubbish, frozen materials, and other similar articles whose presence in the backfill could cause settlement.

SECTION 2.3.2.5 BACKFILL AROUND IRON PIPES

Well compacted clay, sand and gravel or other material non-injurious to iron pipe shall be used for backfilling within 24 inches of any iron pipe. Cinders, rubbish or any other materials which would be injurious to iron pipe shall not be used in the backfill.

SECTION 2.3.2.6 EXECUTION

The specified backfill material shall be deposited in the trench uniformly under and on both sides of the pipe for the full width of the trench up to one-half the diameter of the pipe to provide uniform support.

Backfill materials for underground structures shall be placed in uniform layers not exceeding 12 inches for the full depth of the structure.

The specified backfill material shall be carefully deposited in uniform layers, a maximum of 6 inches thick, from the top of the trench foundation up to a plane one foot above the exterior top of the pipe. Each layer shall be leveled and evenly distributed on both sides of the pipe so as not to disturb, displace or damage the pipe before the next succeeding layer is placed. The remainder of the trench up to the ground surface shall be backfilled with materials which may be taken from the excavation or with stone material where required and place in uniform layers, a maximum of 8 inches thick.

If material for backfilling is dumped, bulldozed, or dropped from a height exceeding 5 feet above the previously placed backfill, its fall shall be broken by timber grillage or other means acceptable to the ENGINEER to prevent possible damage to the pipe.

SECTION 2.4 ROADWAY PAVING

Roadway paving shall consist of one or more courses of bituminous mixture constructed on the prepared foundation in accordance with the Drawings and/or these Specifications and KY DOT, Section 208, Section 303, and Section 400. The top of all manhole covers shall be flush with finished grade and drainage shall be away from the lid.

SECTION 2.4.1 RESHAPING AND COMPACTING

The Contractor shall reshape and compact in accordance with Section 208.05 of KY DOT.

SECTION 2.4.2 FINAL ROADWAY DRESSING

Final dressing shall be performed by hand work and machines to produce a uniform satisfactory finish to all parts of the roadway (including shoulders and ditches) and embankments. The roadbed, shoulders, ditches and slopes shall be shaped within reasonably close conformity to the specified lines, grades and cross sections. Rock cuts shall be scaled of all loose fragments and left in a neat, safe, and workmanlike condition.

The project will not be accepted and final payment will not be made until final dressing has been satisfactorily completed.

SECTION 2.5 PAVEMENT REPAIR

All paved surfaces shall be restored to a condition as good as or better than existed prior to the beginning of the work. The materials and dimensions shall be the same as the original paving unless otherwise indicated on the Drawings.

SECTION 2.5.1 ASPHALT PAVEMENT

Existing asphalt pavement shall be restored with No. 8 stone, bituminous base, and bituminous surface as required herein and as indicated on the Drawings and in accordance with appropriate State Highway Standards.

When surfacing cannot be immediately placed, the base course shall be of such compacted depth as to be level with adjacent undisturbed pavement. The roadway shall be open to traffic and maintained by the CONTRACTOR, including necessary additions of crushed stone, wedging of existing pavement, filling of potholes, dust control, etc., until the final surface course is placed.

Resurfacing or patching shall include a leveling course of asphaltic or bituminous concrete to eliminate irregularities in existing pavement. The final asphaltic or bituminous concrete course shall have a minimum compacted thickness of 4 inches unless otherwise indicated.

SECTION 2.5.2 CONCRETE PAVEMENT

Existing concrete pavement shall be restored in accordance with the Drawings or in accordance with the appropriate City and State Highway Road Standards. Concrete pavement shall be a minimum of six inches thick and shall be reinforced with the same material as the existing pavement or with 6-inch by 6-inch No. 4 wire mesh, whichever is greater. When cutting of the existing pavement is required, the CONTRACTOR shall make a smooth and even joint. The repaired section shall be connected to the pavement by approved methods for load transfer.

SECTION 2.6 WATER DISTRIBUTION SYSTEMS

SECTION 2.6.1 PIPE AND FITTINGS

All pipe for the water lines shall be Polyvinyl Chloride (PVC), unless otherwise noted on the Drawings.

SECTION 2.6.1.1 POLYVINYL CHLORIDE PIPE (PVC)

Where indicated on the Drawings, waterline shall be SDR21, Class 200 and shall meet the following ASTM standards: D-1784 (PVC Compound), D-3139 (Joint), F-477 (Gasket), and D-2241 (PVC Pipe).

The pipe shall be rated for use in 23oC (73oF) at the maximum internal pressure as follows: SDR 21 (200 PSI).

The pipe shall be extruded with only Type I, Grade I, 2000 PSI design stress compound meeting ASTM D-1784 standard. The pipe shall be designed to pass, without failure, the burst test as follows: SDR 21 (630 PSI) when conducted in accordance with ASTM D-1599.

The pipe shall be designed to pass, without failure, the sustained pressure test for 1000 hours for SDR 21 (420 PSI) when conducted in accordance with ASTM D-1598. A two-inch long sample ring shall not flake or disintegrate when immersed for 20 minutes in a sealed container of acetone when conducted in accordance with ASTM D-2152. (Swelling or softening is not considered a failure).

A two-inch long sample ring shall be able to be compressed between parallel plates to 40% of the outer diameter of the pipe without evidence of splitting, cracking or breaking.

The pipe shall meet the ASTM D-2241 impact resistance when tested in accordance with specification requirements section of method ASTM D-2444.

Pipe shall be furnished in standard laying lengths of 20 feet (plus or minus 1 inch) unless otherwise noted. Each pipe shall have an integral bell formed on the pipe end, and be designed to be at least as strong as the pipe wall (ASTM D2472).

An elastomeric gasket shall be designed with a retainer ring, which “locks” the gasket into integral bell groove and shall be installed at the point of manufacture. Gaskets shall be in conformance with ASTM F477.

All pipe shall carry a current certification of the National Sanitation Foundation (NSF) as acceptable to use in the transport of potable water. Each piece of pipe shall be clearly labeled to identify its size, pressure class, and manufacture date.

SECTION 2.6.1.2 SERVICE LINE

SECTION 2.6.1.2.1 COPPER

The line extending from the main line to the meter shall be Type K soft copper tubing meeting the requirements of ASTM B88.

Joints and couplings shall be Quick-Joint compression type.

SECTION 2.6.1.2.2 POLYETHYLENE

The line extending from the meter to the re-connection with the private residential service line shall be 200 psi, ¾” polyethylene tubing.

Polyethylene tubing shall be high density, DR 11, PE 4710 – pressure class 200 psi, in conformance with the requirements of ANSI/AWWA C901 and ASTM D2737 Standard Specification for Polyethylene (PE) Plastic Tubing.

Joint couplings for PE tubing shall be Quick-Joint compression type with solid stainless steel internal stiffeners inside ends of PE tubing.

SECTION 2.6.1.3 FITTINGS AND SPECIALS

Cast iron or ductile iron fittings shall be used with all types of pipe 3 inches and larger unless otherwise shown on the Drawings. Fittings shall be mechanical joint fittings with body thickness and radii of curvature conforming to AWWA C110. Rubber gasket joints shall be in accordance with AWWA C111. Fittings shall be cement mortar lined and asphaltic coated.

GripRing pipe restraints, as manufactured by Romac Industries, Inc., or approved equal, shall be used on all mechanical joint pipe and fittings. No extra payment will be made.

SECTION 2.6.1.4 ENCASEMENT PIPE

Encasement pipe, where required, shall be steel pipe of the diameter called for on the Drawings. Minimum wall thickness shall be as follows:

Carrier Pipe Size (Dia. – in.)	Encasement Pipe Nominal Wall Thickness (in.)
8 and under	0.188
10 - 12	0.250
14 - 16	0.281
18	0.312
20 - 22	0.344
24	0.375
30	0.469
32	0.500
36	0.532

Carrier pipe within encasement pipe shall be supported by casing shocks equal to APS Model SSI, or approved equal. Spacing and installation shall be as recommended by the manufacturer.

The annular space at the ends of the encasement pipe shall be sealed to prevent the entrance of groundwater, silt, etc., into the casing pipe. The seals shall be “pull-on” type constructed of synthetic rubber with stainless steel banding straps. Seals shall be Model “AC” as manufactured by APS, or approved equal.

SECTION 2.6.1.5 HANDLING PIPE AND ACCESSORIES

Care shall be exercised in loading and unloading pipe to prevent damage to the pipe. The degree of care in handling the pipe and accessories shall meet the recommendations of the pipe manufacturer.

Proper implements, tools, and facilities shall be provided to allow safe and convenient performance of the work. Under no circumstances shall pipe or accessories be dropped into the trench.

Pipe shall not be strung in advance any further than the length capable of being laid per day.

SECTION 2.6.1.6 PIPE INSPECTION PRIOR TO LAYING

All pipe shall be inspected upon arrival. If any portion of a shipment is found to be defective in diameter or thickness or found to have been contaminated with fuel exhaust, the entire shipment shall be removed from the project at the CONTRACTOR’S expense.

All pipe shall be inspected just prior to laying. Polyvinyl Chloride (PVC) pipe will be inspected for joint scratches, chipped ends and imperfect gasket seats. Any defective pipe will be rejected. All such rejected pipe shall be removed from the project immediately and replaced at the expense of the CONTRACTOR.

Usable portions of the rejected pipe may be salvaged upon approval of the ENGINEER. Minimum manufacturer's standards shall be met on all salvaged pipe.

SECTION 2.6.1.7 PIPE TO BE KEPT CLEAN

Care shall be exercised to keep the pipe clear of mud, dirt and debris before and during laying.

No pipe shall be laid in water, and precautions shall be taken to prevent trench water from entering the pipe.

SECTION 2.6.1.8 ALIGNMENT AND GRADE

All pipe shall be laid to the required grade and alignment. Any deviations from the alignment and grade shown on the Drawings shall be as directed by the ENGINEER.

Minimum cover over water mains shall be 36 inches. Holes shall be excavated at the bell and/or coupling locations to prevent load concentration on the bells and/or couplings.

Fittings and valves shall be placed at the locations shown on the Drawings with all joints centered, spigots home, and valve stems plumb.

Water lines shall be laid at least 10 feet horizontally from any existing or proposed sewer line. Should local conditions prevent a lateral separation of 10 feet, a water line may be laid closer than 10 feet to a sewer line if the elevation of the top (crown) of the sewer is at least 2 feet below the bottom (invert) of the water main. Wherever water lines must cross over sewers, the water line shall be laid at such elevation that the top of the sewer is at least 2 feet below the bottom of the water main.

SECTION 2.6.1.9 CUTTING PIPE

Cutting of pipe for the insertion of valve fittings shall be done in a manner recommended by the manufacturer so as to avoid damage to the pipe or coating.

SECTION 2.6.1.10 PERMISSIBLE DEFLECTION AT JOINTS

The degree of deflection of a pipe in either the horizontal or vertical planes shall not exceed the recommendations of the manufacturer.

SECTION 2.6.1.11 SERVICE CROSSINGS

All service line crossings shall be made by open cut excavation.

SECTION 2.6.1.12 OTHER PIPE JOINTS

In laying and joining other pipes, the recommendations of the manufacturer shall be followed closely. Any applicable provisions in this section applying to bell and spigot pipe shall be followed in laying and jointing other types of pipe and installing bell and spigot fittings to be used with other types of pipe.

SECTION 2.6.1.13 ENTRANCE/DRIVEWAY AND ROADWAY CROSSINGS

Water lines crossing under paved or concrete private driveways, outside of right-of-way or private easement areas, shall be free-bored unless permission is given in writing from the property owner to open-cut. Pavement shall be replaced as specified in Section 2.4 of the Specifications. No extra payment will be made for boring under private driveways or entrances.

All crossings under paved county roads/city streets may be open cut unless otherwise indicated on the Drawings. These crossings shall be made at the locations shown on the Drawings and shall conform to the Drawings.

SECTION 2.6.1.14 OTHER PIPE JOINTS

In laying and joining other pipes, the recommendations of the manufacturer shall be followed closely. Any applicable provisions in this section applying to bell and spigot pipe shall be followed in laying and jointing other types of pipe and installing bell and spigot fittings to be used with other types of pipe.

SECTION 2.6.1.15 TIE-IN TO EXISTING WATER LINE

Where indicated, tie-ins to the existing water lines shall be made under pressure with a tapping sleeve and tapping valve, unless otherwise noted. Payment for “Tie to Existing Water Line (Wet Tap)” shall include the tapping sleeve and valve. The tapping sleeve shall be the same or equal to Mueller Model H-615; the tapping valve shall be a Mueller Model T-2360 Resilient Wedge Gate Tapping Valve – Open Left (MJ X FL), or equal.

Tapping sleeves shall be of satisfactory working pressure and well supported independently from the pipe during the tapping. Thrust blocks shall be used as with any other fitting or appurtenance.

A thrust block shall be used as with any other fitting or appurtenance and shall meet the bearing area requirements shown on the details for that of a 90° bend.

In a dry tie-in to existing waterline situation, the water main may be cut and a tee and gate valve installed.

SECTION 2.6.1.16 PLUGGING DEAD ENDS

Standard plugs shall be inserted into the bells of all dead end fittings. Spigot ends shall be capped. Thrust blocking shall be provided at all dead ends of pipe that are capped or plugged.

SECTION 2.6.1.17 ANCHORAGE OF BENDS, TEES AND PLUGS

All pipe lines, all plugs capped, and bends exceeding 22-1/2º shall be securely anchored by thrust blocking as indicated on the Drawings. In addition, on 4" or larger pipe lines, all tees shall be similarly anchored. Thrust blocking shall be concrete of a mix not leaner than 1 part cement, 2 parts sand, 5 parts stone and a compressive strength not less than 2000 pounds per

square inch. Quantities of concrete required for different bends, tees, and valves shall be as indicated on the Drawings. If permitted by the ENGINEER, metal harness rods and pipe clamps of adequate strength to prevent movement may be used instead of concrete blocking.

Thrust blocks shall be placed so that the pipe and fitting joints will be accessible for repair.

SECTION 2.6.1.18 TRACER WIRE

Contractor shall install metallic tracer wire on all waterlines installed. Tracer wire shall read “CAUTION WATERLINE BELOW.” Cost shall be incidental to the price of the installed waterline.

SECTION 2.6.2 VALVES

Unless otherwise specified, valves shall be designed to operate continuously under a working pressure of not less than 200 pounds per square inch. Valves suitable for other working pressures shall be furnished as indicated on the Drawings. All valves shall be mechanically jointed unless otherwise specified. A valve/line marker as shown on the Drawings shall be erected at the location of each valve unless otherwise permitted by the ENGINEER.

SECTION 2.6.2.1 GATE VALVES AND BOXES

Gate valves shall be Mueller Resilient Wedge Gate Valves, or approved equal, tested to 250 psi in both directions and shell tested to 500 psi. The valve shall have mechanical joint ends unless otherwise stated on the Drawings.

Valve boxes shall be cast iron screw-type with lids marked "Water". A concrete collar shall be constructed around the box, as shown on the Drawings.

SECTION 2.6.2.2 VALVE/LINE MARKER

Fiberglass valve/line markers, Model CUM-375 as manufactured by Carsonite International Corporation, or approved equal, shall be constructed at all valves and road crossing locations, as well as any other location indicated on the Drawings. The markers shall be blue in color. No extra payment will be made for the markers.

SECTION 2.6.2.3 FIRE HYDRANTS

Fire Hydrants, where indicated on the Drawings, shall be 3-way Mueller Super Centurion Model 250 (A-423), or equal with a minimum 30” bury dimension. Hydrant shall be “safety yellow” in color.

SECTION 2.6.2.4 SETTING VALVES, VALVE BOXES, AND FITTINGS

All gate valves and any other valves designated shall be set in cast iron Buffalo type, two-piece screw type valve boxes unless otherwise indicated on the Drawings. Wrench nuts shall be readily accessible through the opening. Valve boxes shall be firmly supported and shall be

kept centered and plumb over the wrench nut of the gate valve. The box cover shall be flush with the surface of the finished pavement or any other level designated by the ENGINEER.

Check, altitude, pressure reducing, or air release valves or any other appurtenances required in connection with the mains or their appurtenances shall be installed in accordance with applicable specifications applying to other valve fittings, and subject to any further detailed requirement included on the Drawings.

SECTION 2.6.2.5 WATER SERVICE SETTING

The CONTRACTOR shall furnish and install service settings as indicated on the Drawings or as directed by the ENGINEER.

Each service connection in 5/8" x 3/4" size shall consist of the following units:

1) One corporation stop with AWWA thread. The minimum size of the stop shall be the same as the meter outlet. The corporation stop shall be tapped into the main line at an approximate angle of 45 degrees to vertical. A solid band brass tapping saddle shall be used on all lines. AWWA standards shall be used for threads.

2) A Mueller Coppersetter with ¾" Swivel x Compression 90 and ¾" CF X Swivel Nut Angle Meter Valve with Lockwing.

3) One ¾" water meter, Neptune E-Coder (R900I).

4) 18" x 18" PVC Meter box, SKU#00182001. Lid shall be 18" Vestal, 32-023, Cast Iron, Non-Recessed and Ring RMC-18L W/SN.

5) A sufficient length of 2" PVC pipe for encasement of the service line through road crossings where required by the ENGINEER.

The copper service line from the main to the meter shall be paid for separately.

SECTION 2.6.2.6 RE-CONNECT WATER SERVICE

Contractor shall re-connect all existing private services. Each re-connect shall include all equipment, labor, and materials to locate the existing service line and physically re-connect it to the newly constructed meter vault. Any piping required shall be polyethylene (PE) of the same size as the existing service line with a minimum pressure rating of 200 PSI.

SECTION 2.6.3 TESTING OF WATER DISTRIBUTION SYSTEMS

General:

The Contractor shall fully test all sections of water lines in accordance with the procedures to follow. All labor, materials and equipment used in testing procedures (including water) shall be furnished by the Contractor.

Hydrostatic Tests: After water pipe has been laid and backfilled, all newly laid pipe or any valve section thereof shall be subject to a hydrostatic pressure of not less than 200 psi or 1 ½ times anticipated line pressure, whichever is greater. The duration of the pressure tests shall be twenty-four (24) hours. Each valve section of pipe shall be slowly filled with water. While the pipe is being filled and before the application of the specified test pressure, all air shall be expelled from the pipe. Taps may be required at points of highest elevation. These taps are to be tightly plugged after completion of the test. The test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. The pump, pump connections, gauges, and all necessary apparatus and labor shall be furnished by the Contractor. The Contractor shall calibrate the gauges in the presence of the Engineer.

A test shall be made only after a part or all of the backfilling has been completed and at least 36 hours after the last concrete thrust block has been cast with high-early-strength cement or at least seven (7) days after the last thrust block has been cast using standard cement.

Any cracked or defective pipes, fittings, or valves discovered during hydrostatic pressure tests shall be removed and replaced with sound material and the test repeated until satisfactory to the Engineer. No payment shall be made for the removal and replacement of defective pipes and appurtenances.

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of the specified test pressure. Leakage shall not be measured by a drop in pressure in a test section over a period of time. See Table 1 below:

Table 1. Allowable leakage per 1000 ft of pipeline* - gphH

Avg. Test Pressure psi	NOMINAL PIPE DIAMETERBin.																	
	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54	60	64
450	0.48	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82	4.78	5.73	6.69	7.64	8.60	9.56	10.19
400	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.50	5.41	6.31	7.21	8.11	9.01	9.61
350	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.21	5.06	5.90	6.74	7.58	8.43	8.99
300	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.90	4.68	5.46	6.24	7.02	7.80	8.32
275	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.99	3.73	4.48	5.23	5.98	6.72	7.47	7.97
250	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56	4.27	4.99	5.70	6.41	7.12	7.60
225	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38	4.05	4.73	5.41	6.03	6.76	7.21
200	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19	3.82	4.46	5.09	5.73	6.37	6.80
175	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98	3.58	4.17	4.77	5.36	5.96	6.36
150	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76	3.31	3.86	4.41	4.97	5.52	5.88
125	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52	3.02	3.53	4.03	4.53	5.04	5.37
100	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.25	2.70	3.15	3.60	4.05	4.50	4.80

*If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size.

HCalculated on the basis of Eq.1.

Allowable leakage. No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

In inch-pound units,

$$L = \frac{SD/P}{133{,}200}$$

Where:

- L = allowable leakage, in gallons per hour
- S = length of pipe tested, in feet
- D = nominal diameter of the pipe, in inches
- P = average test pressure during the leakage test, in pounds per square inch (gauge)

SECTION 2.6.4 DISINFECTION OF WATER DISTRIBUTION SYSTEMS

Before being placed into general use, all pressure water piping and pipelines shall be flushed thoroughly, disinfected with chlorine and flushed again, in accordance with sound engineering practice. The method of disinfection shall consist of introducing a solution of hypochlorite or chlorine and water in controlled quantities into the piping system in such proportion that the chlorine water mixture entering the pipes shall contain at least 50 ppm of chlorine. Outlets in the piping shall be opened to insure complete distribution of the chlorine water mixture throughout the system to be disinfected. The mixture shall remain in the system long enough to destroy all non-spore forming bacteria. The period shall be at least 24 hours, and shall be for a longer length of time should the ENGINEER so direct. The chlorine residual at the end of the required retention time shall be at least 25 ppm at pipe extremities. If the residual is less than 25 ppm, the procedure shall be repeated until a 25 ppm residual after retention is obtained at all pipe extremities. For the purpose of determining compliance with this regulation, samples may be considered only if they have been analyzed by a laboratory certified by the Kentucky National Resources and Environmental Protection Cabinet, Division of Water.

Upon completion of the distribution process, the chlorine water mixture shall be flushed thoroughly from the system and samples for bacteriological examination shall be taken from the system to assure that complete disinfection has been accomplished. Arrangements for bacteriological sampling and examination shall be made by the CONTRACTOR with an approved laboratory. Water samples may be taken at such locations as representatives of the County Health Department shall select, and no mains shall be placed into service until the bacteriological quality and the approval Health Department is given. All expenses for testing, disinfecting, and flushing prior to approval and acceptance of the work shall be borne by the CONTRACTOR.

SECTION 2.7 SANITARY SEWAGE SYSTEMS

SECTION 2.7.1 PIPE

All pipe for the gravity sewer shall be Polyvinyl Chloride (PVC), unless otherwise noted on the Drawings.

SECTION 2.7.1.1 POLYVINYL CHLORIDE PIPE (PVC)

The PVC Gravity Sewer shall be SDR 35 and meet the requirements of ASTM D-3034 and ASTM D-1784. The pipe shall be joined with an integral bell rubber ring gasket allowing for contracting and expansion of each joint. Joint tightness shall be tested in accordance with ASTM D-3212. Pipe shall be furnished in 12.5 ft. or 20 ft. laying lengths.

SECTION 2.7.1.2 FITTINGS AND SPECIALS

Ductile iron fittings shall be used with all types of pipe 3" and larger unless otherwise shown on the Drawings. Fittings shall be mechanical joint fittings with body thickness and radius of curvature conforming to AIWA C110-87 rubber gasket joints and shall be in accordance with AIWA C111-85. Other fittings for pipes 2" and smaller shall be of the same material as the pipe.

SECTION 2.7.1.3 HANDLING PIPE AND ACCESSORIES

Care shall be exercised in loading and unloading pipe to prevent damage to the pipe. The degree of care in handling the pipe and accessories shall meet the recommendations of the pipe manufacturer.

Proper implements, tools, and facilities shall be provided to allow safe and convenient performance of the work. Under no circumstances shall pipe or accessories be dropped into the trench.

Pipe shall not be strung in advance any further than the length capable of being laid per day.

SECTION 2.7.1.4 PIPE INSPECTION PRIOR TO LAYING

All pipe shall be inspected upon arrival. If any portion of a shipment is found to be defective in diameter or thickness or found to have been contaminated with fuel exhaust, the entire shipment shall be removed from the project at the CONTRACTOR's expense.

All pipe shall be inspected just prior to laying. Polyvinyl chloride (PVC) pipe will be inspected for joint scratches, chipped ends and imperfect gasket seats. Any defective pipe will be rejected. All such rejected pipe shall be removed from the project immediately and replaced at the expense of the CONTRACTOR.

Usable portions of the rejected pipe may be salvaged upon approval of the ENGINEER. Minimum manufacturer's standards shall be met on all salvaged pipe.

SECTION 2.7.1.5 PIPE TO BE KEPT CLEAN

Care shall be exercised to keep pipe clear of mud, dirt and debris before and during laying.

No pipe shall be laid in water and precautions shall be taken to prevent trench water from entering the pipe.

SECTION 2.7.1.6 ALIGNMENT AND GRADE

All pipe shall be laid to the required grade and alignment. Any deviations from the alignment and grade shown on the Drawings shall be as directed by the ENGINEER.

Sewer lines shall be laid at least 10 feet horizontally from any existing water main. Should local conditions prevent a lateral separation of 10 feet, a sewer may be laid closer than 10 feet to a water main if the elevation of the top (crown) of the sewer is at least 2 feet below the bottom (invert) of the water main. Wherever sewers must cross under water mains, the sewer shall be laid at such elevation that the top of the sewer is at least 2 feet below the bottom of the water main.

Concrete anchors shall be provided, with spacing not over thirty-six (36) ft. center to center, on all gravity sewer lines having slopes greater than 20% and up to 35%.

Fittings shall be placed at the locations shown on the Drawings with all joints centered and spigots home.

SECTION 2.7.1.7 CUTTING PIPE

Cutting of pipe for the insertion of fittings shall be done in a manner recommended by the manufacturer so as to avoid damage to the pipe or coating.

SECTION 2.7.1.8 PLUGGING DEAD ENDS

Standard plugs shall be inserted into the bells of all dead end fittings.

SECTION 2.7.1.9 GRAVITY SEWER PIPE LAYING

After the trench is excavated to the subgrade specified, the pipe shall be supported with crushed stone or concrete as specified to provide a firm and satisfactory bed, hereafter referred to as the cradle, for the entire length of the sewer pipe barrel. Pipe of the designated class and required size shall be laid to form a closed joint with the next adjoining pipe bringing the inverts continuously to the required line and grade shown on the Drawings. The pipe shall be laid in an upstream direction, with bells upstream, unless otherwise permitted or directed.

SECTION 2.7.1.10 CRADLE, ENCASEMENT, AND CAP

The cradle, encasement, and cap, as required to support and/or protect the sewer pipe, shall be installed as specified herein.

A. Crushed Stone Cradle: Crushed stone cradle shall mean the placement of crushed stone from the subgrade level up to the springline of the pipe. The crushed stone shall be deposited in the trench to grade, allowing for the thickness of the pipe wall. Bell holes shall be dug to relieve the bells of all concentrated loads and to provide uniform support throughout the pipe section. For larger pipes, the crushed stone shall be shoveled and shovel-sliced beneath the haunches of the pipe to assure uniform support.

B. Crushed Stone Encasement: Crushed stone encasement shall mean the placement of additional crushed stone above the crushed stone cradle to a level at least 6 inches above the outside top of the pipe. The additional stone shall be placed in such manner to prevent damage to the pipe.

C. Concrete Cradle: Where a concrete cradle is required as additional support for the sewer pipe, or if the pipe will have less than 2 feet of vertical clearance above an existing or proposed storm drain or utility conduit, a concrete cradle shall be installed. The length of the concrete cradle shall be as shown on the Drawings or 2 feet beyond the outside edge of the underlying storm drain or utility conduit. The pipe shall be laid to line and grade, and shall be supported on concrete blocks, bricks or saddles set to prevent both vertical and lateral movement of the pipe. The use of wooden blocks will not be permitted. Concrete shall be placed around the pipe up to the springline of the pipe. Proper bracing shall be provided to prevent displacement of the sewer pipe during placing of concrete.

D. Concrete Cap: Where shown on the Drawings or where the sewer pipe to be laid will have less than 2 feet of vertical clearance below an existing or proposed storm drain, utility conduit, ditch, or channel, or if it is within street right-of-way and will have less than 4 feet of cover, a concrete cap shall be installed. The length of the concrete cap shall be as shown on the Drawings or 2 feet beyond the outside edge of the storm drain or utility conduit, or 2 feet beyond the point where the pipe attains 30 inches of cover in natural ground or 4 feet of cover in right-of-way, or as directed by the ENGINEER. The sewer pipe shall be laid and supported on a crushed stone cradle, and concrete shall be placed around the pipe and at least 6 inches above the top of the pipe for the full trench width. Proper bracing shall be provided to prevent displacement of the pipe during placing of the concrete.

E. Concrete Encasement: Where shown on the Drawings or where conditions exist requiring additional pipe protection (stream crossings, ditch crossings, or poor soil condition), pipes shall be encased in concrete, as determined by the ENGINEER. The length of the concrete encasement shall be at least 2 feet beyond the point where additional pipe protection is required, as shown on the Drawings, or as directed by the ENGINEER. The sanitary sewer pipe shall be laid and supported as required for a concrete cradle, and concrete shall be placed around the pipe 6 inches either side of it and up to at least 6 inches over the top of the pipe. Proper bracing of the pipe shall be provided to prevent displacement of the sewer pipe during placing of concrete.

SECTION 2.776.1.11 JOINTING

All jointing shall be watertight and any leaks or defects discovered shall be immediately repaired to the satisfaction of the ENGINEER. Any pipe which has been disturbed after being laid shall be taken up, the joints cleaned, and the pipe properly relaid. Damaged or unsound pipe or fittings will be rejected. Before jointing the pipe, all lumps, blisters, excess coating material, and any dirt or sand shall be removed from the bell and spigot ends of pipes. Any superfluous material inside the pipe shall be removed by means of an approved follower or scraper after joints are made.

Factory-made joint materials shall be utilized. Installation shall be accomplished in strict accordance with the manufacturer's recommendations and with approval from the ENGINEER.

In no case shall water be allowed to rise in or above the pipe before the joint has become thoroughly set. No walking on or working over the pipe after they have been laid, except as may be necessary in placing and compacting the backfill, will be permitted until they are covered with backfill to a depth of 24 inches.

SECTION 2.7.2 SEWER APPURTENANCES

SECTION 2.7.2.1 MANHOLES

Manholes shall be constructed of concrete, either poured or precast, as indicated on the Drawings. Manhole sections shall be jointed so as to be watertight by means of two (2) confined O-Ring rubber gaskets and Conwrap type joint seal conforming to the applicable provisions of ASTM C361 and ASTM C443. Openings adjacent to the sewer pipe connection shall be mortared so as to be watertight.

The outside surface of concrete manholes shall be coated with a layer of bitumastic, 10 mils dry thickness. Wall thickness shall be as specified on the Drawings.

SECTION 2.7.2.1.1 PRECAST MANHOLES

Precast manholes shall be constructed of 4,000 psi reinforced concrete. Reinforcing shall be as specified in ASTM C478.

Components of the manhole shall be free of fractures, cracks, and undue roughness. Concrete shall be free of defects which indicate improper mixing or placing, and surface defects such as honeycomb or spalling. Cracks or broken ends due to improper handling will not be acceptable. No lift holes will be allowed, except in riser and corbel sections. These holes shall not penetrate the wall.

SECTION 2.7.2.1.2 MANHOLE STEPS

Manhole steps shall be constructed of plastic coated #3 reinforcing bars. The coating shall be molded to a shape approved by the ENGINEER. The steps shall be built into the walls so as to form a continuous vertical ladder with a maximum distance of 12 inches between steps when the manhole is constructed.

SECTION 2.7.2.1.3 MANHOLE FRAMES AND COVERS

Manholes frames and covers shall be in accordance with the requirements shown on the Drawings. They shall conform to ASTM Specifications A48, and shall be of 30,000 psi tensile strength and of such quality and composition as will make the metal of the casting strong, tough, and of even grain. They shall be smooth, free from scale, lumps, blisters, and sand holes. No plugging or filling will be allowed. The words "SANITARY SEWER" shall be cast in the cover so as to be plainly visible. The manhole frames and covers shall have the bearing surfaces machined to prevent rocking, shall have a protective coating of black paint, and shall be set so that the top of the cover is flush with the finished grade. Manholes located in paved roadways shall also have drainage away from the lid. Watertight manhole covers shall be installed where indicated and shall be of the type shown on the Drawings.

SECTION 2.7.2.1.4 BASE

The floor and invert of all manholes shall be built of concrete. Base sections shall be constructed upon a firm stabilized foundation. Inverts shall be constructed as shown on the Drawings and shall be of the same size and shape as the connected pipe. Steep slopes outside the invert channels shall be avoided. Changes in size and grade shall be made gradually and evenly. Changes in the direction of the sewer and entering branch or branches shall have a true curve of as large a radius as the size of the manhole will permit. Invert surfaces shall be smooth.

SECTION 2.7.2.2 BRANCHES AND FITTINGS

Branches and fittings shall be provided and laid as and where directed. T-branches and Y-branches, placed in the sewer for property service connections, shall be located by the CONTRACTOR, as directed by the ENGINEER. Minimum depth of lateral lines at the property line shall be at least 42”.

SECTION 2.7.2.3 DETECTABLE TAPE

CONTRACTOR shall install a strip of Line Guard II detectable tape, tied directly around the end of all lateral pipes and extended vertically to a point 6" above ground level, as shown on the Drawings. An additional strip of tape shall be placed 6" beneath the surface and horizontally above all lateral lines, extending from the centerline of the trunk sewer to the end of each lateral. The tape shall bare the words "CAUTION – SEWERLINE BELOW" and be green in color. On the back of the tape, CONTRACTOR shall write the exact depth from the ground surface to the top of the lateral pipe with a permanent type felt tip marking pen. Cost of the tape shall be considered incidental to the price of the lateral line.

SECTION 2.7.2.4 STUBS

Stubs for future sewer pipe shall be installed as indicated on the Drawings. If the specified length of the stub is exceeded, there will be no additional cost to the OWNER unless the extra length is ordered by the ENGINEER. Existing sewer pipe stubs shall be removed as required but only when directed by the ENGINEER.

SECTION 2.7.2.5 CLEANOUTS

Cleanouts shall be extended to finished grade and capped with a cleanout plug in accordance with the details and at all sewer service connection reinstatement locations.

Pipe shall be 4" PVC.

A 4" thick concrete pad, 24" square, with the cleanout lid sections, shall be provided around each cleanout.

SECTION 2.7.2.6 STOPPERS AND BULKHEADS

Open ends of pipe shall be sealed with stoppers, cemented into place in an acceptable manner using a rubber gasket between the stopper and socket. Stoppers shall be installed in a manner that will keep water from filtrating into the system and shall be secured to retain the internal pressure developed during testing of the sewers. All openings to the pipelines shall be satisfactorily protected from the entrance of earth, water, or other material. If a temporary bulkhead is constructed to prevent sewage from backing into the trench excavation or to prevent foreign material from entering the sewer from the new sewer trench, the CONTRACTOR shall be responsible for reconstructing, repairing, or replacing those portions of the existing sewers removed or damaged by his operations.

SECTION 2.7.3 TESTING GRAVITY SEWER

The CONTRACTOR shall fully test all sections of gravity sewer lines in accordance with the procedures to follow. The CONTRACTOR shall be responsible for certifying to the ENGINEER and OWNER that the gravity sewer lines meet the allowable air limits. Where it is deemed necessary by the ENGINEER, the CONTRACTOR may be directed to use a specific testing procedure and assume responsibility for the results thereof.

SECTION 2.7.3.1 AIR TEST PROCEDURE

All branch fittings and ends of lateral stubs shall be securely plugged at each manhole. All stoppers shall be adequately braced when required.

Air shall be slowly supplied to the plugged pipe line until the internal air pressure reaches 4.0 pound per square inch or 4.0 pounds per square inch greater than the average back pressure of any ground water that may submerge the pipe. At least two minutes shall be allowed for temperature stabilization before proceeding further.

The rate of air loss shall then be determined by measuring the time interval required for the internal pressure to decrease from 3.5 to 2.5 pounds per square inch.

The pipe line shall be considered acceptable if the time interval for the 1.0 psi pressure drop is not less than the holding time listed in the following table:

SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP
FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

1 Pipe Diameter (in.)	2 Minimum Time (min:sec)	3 Length For Minimum Time (ft)	4 Time for Longer Length (sec)	Specification Time for Length (L) Shown (min:sec)							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46

SECTION 2.7.3.2 DEFLECTION TEST

The CONTRACTOR shall perform deflection tests on all gravity sewers using flexible pipe. The test shall be conducted after the final backfill has been in place at least 30 days. No pipe shall exceed a deflection of 5%. If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95% of the inside diameter of the pipe. The test shall be performed without mechanical pulling devices. Each manhole shall be tested for watertightness. If any section of pipe exceeds the allowable deflection, that section shall be replaced by the CONTRACTOR with no expense to the OWNER.

SECTION 2.7.3.3 VACUUM TESTING

All manholes shall be vacuum tested as follows:

All lifting holes and exterior joints shall be filled and pointed with an approved non-shrinking mortar.

Manholes are to be tested immediately after assembly and before backfilling. No standing water shall be allowed in the manhole excavation which may affect the accuracy of the test.

All pipes and other openings into the manhole shall be suitably plugged in such a manner as to prevent displacement of the plugs while the vacuum is drawn.

Installation and operation of vacuum equipment and indicating devices shall be in accordance with equipment Specifications and instructions provided by the manufacturer.

The test head may be placed in the cone section of the manhole. The rim-cone joint is not usually tested.

A vacuum of 10 inches of mercury shall be drawn. The time for the vacuum to drop to 9 inches of mercury shall be recorded.

Acceptance for 4-foot diameter manholes shall be defined as when the time to drop to 9 inches of mercury meets or exceeds the following:

Manhole Depth	Diameter	Time to Drop 1" Hg
10 ft. or less	4 ft.	60 seconds
10 ft. to 15 ft.	4 ft.	75 seconds
15 ft. to 25 ft.	4 ft.	90 seconds

For manholes 5 ft. in diameter add an additional 15 seconds and for manholes 6 ft. in diameter, add an additional 30 seconds to the time requirements listed in the table above for four foot diameter manholes.

SECTION 2.8 FORCE MAIN SYSTEMS

SECTION 2.8.1 PIPE AND FITTINGS

All pipe for the force main shall be Polyvinyl Chloride (PVC), unless otherwise noted on the Drawings.

SECTION 2.8.1.1 POLYVINYL CHLORIDE PIPE (PVC)

Polyvinyl Chloride Pipe shall be Class 200 except where otherwise noted and shall meet the following ASTM standards: D-1784 (PVC Compound), D-3139 (Joint), F-477 (Gasket), and D-2241 (PVC Pipe).

The pipe shall be rated for use in 23oC (73oF) at the maximum internal pressure as follows: SDR 21 (200 PSI).

The pipe shall be extruded with only Type I, Grade I, 2000 PSI design stress compound meeting ASTM D-1784 standard. The pipe shall be designed to pass, without failure, the burst test as follows: SDR 21 (630 PSI) when conducted in accordance with ASTM D-1599.

The pipe shall be designed to pass, without failure, the sustained pressure test for 1000 hours for SDR 21 (420 PSI) when conducted in accordance with ASTM D-1598. A two-inch long sample ring shall not flake or disintegrate when immersed for 20 minutes in a sealed container of acetone when conducted in accordance with ASTM D-2152. (Swelling or softening is not considered a failure).

A two-inch long sample ring shall be able to be compressed between parallel plates to 40% of the outer diameter of the pipe without evidence of splitting, cracking or breaking.

The pipe shall meet the ASTM D-2241 impact resistance when tested in accordance with specification requirements section of method ASTM D-2444.

All PVC pipe shall be NSF approved, white in color, and marked in accordance with ASTM D-1784 standard.

Pipe shall be furnished in 20’ or 40’ laying lengths.

SECTION 2.8.1.2 FITTINGS

Cast iron or ductile iron fittings shall be used with all types of pipe 3 inches and larger unless otherwise shown on the Drawings. Fittings shall be mechanical joint fittings with body thickness and radii of curvature conforming to AWWA C110 or AWWA C153. Rubber gasket joints shall be in accordance with AWWA C111. Fittings shall be cement mortar lined and asphaltic coated.

SECTION 2.8.1.3 HANDLING PIPE AND ACCESSORIES

Care shall be exercised in loading and unloading pipe to prevent damage to the pipe. The degree of care in handling the pipe and accessories shall meet the recommendations of the pipe manufacturer.

Proper implements, tools, and facilities shall be provided to allow safe and convenient performance of the work. Under no circumstances shall pipe or accessories be dropped into the trench.

SECTION 2.8.1.4 PIPE INSPECTION PRIOR TO LAYING

All pipe shall be inspected upon arrival. If any portion of a shipment is found to be defective in diameter or thickness or found to have been contaminated with fuel exhaust, the entire shipment shall be removed from the project at the CONTRACTOR’s expense.

All pipe shall be inspected just prior to laying. Any defective pipe will be rejected. All such rejected pipe shall be removed from the project immediately and replaced at the expense of the CONTRACTOR.

Usable portions of the rejected pipe may be salvaged upon approval of the ENGINEER. Minimum manufacturer's standards shall be met on all salvaged pipe.

SECTION 2.8.1.5 PIPE TO BE KEPT CLEAN

Care shall be exercised to keep the pipe clear of mud, dirt and debris before and during laying.

No pipe shall be laid in water, and precautions shall be taken to prevent trench water from entering the pipe.

SECTION 2.8.1.6 ALIGNMENT AND GRADE

All pipe shall be laid to the required grade and alignment. Any deviations from the alignment and grade shown on the Drawings shall be as directed by the ENGINEER.

Minimum cover over force mains shall be 42 inches. Holes shall be excavated at the bell and/or coupling locations to prevent load concentration on the bells and/or couplings.

Fittings and valves shall be placed at the locations shown on the Drawings with all joints centered, spigots home, and valve stems plumb.

Sewer force main shall be laid at least 10 feet horizontally from any existing or proposed water line. Should local conditions prevent a lateral separation of 10 feet, a sewer line may be laid closer than 10 feet to a water line if the elevation of the top (crown) of the sewer is at least 2 feet below the bottom (invert) of the water main. Wherever sewer lines must cross under water mains, the sewer line shall be laid at such elevation that the top of the sewer is at least 2 feet below the bottom of the water main.

SECTION 2.8.1.7 CUTTING PIPE

Cutting of pipe for the insertion of valve fittings shall be done in a manner recommended by the manufacturer so as to avoid damage to the pipe or coating.

SECTION 2.8.1.8 PERMISSIBLE DEFLECTION AT JOINTS

The degree of deflection of a pipe in either the horizontal or vertical planes shall not exceed the recommendations of the manufacturer.

SECTION 2.8.1.9 OTHER PIPE JOINTS

In laying and joining other pipes, the recommendations of the manufacturer shall be followed closely. Any applicable provisions in this section applying to bell and spigot pipe shall be followed in laying and jointing other types of pipe and installing bell and spigot fittings to be used with other types of pipe.

SECTION 2.8.1.10 ANCHORAGE OF BENDS, TEES (WYES), AND PLUGS

All pipe lines, all plugs capped, and bends exceeding 22-1/2o shall be securely anchored by thrust blocking as indicated on the Drawings. In addition, on 4" or larger pipe lines, all tees shall be similarly anchored. Thrust blocking shall be concrete of a mix not leaner than 1 part cement, 2 parts sand, 5 parts stone and a compressive strength not less than 2000 pounds per square inch. Quantities of concrete required for different bends, tees, and valves shall be as indicated on the Drawings. If permitted by the ENGINEER, metal harness rods and pipe clamps of adequate strength to prevent movement may be used instead of concrete blocking.

SECTION 2.8.1.11 TRACER WIRE

Contractor shall install #10 bare copper tracer wire on all waterlines installed. Cost shall be incidental to the price of the installed sewer force main.

SECTION 2.8.1.12 TIE-INS TO EXISTING MANHOLES

Tie-ins to existing manholes shall be constructed where indicated on the Drawings. The opening to be made in the existing manhole shall be created by a method approved by the ENGINEER and shall be no larger than required for passage of the pipe. The pipe shall be supported by tamped bedding, the degree of compaction of which is subject to approval by the ENGINEER. The space between the pipe and manhole wall shall be grouted so as to be watertight. When connections enter the existing manhole at an elevation greater than 2 feet (24 inches) above the invert of the manhole, the use of a wye and piping installed vertically down the wall of the manhole, as shown on the Drawings, shall be required. The connection area shall not be backfilled until the grouting has dried and has been approved by the ENGINEER.

On connections to existing manholes, the new line must be plugged and the plug restrained until the line is substantially complete and ready for acceptance by the OWNER. The plug may be removed to allow for use of a laser. Authorization for final connection must be received from the OWNER before the plug is removed for service. Twenty-four (24) hours notice to the OWNER is required prior to final connection.

SECTION 2.8.2 VALVES

Unless otherwise specified, valves shall be designed to operate continuously under a working pressure of not less than 150 pounds per square inch. Valves suitable for other working pressures shall be furnished as indicated on the Drawings. All valves shall be mechanically jointed unless otherwise specified.

SECTION 2.8.2.1 SETTING VALVES, VALVE BOXES, AND FITTINGS

All valves designated shall be set in Buffalo type, two-piece screw type valve boxes unless otherwise indicated on the Drawings. Wrench nuts shall be readily accessible through the opening. Valve boxes shall be firmly supported and shall be kept centered and plumb over the wrench nut of the gate valve. They shall be set vertically and properly adjusted so that the cover will be in the same plane as the finished surface of the ground or street.

Any appurtenances required in connection with the mains or their appurtenances shall be installed in accordance with applicable specifications applying to other valve fittings, and subject to any further detailed requirement included on the Drawings.

SECTION 2.8.3 TESTING OF FORCE MAIN SYSTEMS

All pipe shall be tested after backfilling has been completed and at least 36 hours after the last concrete thrust block has been cast with high-early-strength cement or at least 7 days after the last thrust block has been cast using standard cement. The newly laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure of not less than 200 psi. The duration of the pressure tests shall be two hours. Each valved section of pipe shall be slowly filled with water. While the pipe is being filled and before the application of the specified test pressure, all air shall be expelled from the pipe. Taps may be required at points of highest elevation. These taps are to be tightly plugged after completion of the test. The test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the ENGINEER. The pump, pump connections, gauges, and all necessary apparatus and labor shall be furnished by the CONTRACTOR. The CONTRACTOR shall calibrate the gauges in the presence of the ENGINEER.

Any cracked or defective pipes, fittings or valves discovered during hydrostatic pressure tests shall be removed and replaced with sound material and the test repeated until satisfactory to the ENGINEER. No payment will be made for the removal and replacement of defective pipes and appurtenances.

Allowable leakage shall not exceed 10 gpd per mile per inch diameter. Should the leakage exceed this amount the CONTRACTOR shall, at his own expense, locate and repair the defective joint pipes or settings until the leakage is within the specified allowance.

SECTION 2.9 SEEDING

All established grassed areas shall be restored by seeding. The disturbed areas shall be sown at a rate of three (3) pounds per 1000 square feet with an approved grade of seed in a mixture as follows:

50% Kentucky Blue Grass (Poa pratensis)
35% Creeping Red Fescue (Festuca rubra)
10% Red Top (Agrostis alba)
5% White Dutch Clover (Trifolium repens)

Seed shall be well raked or boarded into the soil.

SECTION 2.9.1 SURFACE PREPARATION FOR SEEDING

The seed bed shall be loosened to a depth of three (3) inches and shaped to a smooth even surface and shall be graded to an elevation so the seeded, or inplace, elevation of the sod shall be flush with adjacent turfed areas, pavements, curbs or other structures except when directed otherwise by the ENGINEER.

Fertilizer and limestone shall be applied uniformly at the rates specified and shall be harrowed, raked, or otherwise incorporated into the soil. The bed, when dry, shall be moistened to the loosened depth.

SECTION 2.9.2 FERTILIZER AND LIME

Agricultural limestone shall be applied at the rate of 100 pounds per 1000 sq. ft. and 10-10-10 agricultural fertilizer, or equivalent, shall applied at the rate of 50 pounds per 1000 sq. ft.

SECTION 2.9.3 MULCHING MATERIAL

Unless otherwise permitted by the ENGINEER, vegetable materials for mulching shall be wheat, oat, barley, or rye straw only. All material shall be reasonably free from weeds, seeds, foreign materials, and other grasses and chaff, and shall contain no Johnson grass. The straw shall be reasonably bright in color and shall not be musty, moldy, caked, or of otherwise low quality. It shall be dry on delivery. Unless otherwise specified, the bituminous material to be used for "tying down" straw mulch shall be a slow setting emulsified asphalt. It shall be non-toxic to plants.

Mulching material shall be uniformly applied to approximately 2 inches loose depth (approximately 2 tons per acre). Bituminous material for tying down the straw shall be applied at the rate of 250 gallons per acre.

SECTION 2.9.4 MULCH AND NETTING

Mulch and netting shall be used adjacent to (within 3 feet of) pavements and other areas designated by the ENGINEER. Mulch material used under netting may be either plain or bituminous treated, unless otherwise directed, and shall be uniformly applied to approximately 2 inches loose depth (approximately 2 tons per acre).

SECTION 2.9.5 GUARANTEE

An inspection to determine the acceptability of seeding will be made by an authorized representative of the OWNER no less than 3 months but not more than 6 months after completion of the entire project, except that the ENGINEER may delay the inspection when conditions are such that the acceptability of the seeding cannot be determined at the end of the 6 month period. The CONTRACTOR shall guarantee, at the time of this inspection, a minimum of 150 live seedings representative of the specified seed mixture per square foot on at least 90% of each seeded area, with no vacant areas larger than 250 sq. ft. each. This guarantee shall apply to all permanent seeding performed in conjunction with the project, regardless of the type protection used or the season in which the seeding was performed.

When the seeding does not meet the guarantee requirements at the time of the inspection, the CONTRACTOR will be advised of the amount and location of additional work deemed necessary. Additional work required may include preparation of a new seedbed, refertilizing, reseeding, remulching, or any erosion control items that were originally required. The CONTRACTOR shall perform all additional work as soon as favorable working conditions occur after being advised of the additional work required. The additional work and materials required to fulfill the guarantee requirements will not be paid for, except as hereinafter provided for unavoidable damage.

DIVISION 3 - CONCRETE

SECTION 3.1.1 GENERAL

This section shall include all concrete work except thrust blocking as shown on the Drawings or called for in these Specifications and shall include the fabrication and furnishing of all steel bars and wire mesh of the size, shape and length indicated. Concrete shall be Class "A".

SECTION 3.1.2 PRODUCTS

Cement: Portland Cement shall conform to the requirements of ASTM C150 (KY DOT 801) for Type I, or Type III where high-early-strength is required.

Fine Aggregates: Fine aggregates for use in Portland cement concrete shall meet the requirements of KY DOT Section 804.03.

Coarse Aggregates: Coarse aggregates for portland cement concrete shall meet the requirements of Sections 805 of KY DOT.

Water: Water used in portland cement concrete shall be clean and free from injurious oils, organic materials, alkalies, or other deleterious substances, and shall conform to KY DOT Section 803.

Reinforcing Steel: Reinforcing steel shall meet the requirements of Section 602 of KY DOT.

SECTION 3.1.3 EXECUTION

Proportioning, Mixing and Construction Methods: All concrete placed on this project shall be in accordance with KY DOT Section 601 for Class "A" Air Entrained Concrete.

Standard Sanitary Sewer Bid Item Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

S LATERAL SHORT SIDE This bid item description shall apply to all service lateral installations of every size up to and including 6 inch, except those lateral bid items defined as "Special". This item includes the specified piping material, main tap tee, bends, clean outs, labor, equipment, excavation, backfill, testing, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready for use. This bid item is to pay for lateral installations where both ends of the lateral connection are on the same side of the public roadway, or when an existing lateral crossing a public roadway will remain and is being extended, reconnected, or relocated with all work on one side of the public roadway centerline as shown on the plans. The length of the service lateral is not to be specified and shall not be restricted to any minimum or maximum length. Payment shall be made under this item even if the lateral crosses a private residential or commercial entrance; but, not a public roadway. Private or commercial

entrances shall not be considered a public roadway in defining payment under this item. The contractor shall draw his own conclusions as to the length of piping that may be needed. No additional payment will be made for rock excavation or for bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

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

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

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

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

when complete.

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

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

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

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

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

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

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

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

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

S PIPE This description shall apply to all PVC and ductile iron gravity sewer pipe bid items of every size and type 8 inches internal diameter and larger, except those bid items defined as "Special". This item includes the pipe specified by the plans and specifications, all fittings (including, but not limited to,

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

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

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

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

S STRUCTURE REMOVAL This item is to be used to pay for removal of larger above or below ground sewer structures such as air release/vacuum valve vaults, pump stations, tanks, and etc. Payment under this time shall not be limited to size or scope; however, structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to sewer

construction, (i.e., removal of standard air release/vacuum valves and their structure up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted backfill for removal of the structure and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

Kentucky Transportation Cabinet

Highway District 11 (1)

And

_____(2), Construction

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

Groundwater protection plan

For Highway Construction Activities

For

Construct turn lanes, sidewalks, curve improvements and storm drainage system along KY 1487 (1)

Project: PCN ## -

Project information

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

1. Owner – Kentucky Transportation Cabinet, District 11 (1)

2. Resident Engineer: (2)

3. Contractor name: (2)
   Address: (2)

   Phone number: (2)
   Contact: (2)
   Contractors agent responsible for compliance with the KPDES permit requirements (3):

4. Project Control Number (2)

5. 603 Railroad Ave, Manchester KY 40962 (1)

6. Latitude/Longitude (project mid-point) 36/52/22 -83/53/21 (1)

7. County: Knox (1)

8. Project start date (date work will begin): (2)

9. Projected completion date: (2)

KyTC BMP Plan for Project PCN ## - ####

A. Site description:

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

2. Order of major soil disturbing activities (2) and (3)

3. Projected volume of material to be moved: 2400 CUYD (1)

4. Estimate of total project area (acres): 3.42 (1)

5. Estimate of area to be disturbed (acres): 2.34 (1)

6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information. (1)

7. Data describing existing soil condition (1) & (2)

8. Data describing existing discharge water quality (if any): Roadway run off (1) & (2)

9. Receiving water name: Little Richland Creek(1)

10. TMDLs and Pollutants of Concern in Receiving Waters: N/A (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 : None required. (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.

2. Waste Materials

All waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in appropriate covered waste containers. Waste containers shall be removed from the project site on a sufficiently frequent basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the 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.

4. Spill Prevention

The following material management practices will be used to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff.

➢ **Good Housekeeping:**

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer
- Whenever possible, all of the product will be used up before disposing of the container
- Manufacturers' recommendations for proper use and disposal will be followed
- The site contractor will inspect daily to ensure proper use and disposal of materials onsite

➢ **Hazardous Products:**

These practices will be used to reduce the risks associated with any and all hazardous materials.

- Products will be kept in original containers unless they are not resealable
- Original labels and material safety data sheets (MSDS) will be reviewed and retained
- Contractor will follow procedures recommended by the manufacturer when handling hazardous materials
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed

The following product-specific practices will be followed onsite:

➢ **Petroleum Products:**

Vehicles and equipment that are fueled and maintained on site will be monitored for leaks, and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products onsite will be stored in tightly sealed containers, which are clearly labeled and will be protected from exposure to weather.

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

This project (will / will not) (3) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55 gallon capacity and larger.

- **Fertilizers:**

Fertilizers will be applied at rates prescribed by the contract, standard specifications or as directed by the resident engineer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

- **Paints:**

All containers will be tightly sealed and stored indoors or under roof when not being used. Excess paint or paint wash water will not be discharged to the drainage or storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

- **Concrete Truck Washout:**

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a shallow earthen wash basin will be excavated away from ditches to receive the wash water

- **Spill Control Practices**

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup**:**

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contract with a hazardous substance.

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

D. Other State and Local Plans

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

KyTC BMP Plan for Project PCN ## - ####

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.

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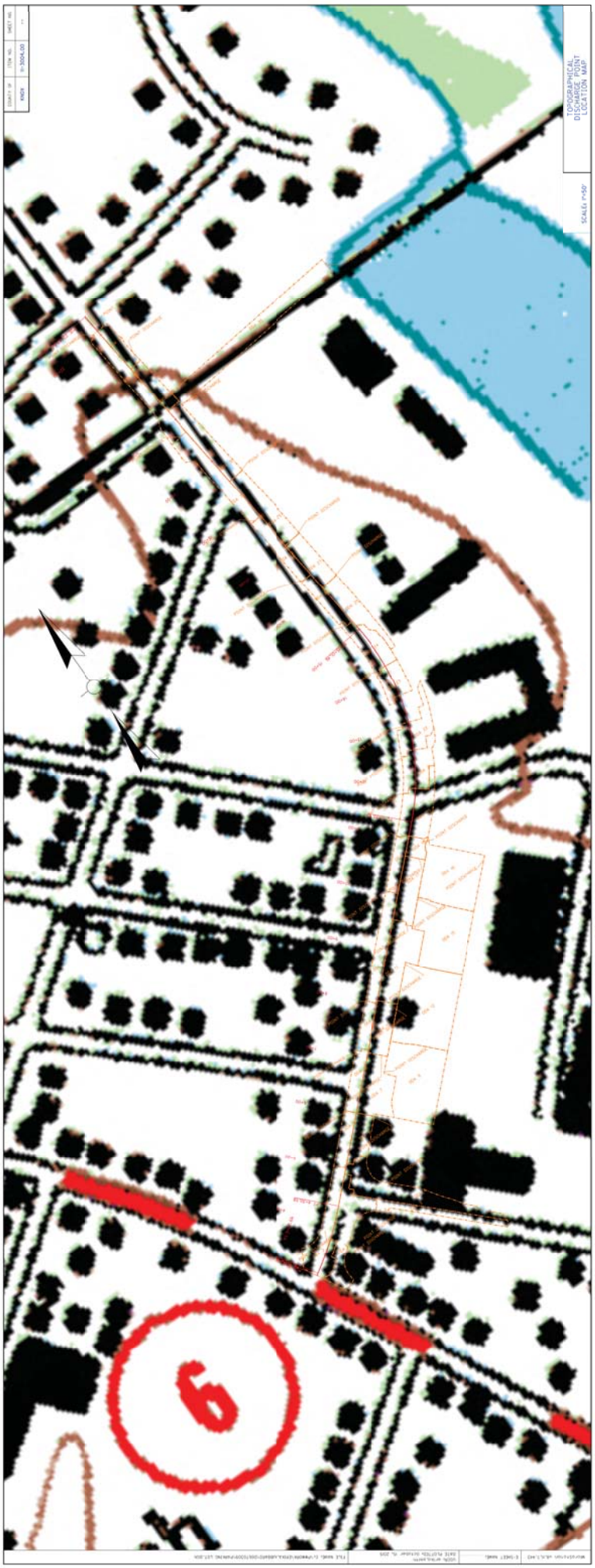
eNOI Transaction ID


TOPOGRAPHICAL
DRAINAGE PATTERN
LOCATION MAP
SCALE: 1"=50'
6

KENTUCKY TRANSPORTATION CABINET
COMMUNICATING ALL PROMISES (CAP)
ACTIVE

Item No. 11 - 3004 **Project Mgr.** kytc\Erika.Smith

County KNOX **Route** KY-1487

CAP #	Date of Promise	Promise made to:	Location of Promise
1	12-AUG-15	Samuel and Linda Davies	Parcel 16 and Parcel 17

CAP Description

The Davies request that the contractor MUST inform them with at least one week of notice before disturbance to ANY tree on their property (Parcels 16 and 17) is required to allow ample time to relocate or remove said trees.

The contractor shall not disturb the Japanese Maple tree on the property, if the tree must be disturbed or moved to notify the property owners and that the relocation of the tree will be handled by the property owner.

The contractor shall install approximately 36 linear feet of pedestrian safety fencing in the areas where the existing fence may need to be taken down and replaced. The quantity and location are on page R6 of the highway plans for reference.

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 2012* and *Standard Drawings, Edition of 2012 with the 2012 Revision.*

Supplemental Specifications to the Standard Specifications for Road and Bridge Construction, 2012 Edition Effective with the July 31, 2015 Letting

Subsection:	102.15 Process Agent.
Revision:	Replace the 1st paragraph with the following: Every corporation doing business with the Department shall submit evidence of compliance with KRS Sections 14A.4-010, 271B.11-010, 271B.11-070, 271B.11-080, 271B.5-010 and 271B.16-220, and file with the Department the name and address of the process agent upon whom process may be served.
Subsection:	105.13 Claims Resolution Process.
Revision:	Delete all references to TC 63-34 and TC 63-44 from the subsection as these forms are no longer available through the forms library and are forms generated within the AASHTO SiteManager software.
Subsection:	108.03 Preconstruction Conference.
Revision:	Replace 8) Staking with the following: 8) Staking (designated by a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	109.07.02 Fuel.
Revision:	Revise item Crushed Aggregate Used for Embankment Stabilization to the following: Crushed Aggregate Used for Stabilization of Unsuitable Materials Used for Embankment Stabilization
	Delete the following item from the table. ~~Crushed Sandstone Base (Cement Treated)~~
Subsection:	110.02 Demobilization.
Revision:	Replace the first part of the first sentence of the second paragraph with the following: Perform all work and operations necessary to accomplish final clean-up as specified in the first paragraph of Subsection 105.12;
Subsection:	112.03.12 Project Traffic Coordinator (PTC).
Revision:	Replace the last paragraph of this subsection with the following: Ensure the designated PTC has sufficient skill and experience to properly perform the task assigned and has successfully completed the qualification courses.
Subsection:	112.04.18 Diversions (By-Pass Detours).
Revision:	Insert the following sentence after the 2nd sentence of this subsection. The Department will not measure temporary drainage structures for payment when the contract documents provide the required drainage opening that must be maintained with the diversion. The temporary drainage structures shall be incidental to the construction of the diversion. If the contract documents fail to provide the required drainage opening needed for the diversion, the cost of the temporary drainage structure will be handled as extra work in accordance with section 109.04.
Subsection:	201.03.01 Contractor Staking.
Revision:	Replace the first paragraph with the following: Perform all necessary surveying under the general supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.

Supplemental Specifications to the Standard Specifications for Road and Bridge Construction, 2012 Edition Effective with the July 31, 2015 Letting

Subsection:	201.04.01 Contractor Staking.
Revision:	Replace the last sentence of the paragraph with the following: Complete the general layout of the project under the supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	206.04.01 Embankment-in-Place.
Revision:	Replace the fourth paragraph with the following: The Department will not measure **suitable** excavation included in the original plans that is disposed of for payment and will consider it incidental to Embankment-in-Place.
Subsection:	208.02.01 Cement.
Revision:	Replace paragraph with the following: Select Type I or Type II cement conforming to Section 801. Use the same type cement throughout the work.
Subsection:	208.03.06 Curing and Protection.
Revision:	Replace the fourth paragraph with the following: Do not allow traffic or equipment on the finished surface until the stabilized subgrade has cured for a total of 7-days with an ambient air temperature above 40 degrees Fahrenheit. A curing day consists of a continuous 24-hour period in which the ambient air temperature does not fall below 40 degrees Fahrenheit. Curing days will not be calculated consecutively, but must total seven (7) , 24-hour days with the ambient air temperature remaining at or above 40 degrees Fahrenheit before traffic or equipment will be allowed to traverse the stabilized subgrade. The Department may allow a shortened curing period when the Contractor requests. The Contractor shall give the Department at least 3 day notice of the request for a shortened curing period. The Department will require a minimum of 3 curing days after final compaction. The Contractor shall furnish cores to the treated depth of the roadbed at 500 feet intervals for each lane when a shortened curing time is requested. The Department will test cores using an unconfined compression test. Roadbed cores must achieve a minimum strength requirement of 80 psi.
Subsection:	208.03.06 Curing and Protection.
Revision:	Replace paragraph eight with the following: At no expense to the Department, repair any damage to the subgrade caused by freezing.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Revision:	Revise **Seed Mix Type I** to the mixture shown below: 50% Kentucky 31 Tall Fescue (Festuca arundinacea) 35% Hard Fescue (Festuca (Festuca longifolia) 10% Ryegrass, Perennial (Lolium perenne) 5% White Dutch Clover (Trifolium repens)
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Number:	2)
Revision:	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 4, 5, 6, and 7. Apply seed mix Type II at a minimum application rate of 100 pounds per acre. If adjacent to a golf course replace the crown vetch with Kentucky 31 Tall Fescue.

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the July 31, 2015 Letting

Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Number:	3)
Revision:	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 1, 2, 3, 8, 9, 10, 11, and 12. Apply seed mix Type III at a minimum application rate of 100 pounds per acre. If adjacent to crop land or golf course, replace the Sericea Lespedeza with Kentucky 31 Fescue.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	B) Procedures for Permanent Seeding.
Revision:	Delete the first sentence of the section.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	B) Procedures for Permanent Seeding.
Revision:	Replace the second and third sentence of the section with the following: Prepare a seedbed and apply an initial fertilizer that contains a minimum of 100 pounds of nitrogen, 100 pounds of phosphate, and 100 pounds of potash per acre. Apply agricultural limestone to the seedbed when the Engineer determines it is needed. When required, place agricultural limestone at a rate of 3 tons per acre.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Top Dressing.
Revision:	Change the title of part to D) Fertilizer.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Fertilizer.
Revision:	Replace the first paragraph with the following: Apply fertilizer at the beginning of the seeding operation and after vegetation is established. Use fertilizer delivered to the project in bags or bulk. Apply initial fertilizer to all areas prior to the seeding or sodding operation at the application rate specified in 212.03.03 B). Apply 20-10-10 fertilizer to the areas after vegetation has been established at a rate of 11.5 pounds per 1,000 square feet. Obtain approval from the Engineer prior to the 2nd fertilizer application. Reapply fertilizer to any area that has a streaked appearance. The reapplication shall be at no additional cost to the Department. Re-establish any vegetation severely damaged or destroyed because of an excessive application of fertilizer at no cost to the Department.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Fertilizer.
Revision:	Delete the second paragraph.
Subsection:	212.04.04 Agricultural Limestone.
Revision:	Replace the entire section with the following: The Department will measure the quantity of agricultural limestone in tons.
Subsection:	212.04.05 Fertilizer.
Revision:	Replace the entire section with the following: The Department will measure fertilizer used in the seeding or sodding operations for payment. The Department will measure the quantity by tons.

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Subsection: 212.05 PAYMENT.
Revision: Delete the following item code:

Code	Pay Item	Pay Unit
05966	Topdressing Fertilizer	Ton

Subsection: 212.05 PAYMENT.
Revision: Add the following pay items:

Code	Pay Item	Pay Unit
05963	Initial Fertilizer	Ton
05964	20-10-10 Fertilizer	Ton
05992	Agricultural Limestone	Ton

Subsection: 213.03.02 Progress Requirements.
Revision: Replace the last sentence of the third paragraph with the following: Additionally, the Department will apply a penalty equal to the liquidated damages when all aspects of work are not coordinated in an acceptable manner within 7 calendar days after written notification.

Subsection: 213.03.05 Temporary Control Measures.
Part: E) Temporary Seeding and Protection.
Revision: Delete the second sentence of the first paragraph.

Subsection: 304.02.01 Physical Properties.
Table: Required Geogrid Properties
Revision: Replace all references to Test Method "GRI-GG2-87" with ASTM D 7737.

Subsection: 402.03.02 Contractor Quality Control and Department Acceptance.
Part: B) Sampling.
Revision: Replace the second sentence with the following:
The Department will determine when to obtain the quality control samples using the random-number feature of the mix design submittal and approval spreadsheet. The Department will randomly determine when to obtain the verification samples required in Subsections 402.03.03 and 402.03.04 using the Asphalt Mixture Sample Random Tonnage Generator.

Subsection: 402.03.02 Contractor Quality Control and Department Acceptance.
Part: D) Testing Responsibilities.
Number: 3) VMA.
Revision: Add the following paragraph below Number 3) VMA:
Retain the AV/VMA specimens and one additional corresponding G_{mm} sample for 5 working days for mixture verification testing by the Department. For Specialty Mixtures, retain a mixture sample for 5 working days for mixture verification testing by the Department. When the Department's test results do not verify that the Contractor's quality control test results are within the acceptable tolerances according to Subsection 402.03.03, retain the samples and specimens from the affected sublot(s) for the duration of the project.

Subsection: 402.03.02 Contractor Quality Control and Department Acceptance.
Part: D) Testing Responsibilities.
Number: 4) Density.
Revision: Replace the second sentence of the Option A paragraph with the following:
Perform coring by the end of the following work day.

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Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	5) Gradation.
Revision:	Delete the second paragraph.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	H) Unsatisfactory Work.
Number:	1) Based on Lab Data.
Revision:	Replace the second paragraph with the following: When the Engineer determines that safety concerns or other considerations prohibit an immediate shutdown, continue work and the Department will make an evaluation of acceptability according to Subsection 402.03.05.
Subsection:	402.03.03 Verification.
Revision:	Replace the first paragraph with the following: **402.03.03 Mixture Verification.** For volumetric properties, the Department will perform a minimum of one verification test for AC, AV, and VMA according to the corresponding procedures as given in Subsection 402.03.02. The Department will randomly determine when to obtain the verification sample using the Asphalt Mixture Sample Random Tonnage Generator. For specialty mixtures, the Department will perform one AC and one gradation determination per lot according to the corresponding procedures as given in Subsection 402.03.02. However, Department personnel will not perform AC determinations according to KM 64-405. The Contractor will obtain a quality control sample at the same time the Department obtains the mixture verification sample and perform testing according to the procedures given in Subsection 402.03.02. If the Contractor's quality control sample is verified by the Department's test results within the tolerances provided below, the Contractor's sample will serve as the quality control sample for the affected sublot. The Department may perform the mixture verification test on the Contractor's equipment or on the Department's equipment.
Subsection:	402.03.03 Verification.
Part:	A) Evaluation of Sublot(s) Verified by Department.
Revision:	Replace the third sentence of the second paragraph with the following: When the paired *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection:	402.03.03 Verification.
Part:	B) Evaluation of Sublots Not Verified by Department.
Revision:	Replace the third sentence of the first paragraph with the following: When differences between test results are not within the tolerances listed below, the Department will resolve the discrepancy according to Subsection 402.03.05.

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Subsection:	402.03.03 Verification.
Part:	B) Evaluation of Sublots Not Verified by Department.
Revision:	Replace the third sentence of the second paragraph with the following: When the *F* -test or *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection:	402.03.03 Verification.
Part:	C) Test Data Patterns.
Revision:	Replace the second sentence with the following: When patterns indicate substantial differences between the verified and non-verified sublots, the Department will perform further comparative testing according to subsection 402.03.05.
Subsection:	402.03 CONSTRUCTION.
Revision:	Add the following subsection: **402.03.04 Testing Equipment and Technician Verification.** For mixtures with a minimum quantity of 20,000 tons and for every 20,000 tons thereafter, the Department will obtain an additional verification sample at random using the Asphalt Mixture Sample Random Tonnage Generator in order to verify the integrity of the Contractor's and Department's laboratory testing equipment and technicians. The Department will obtain a mixture sample of at least 150 lb at the asphalt mixing plant according to KM 64-425 and split it according to AASHTO R 47. The Department will retain one split portion of the sample and provide the other portion to the Contractor. At a later time convenient to both parties, the Department and Contractor will simultaneously reheat the sample to the specified compaction temperature and test the mixture for AV and VMA using separate laboratory equipment according to the corresponding procedures given in Subsection 402.03.02. The Department will evaluate the differences in test results between the two laboratories. When the difference between the results for AV or VMA is not within ± 2.0 percent, the Department will investigate and resolve the discrepancy according to Subsection 402.03.05.
Subsection:	402.03.04 Dispute Resolution.
Revision:	Change the subsection number to 402.03.05.
Subsection:	402.05 PAYMENT.
Part:	Lot Pay Adjustment Schedule Compaction Option A Base and Binder Mixtures
Table:	AC
Revision:	Replace the Deviation from JMF(%) that corresponds to a Pay Value of 0.95 to ±0.6.
Subsection:	403.02.10 Material Transfer Vehicle (MTV).
Revision:	Replace the first sentence with the following: In addition to the equipment specified above, provide a MTV with the following minimum characteristics:
Subsection:	412.02.09 Material Transfer Vehicle (MTV).
Revision:	Replace the paragraph with the following: Provide and utilize a MTV with the minimum characteristics outlined in section 403.02.10.

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Subsection:	412.03.07 Placement and Compaction.
Revision:	Replace the first paragraph with the following: Use a MTV when placing SMA mixture in the driving lanes. The MTV is not required on ramps and/or shoulders unless specified in the contract. When the Engineer determines the use of the MTV is not practical for a portion of the project, the Engineer may waive its requirement for that portion of pavement by a letter documenting the waiver.
Subsection:	412.04 MEASUREMENT.
Revision:	Add the following subsection: 412.04.03. Material Transfer Vehicle (MTV). The Department will not measure the MTV for payment and will consider its use incidental to the asphalt mixture.
Subsection:	501.03.05 Weather Limitations and Protection.
Revision:	Replace the reference to Subsection 501.03.19 in Paragraph 5, with Subsection 501.03.20.
Subsection: **Part:** **Revision:**	501.03.19 Surface Tolerances and Testing Surface. B) Ride Quality. Add the following to the end of the first paragraph: The Department will specify if the ride quality requirements are Category A or Category B when ride quality is specified in the Contract. Category B ride quality requirements shall apply when the Department fails to classify which ride quality requirement will apply to the Contract.
Subsection:	603.03.06 Cofferdams.
Revision:	Replace the seventh sentence of paragraph one with the following: Submit drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection:	605.03.04 Tack Welding.
Revision:	Insert the subsection and the following: 605.03.04 Tack Welding. The Department does not allow tack welding.
Subsection: **Part:** **Number:** **Revision:**	606.03.17 Special Requirements for Latex Concrete Overlays. A) Existing Bridges and New Structures. 1) Prewetting and Grout-Bond Coat. Add the following sentence to the last paragraph: Do not apply a grout-bond coat on bridge decks prepared by hydrodemolition.
Subsection:	609.03 Construction.
Revision:	Replace Subsection 609.03.01 with the following: 609.03.01 A) Swinging the Spans. Before placing concrete slabs on steel spans or precast concrete release the temporary erection supports under the bridge and swing the span free on its supports. 609.03.01 B) Lift Loops. Cut all lift loops flush with the top of the precast beam once the beam is placed in the final location and prior to placing steel reinforcement. At locations where lift loops are cut, paint the top of the beam with galvanized or epoxy paint.

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Subsection: **Revision:**	611.03.02 Precast Unit Construction. Replace the first sentence of the subsection with the following: Construct units according to ASTM C1577, **replacing Table 1 (Design Requirements for Precast Concrete Box Sections Under Earth, Dead and HL-93 Live Load Conditions) with KY Table 1 (Precast Culvert KYHL-93 Design Table)**, and Section 605 with the following exceptions and additions:
Subsection: **Number:** **Revision:**	613.03.01 Design. 2) Replace "AASHTO Standard Specifications for Highway Bridges" with "AASHTO LRFD Bridge Design Specifications"
Subsection: **Revision:**	615.06.02 Add the following sentence to the end of the subsection. The ends of units shall be normal to walls and centerline except exposed edges shall be beveled ¾ inch.
Subsection: **Revision:**	615.06.03 Placement of Reinforcement in Precast 3-Sided Units. Replace the reference of 6.6 in the section to 615.06.06.
Subsection: **Revision:**	615.06.04 Placement of Reinforcement for Precast Endwalls. Replace the reference of 6.7 in the section to 615.06.07.
Subsection: **Revision:**	615.06.06 Laps, Welds, and Spacing for Precast 3-Sided Units. Replace the subsection with the following: Tension splices in the circumferential reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. The overlap of welded wire fabric shall be measured between the outer most longitudinal wires of each fabric sheet. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. For splices other than tension splices, the overlap shall be a minimum of 12" for welded wire fabric or deformed billet-steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be no less than 2 inches and no more than 4 inches. The spacing center to center of the longitudinal wires shall not be more than 8 inches. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 16 inches.
Subsection: **Revision:**	615.06.07 Laps, Welds, and Spacing for Precast Endwalls. Replace the subsection with the following: Splices in the reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. The spacing center-to-center of the wire fabric sheet shall not be less than 2 inches or more than 8 inches.

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Subsection:	615.08.01 Type of Test Specimen.
Revision:	Replace the subsection with the following: Start-up slump, air content, unit weight, and temperature tests will be performed each day on the first batch of concrete. Acceptable start-up results are required for production of the first unit. After the first unit has been established, random acceptance testing is performed daily for each 50 yd^3 (or fraction thereof). In addition to the slump, air content, unit weight, and temperature tests, a minimum of one set of cylinders shall be required each time plastic property testing is performed.
Subsection:	615.08.02 Compression Testing.
Revision:	Delete the second sentence.
Subsection:	615.08.04 Acceptability of Core Tests.
Revision:	Delete the entire subsection.
Subsection:	615.12 Inspection.
Revision:	Add the following sentences to the end of the subsection: Units will arrive at jobsite with the "Kentucky Oval" stamped on the unit which is an indication of acceptable inspection at the production facility. Units shall be inspected upon arrival for any evidence of damage resulting from transport to the jobsite.
Subsection:	701.04.16 Deduction for Pipe Deflection.
Revision:	Insert the following at the end of the paragraph: The section length is determined by the length of the pipe between joints where the failure occurred.
Subsection:	716.02.02 Paint.
Revision:	Replace sentence with the following: Conform to Section 821.
Subsection:	716.03 CONSTRUCTION.
Revision:	Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,
Subsection:	716.03.02 Lighting Standard Installation.
Revision:	Replace the second sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Revision:	Replace the third sentence with the following: Orient the transformer base so the door is positioned on the side away from on-coming traffic.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Number:	1) Breakaway Installation and Requirements.
Revision:	Replace the first sentence with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Revision:	Replace the first sentence with the following: Install each high mast pole as noted on plans.

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Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Number:	2) Concrete Base Installation
Revision:	Modification of Chart and succeeding paragraphs within this section:

Drilled Shaft Depth Data							
Level Ground		3:1 Ground Slope		2:1 Ground Slope		1.5:1 Ground Slope (2)	
Soil	Rock	Soil	Rock	Soil	Rock	Soil	Rock
17 ft	7 ft	19 ft	7 ft	20 ft	7 ft	(1)	7 ft

Steel Requirements			
Vertical Bars		Ties or Spiral	
Size	Total	Size	Spacing or Pitch
#10	16	#4	12 inch

(1): Shaft length is 22' for cohesive soil only. For cohesionless soil, contact geotechnical branch for design.
(2): Do not construct high mast drilled shafts on ground slopes steeper than 1.5:1 without the approval of the Division of Traffic.

If rock is encountered during drilling operations and confirmed by the engineer to be of sound quality, the shaft is only required to be further advanced into the rock by the length of rock socket shown in the table. The total length of the shaft need not be longer than that of soil alone. Both longitudinal rebar length and number of ties or spiral length shall be adjusted accordingly.

If a shorter depth is desired for the drilled shaft, the contractor shall provide, for the state's review and approval, a detailed column design with individual site specific soil and rock analysis performed and approved by a Professional Engineer licensed in the Commonwealth of Kentucky.

Spiral reinforcement may be substituted for ties. If spiral reinforcement is used, one and one-half closed coils shall be provided at the ends of each spiral unit. Subsurface conditions consisting of very soft clay or very loose saturated sand could result in soil parameters weaker than those assumed. Engineer shall consult with the geotechnical branch if such conditions are encountered.

The bottom of the drilled hole shall be firm and thoroughly cleaned so no loose or compressible materials are present at the time of the concrete placement. If the drilled hole contains standing water, the concrete shall be placed using a tremie to displace water. Continuous concrete flow will be required to insure full displacement of any water.

The reinforcement and anchor bolts shall be adequately supported in the proper positions so no movement occurs during concrete placement. Welding of anchor bolts to the reinforcing cage is unacceptable, templates shall be used. Exposed portions of the foundation shall be formed to create a smooth finished surface. All forming shall be removed upon completion of foundation construction.

Subsection:	716.03.03 Trenching.
Part:	A) Trenching of Conduit for Highmast Ducted Cables.
Revision:	Add the following after the first sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.

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Subsection:	716.03.03 Trenching.
Part:	B) Trenching of Conduit for Non-Highmast Cables.
Revision:	Add the following after the second sentence: If depths greater than 24 inches are necessary for either situation listed previously, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection:	716.03.10 Junction Boxes.
Revision:	Replace subsection title with the following: Electrical Junction Box.
Subsection:	716.04.07 Pole with Secondary Control Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure mounting the cabinet to the pole, backfilling, restoration, any necessary hardware to anchor pole, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breaker, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection:	716.04.08 Lighting Control Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure constructing the concrete base, excavation, backfilling, restoration, any necessary anchors, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breakers, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection:	716.04.09 Luminaire.
Revision:	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection:	716.04.10 Fused Connector Kits.
Revision:	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection:	716.04.13 Junction Box.
Revision:	Replace the subsection title with the following: Electrical Junction Box Type Various.
Subsection:	716.04.13 Junction Box.
Part:	A) Junction Electrical.
Revision:	Rename A) Junction Electrical to the following: A) Electrical Junction Box.
Subsection:	716.04.14 Trenching and Backfilling.
Revision:	Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.

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Subsection: 716.04.18 Remove Lighting.
Revision: Replace the paragraph with the following:
The Department will measure the quantity as a lump sum for the removal of lighting equipment. The Department will not measure the disposal of all equipment and materials off the project by the contractor. The Department also will not measure the transportation of the materials and will consider them incidental to this item of work.

Subsection: 716.04.20 Bore and Jack Conduit.
Revision: Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.

Subsection: 716.05 PAYMENT.
Revision: Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following:

Code	Pay Item	Pay Unit
04810	Electrical Junction Box	Each
04811	Electrical Junction Box Type B	Each
20391NS835	Electrical Junction Box Type A	Each
20392NS835	Electrical Junction Box Type C	Each

Subsection: 723.02.02 Paint.
Revision: Replace sentence with the following: Conform to Section 821.

Subsection: 723.03 CONSTRUCTION.
Revision: Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,

Subsection: 723.03.02 Poles and Bases Installation.
Revision: Replace the first sentence with the following:
Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.

Subsection: 723.03.02 Poles and Bases Installation.
Part: A) Steel Strain and Mastarm Poles Installation
Revision: Replace the second paragraph with the following: For concrete base installation, see Section 716.03.02, B), 2), Paragraphs 2-7. Drilled shaft depth shall be based on the soil conditions encountered during drilling and slope condition at the site. Refer to the design chart below:

Subsection: 723.03.02 Poles and Bases Installation.
Part: B) Pedestal or Pedestal Post Installation.
Revision: Replace the fourth sentence of the paragraph with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.

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Subsection: **Part:** **Revision:**	723.03.03 Trenching. A) Under Roadway. Add the following after the second sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain ether required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection: **Revision:**	723.03.11 Wiring Installation. Add the following sentence between the fifth and sixth sentences: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection: **Revision:**	723.03.12 Loop Installation. Replace the fourth sentence of the 2nd paragraph with the following: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection: **Revision:**	723.04.02 Junction Box. Replace subsection title with the following: Electrical Junction Box Type Various.
Subsection: **Revision:**	723.04.03 Trenching and Backfilling. Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.10 Signal Pedestal. Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, specified conduits, fittings, ground rod, ground wire, backfilling, restoring disturbed areas, or other necessary hardware and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.15 Loop Saw Slot and Fill. Replace the second sentence with the following: The Department will not measure sawing, cleaning and filling induction loop saw slot, loop sealant, backer rod, and grout and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.16 Pedestrian Detector. Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished, installed and connected to pole/pedestal. The Department will not measure installing R10-3e (with arrow) sign, furnishing and installing mounting hardware for sign and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.18 Signal Controller- Type 170. Replace the second sentence with the following: The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure furnishing and connecting the induction of loop amplifiers, pedestrian isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.

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Subsection:	723.04.20 Install Signal Controller - Type 170.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed. The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, and excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure connecting the induction loop amplifiers, pedestrian, isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.
Subsection:	723.04.22 Remove Signal Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as a lump sum removal of signal equipment. The Department will not measure the return of control equipment and signal heads to the Department of Highways as directed by the District Traffic Engineer. The Department also will not measure the transportation of materials of the disposal of all other equipment and materials off the project by the contractor and will consider them incidental to this item of work.
Subsection:	723.04.28 Install Pedestrian Detector Audible.
Revision:	Replace the second sentence with the following: The Department will not measure installing sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection:	723.04.29 Audible Pedestrian Detector.
Revision:	Replace the second sentence with the following: The Department will not measure furnishing and installing the sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection:	723.04.30 Bore and Jack Conduit.
Revision:	Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.
Subsection:	723.04.31 Install Pedestrian Detector.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed and connected to pole/pedestal. The Department will not measure installing sign R 10-3e (with arrow) and will consider it incidental to this item of work.
Subsection:	723.04.32 Install Mast Arm Pole.
Revision:	Replace the second sentence with the following: The Department will not measure arms, signal mounting brackets, anchor bolts, or any other necessary hardware and will consider them incidental to this item of work.
Subsection:	723.04.33 Pedestal Post.
Revision:	Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, conduit, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

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Subsection: 723.04.36 Traffic Signal Pole Base.
Revision: Replace the second sentence with the following: The Department will not measure excavation, reinforcing steel, anchor bolts, specified conduits, ground rods, ground wires, backfilling, or restoration and will consider them incidental to this item of work.

Subsection: 723.04.37 Install Signal Pedestal.
Revision: Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

Subsection: 723.04.38 Install Pedestal Post.
Revision: Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

Subsection: 723.05 PAYMENT.
Revision: Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following:

Code	Pay Item	Pay Unit
04810	Electrical Junction Box	Each
04811	Electrical Junction Box Type B	Each
20391NS835	Electrical Junction Box Type A	Each
20392NS835	Electrical Junction Box Type C	Each

Subsection: 804.01.02 Crushed Sand.
Revision: Delete last sentence of the section.

Subsection: 804.01.06 Slag.
Revision: Add subsection and following sentence.
Provide blast furnace slag sand where permitted. The Department will allow steel slag sand only in asphalt surface applications.

Subsection: 804.04 Asphalt Mixtures.
Revision: Replace the subsection with the following:
Provide natural, crushed, conglomerate, or blast furnace slag sand, with the addition of filler as necessary, to meet gradation requirements. The Department will allow any combination of natural, crushed, conglomerate or blast furnace slag sand when the combination is achieved using cold feeds at the plant. The Engineer may allow other fine aggregates.

Subsection: 806.03.01 General Requirements.
Revision: Replace the second sentence of the paragraph with the following:
Additionally, the material must have a minimum solubility of 99.0 percent when tested according to AASHTO T 44 and PG 76-22 must exhibit a minimum recovery of 60 percent, with a J_{NR} (nonrecoverable creep compliance) between 0.1 and 0.5, when tested according to AASHTO TP 70.

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Subsection: **Table:** **Revision:**	806.03.01 General Requirements. PG Binder Requirements and Price Adjustment Schedule Replace the Elastic Recovery, % [3] (AASHTO T301) and all corresponding values in the table with the following: Test | Specification | 100% Pay | 90% Pay | 80% Pay | 70% Pay | 50%Pay[1] MSCR recovery, % [3] (AASHTO TP 70) | 60 Min. | ≥58 | 56 | 55 | 54 | <53
Subsection: **Table:** **Superscript:** **Revision:**	806.03.01 General Requirements. PG Binder Requirements and Price Adjustment Schedule (3) Replace [3] with the following: Perform testing at 64°C.
Subsection: **Revision:**	813.04 Gray Iron Castings. Replace the reference to "AASHTO M105" with "ASTM A48".
Subsection: **Number:** **Revision:**	813.09.02 High Strength Steel Bolts, Nuts, and Washers. A) Bolts. Delete first paragraph and "Hardness Number" Table. Replace with the following: A) Bolts. Conform to ASTM A325 (AASHTO M164) or ASTM A490 (AASHTO 253) as applicable.
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Third paragraph, replace the reference to "AWPA C14" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Replace the first sentence of the fourth paragraph with the following: Use any of the species of wood for round or square posts covered under AWPA U1.
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Fourth paragraph, replace the reference to "AWPA C2" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Delete the second sentence of the fourth paragraph.
Subsection: **Revision:**	814.05.02 Composite Plastic. 1) Add the following to the beginning of the first paragraph: Select composite offset blocks conforming to this section and assure blocks are from a manufacturer included on the Department's List of Approved Materials. 2) Delete the last paragraph of the subsection.
Subsection: **Revision:**	816.07.02 Wood Posts and Braces. First paragraph, replace the reference to "AWPA C5" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	816.07.02 Wood Posts and Braces. Delete the second sentence of the first paragraph.
Subsection: **Revision:**	818.07 Preservative Treatment. First paragraph, replace all references to "AWPA C14" with "AWPA U1, Section A".

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Subsection: **Revision:**	834.14 Lighting Poles. Replace the first sentence with the following: Lighting pole design shall be in accordance with loading and allowable stress requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims, with the exception of the following: The Cabinet will waive the requirement stated in the first sentence of Section 5.14.6.2 – Reinforced Holes and Cutouts for high mast poles (only). The minimum diameter at the base of the pole shall be 22 inches for high mast poles (only).
Subsection **Revision:**	834.14.03 High Mast Poles. Remove the second and fourth sentence from the first paragraph.
Subsection **Revision:**	834.14.03 High Mast Poles. Replace the third paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	834.14.03 High Mast Poles. Replace paragraph six with the following: Provide a pole section that conforms to ASTM A 595 grade A with a minimum yield strength of 55 KSI or ASTM A 572 with a minimum yield strength of 55 KSI. Use tubes that are round or 16 sided with a four inch corner radius, have a constant linear taper of .144 in/ft and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Provide pole sections that are telescopically slip fit assembled in the field to facilitate inspection of interior surface welds and the protective coating. The minimum length of the telescopic slip splices shall be 1.5 times the inside diameter of the exposed end of the female section. Use longitudinal seam welds as commended in Section 5.15 of the AASHTO 2013 Specifications. The thickness of the transverse base shall not be less than 2 inches. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration groove weld with backup bar.The handhole cover shall be removable from the handhole frame. One the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM A 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7-guage stainless steel to provide adjustability to insure weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube of the pole but needs to be at least 15 inches. Provide products that are hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A 153 (hardware items).
Subsection: **Revision:**	834.16 ANCHOR BOLTS. Insert the following sentence at the beginning of the paragraph: The anchor bolt design shall follow the NCHRP Report 494 Section 2.4 and NCHRP 469 Appendix A Specifications.

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Subsection:	834.17.01 Conventional.
Revision:	Add the following sentence after the second sentence: Provide a waterproof sticker mounted on the bottom of the housing that is legible from the ground and indicates the wattage of the fixture by providing the first two numbers of the wattage.
Subsection:	834.21.01 Waterproof Enclosures.
Revision:	Replace the last five sentences in the second paragraph with the following sentences: Provide a cabinet door with a louvered air vent, filter-retaining brackets and an easy to clean metal filter. Provide a cabinet door that is keyed with a factory installed standard no. 2 corbin traffic control key. Provide a light fixture with switch and bulb. Use a 120-volt fixture and utilize a L.E.D. bulb (equivalent to 60 watts minimum). Fixture shall be situated at or near the top of the cabinet and illuminate the contents of the cabinet. Provide a 120 VAC GFI duplex receptacle in the enclosure with a separate 20 amp breaker.
Subsection:	835.07 Traffic Poles.
Revision:	Replace the first sentence of the first paragraph with the following: Pole diameter and wall thickness shall be calculated in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	835.07 Traffic Poles.
Revision:	*Replace the first sentence of the fourth paragraph with the following: Ensure transverse plates have a thickness ≥ 2 inches. *Add the following sentence to the end of the fourth paragraph: The bottom pole diameter shall not be less than 16.25 inches.
Subsection:	835.07 Traffic Poles.
Revision:	Replace the third sentence of the fifth paragraph with the following: For anchor bolt design, pole forces shall be positioned in such a manner to maximize the force on any individual anchor bolt regardless of the actual anchor bolt orientation with the pole.
Subsection:	835.07 Traffic Poles.
Revision:	Replace the first and second sentence of the sixth paragraph with the following: The pole handhole shall be 25 inches by 6.5 inches. The handhole cover shall be removable from the handhole frame. On the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7 gauge stainless steel to provide adjustability to insure a weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube but needs to be at least 12 inches.

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Subsection:	835.07 Traffic Poles.
Revision:	*Replace the first sentence of the last paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky. *Replace the third sentence of the last paragraph with the following: All tables referenced in 835.07 are found in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	835.07.01 Steel Strain Poles.
Revision:	Replace the second sentence of the second paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection:	835.07.01 Steel Strain Poles.
Revision:	Replace number 7. after the second paragraph with the following: 7. Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection:	835.07.02 Mast Arm Poles.
Revision:	Replace the second sentence of the fourth paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection:	835.07.02 Mast Arm Poles.
Revision:	Replace number 7) after the fourth paragraph with the following: 7) Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection:	835.07.03 Anchor Bolts.
Revision:	Add the following to the end of the paragraph: There shall be two steel templates (one can be used for the headed part of the anchor bolt when designed in this manner) provided per pole. Templates shall be contained within a 26.5 inch diameter. All templates shall be fully galvanized (ASTM A 153).
Subsection:	835.16.05 Optical Units.
Revision:	Replace the 3rd paragraph with the following: The list of certified products can be found on the following website: http://www.intertek.com.
Subsection:	835.19.01 Pedestrian Detector Body.
Revision:	Replace the first sentence with the following: Provide a four holed pole mounted aluminum rectangular housing that is compatible with the pedestrian detector.
Subsection:	843.01.01 Geotextile Fabric.
Table:	TYPE I FABRIC GEOTEXTILES FOR SLOPE PROTECTION AND CHANNEL LINING
Revision:	Add the following to the chart:

Property	Minimum Value[(1)]	Test Method
CBR Puncture (lbs)	494	ASTM D6241
Permittivity (1/s)	0.7	ASTM D4491

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Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE II FABRIC GEOTEXTILES FOR UNDERDRAINS
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	210	ASTM D6241
Permittivity (1/s)	0.5	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE III FABRIC GEOTEXTILES FOR SUBGRADE OR EMBANKMENT STABILIZATION
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	370	ASTM D6241
Permittivity (1/s)	0.05	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE IV FABRIC GEOTEXTILES FOR EMBANKMENT DRAINAGE BLANKETS AND PAVEMENT EDGE DRAINS
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	309	ASTM D6241
Permittivity (1/s)	0.5	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE V HIGH STRENGTH GEOTEXTILE FABRIC
Revision: Make the following changes to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	618	ASTM D6241
Apparent Opening Size	U.S. #40[3]	ASTM D4751

[3] Maximum average roll value.

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

LABOR AND WAGE REQUIREMENTS
APPLICABLE TO OTHER THAN FEDERAL-AID SYSTEM PROJECTS

I. APPLICATION

1. These contract provisions shall apply to all work performed on the contract by the contractor with his own organization and with the assistance of workmen under his immediate superintendence and to all work performed on the contract by piecework, station work or by subcontract. The contractor's organization shall be construed to include only workmen employed and paid directly by the contractor and equipment owned or rented by him, with or without operators.

2. The contractor shall insert in each of his subcontracts all of the stipulations contained in these Required Provisions and such other stipulations as may be required.

3. A breach of any of the stipulations contained in these Required Provisions may be grounds for termination of the contract.

II. NONDISCRIMINATION OF EMPLOYEES

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 (between forty and seventy); 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 (between forty and seventy). 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, disability or age (between forty and seventy), except that such notice or advertisement may indicate a preference, limitation, or specification based on religion, or national origin when religion, or national origin 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 (between forty and seventy), 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.

III. PAYMENT OF PREDETERMINED MINIMUM WAGES

1. These special provisions are supplemented elsewhere in the contract by special provisions which set forth certain predetermined minimum wage rates. The contractor shall pay not less than those rates.

2. The minimum wage determination schedule shall be posted by the contractor, in a manner prescribed by the Department of Highways, at the site of the work in prominent places where it can be easily seen by the workers.

IV. STATEMENTS AND PAYROLLS

1. All contractors and subcontractors affected by the terms of KRS 337.505 to 337.550 shall keep full and accurate payroll records covering all disbursements of wages to their employees to whom they are required to pay not less than the prevailing rate of wages. Payrolls and basic records relating thereto will be maintained during the course of the work and preserved for a period of one (1) year from the date of completion of this contract.

2. The payroll records shall contain the name, address and social security number of each employee, his correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid.

3. The contractor shall make his daily records available at the project site for inspection by the State Department of Highways contracting office or his authorized representative.

Periodic investigations shall be conducted as required to assure compliance with the labor provisions of the contract. Interrogation of employees and officials of the contractor shall be permitted during working hours.

Aggrieved workers, Highway Managers, Assistant District Engineers, Resident Engineers and Project Engineers shall report all complaints and violations to the Division of Contract Procurement.

The contractor shall be notified in writing of apparent violations. The contractor may correct the reported violations and notify the Department of Highways of the action taken or may request an informal hearing. The request for hearing shall be in writing within ten (10) days after receipt of the notice of the reported violation. The contractor may submit

records and information which will aid in determining the true facts relating to the reported violations.

Any person or organization aggrieved by the action taken or the findings established as a result of an informal hearing by the Division of Contract Procurement may request a formal hearing.

4. The wages of labor shall be paid in legal tender of the United States, except that this condition will be considered satisfied if payment is made by a negotiable check, on a solvent bank, which may be cashed readily by the employee in the local community for the full amount, without discount or collection charges of any kind. Where checks are used for payments, the contractor shall make all necessary arrangements for them to be cashed and shall give information regarding such arrangements.

5. No fee of any kind shall be asked or accepted by the contractor or any of his agents from any person as a condition of employment on the project.

6. No laborers shall be charged for any tools used in performing their respective duties except for reasonably avoidable loss or damage thereto.

7. Every employee on the work covered by this contract shall be permitted to lodge, board, and trade where and with whom he elects and neither the contractor nor his agents, nor his employees shall directly or indirectly require as a condition of employment that an employee shall lodge, board or trade at a particular place or with a particular person.

8. Every employee on the project covered by this contract shall be an employee of either the prime contractor or an approved subcontractor.

9. No charge shall be made for any transportation furnished by the contractor or his agents to any person employed on the work.

10. No individual shall be employed as a laborer or mechanic on this contract except on a wage basis, but this shall not be construed to prohibit the rental of teams, trucks or other equipment from individuals.

No Covered employee may be employed on the work except in accordance with the classification set forth in the schedule mentioned above; provided, however, that in the event additional classifications are required, application shall be made by the contractor to the Department of Highways and (1) the Department shall request appropriate classifications and rates from the proper agency, or (2) if there is urgent need for additional classification to avoid undue delay in the work, the contractor may employ such workmen at rates deemed comparable to rates established for similar classifications provided he has made written application through the Department of Highways, addressed to the proper agency, for the supplemental rates. The contractor shall retroactively adjust, upon receipt of the supplemental rates schedule, the wages of any employee paid less than the established rate and may adjust the wages of any employee overpaid.

11. 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 laborer or mechanic in any work-week in which he is employed on such work, to work in excess of eight hours in any calendar day or in excess of forty hours in such work-week unless such laborer or mechanic receives compensation at a rate not less than one and one half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such work-week. A laborer, workman or mechanic and an employer may enter into a written agreement or a collective bargaining agreement to work more than eight (8) hours a calendar day but not more than ten (10) hours a calendar day for the straight time hourly rate. This agreement shall be in writing and shall be executed prior to the employee working in excess of eight (8) hours, but not more than ten (10) hours, in any one (1) calendar day.

12. Payments to the contractor may be suspended or withheld due to failure of the contractor to pay any laborer or mechanic employed or working on the site of the work, all or part of the wages required under the terms of the contract. The Department may suspend or withhold payments only after the contractor has been given written notice of the alleged violation and the contractor has failed to comply with the wage determination of the Department of Highways.

13. Contractors and subcontractors shall comply with the sections of Kentucky Revised Statutes, Chapter 337 relating to contracts for Public Works.

Revised 2-16-95

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 (6) provides:
>
> No present or former public servant shall, within six (6) months of 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 the state in matters in which he was directly involved during 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, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved 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.
>
> KRS 11A.040 (8) states:
>
> A former public servant shall not represent a person in a matter before a state agency in which the former public servant was directly involved, 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, Room 136, Capitol Building, 700 Capitol Avenue, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Kentucky Equal Employment Opportunity Act of 1978

The requirements of the Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) shall apply to this Contract. The apparent low Bidder will be required to submit EEO forms to the Division of Construction Procurement, which will then forward to the Finance and Administration Cabinet for review and approval. No award will become effective until all forms are submitted and EEO/CC has certified compliance. The required EEO forms are as follows:

- EEO-1: Employer Information Report
- Affidavit of Intent to Comply
- Employee Data Sheet
- Subcontractor Report

These forms are available on the Finance and Administration's web page under ***Vendor Information, Standard Attachments and General Terms*** at the following address: **https://www.eProcurement.ky.gov**.

Bidders currently certified as being in compliance by the Finance and Administration Cabinet may submit a copy of their approval letter in lieu of the referenced EEO forms.

For questions or assistance please contact the Finance and Administration Cabinet by email at **finance.contractcompliance@ky.gov** or by phone at 502-564-2874.

KENTUCKY LABOR CABINET
PREVAILING WAGE DETERMINATION
CURRENT REVISION
HIGHWAY CONSTRUCTION LOCALITY NO. II

Determination No. CR-15-II-HWY

Date of Determination: July 20, 2015

Project No. Highway

This schedule of the prevailing rate of wages for Locality No. II including the counties of ADAIR, BARREN, BELL, BREATHITT, CASEY, CLAY, CLINTON, CUMBERLAND, ESTILL, FLOYD, GARRARD, GREEN, HARLAN, HART, JACKSON, JOHNSON, KNOTT, KNOX, LAUREL, LAWRENCE, LEE, LESLIE, LETCHER, LINCOLN, MCCREARY, MAGOFFIN, MARTIN, MENIFEE, METCALFE, MONROE, MORGAN, OWSLEY, PERRY, PIKE, POWELL, PULASKI, ROCKCASTLE, RUSSELL, TAYLOR, WAYNE, WHITLEY, and WOLFE has been determined in accordance with the provisions of KRS 337.505 to 337.550. This determination shall be referred to as Prevailing Wage Determination No. CR-15-II-HWY.

The following schedule of rates is to be used for highway construction projects advertised or awarded by the Kentucky Transportation Cabinet. This includes any contracts for the relocation of any utilities or other incidental construction projects advertised or awarded by public authorities as a result of the highway construction project.

Apprentices or trainees shall be permitted to work in accordance with Administrative Regulations. Copies of these regulations will be furnished upon request to any interested person.

Overtime is to be computed at not less than one and one-half (1 1/2) times the indicated BASE RATE for all hours worked in excess of eight (8) hours per day, or in excess of forty (40) hours per week. However, KRS 337.540 permits an employee and employer to agree, in writing, that the employee will be compensated at a straight time base rate for hours worked in excess of eight (8) hours in any one calendar day, but not more than ten (10) hours worked in any one calendar day, if such written agreement is prior to the over eight (8) hours in a calendar day actually being worked, or where provided for in a collective bargaining agreement. The fringe benefit rate is to be paid for each hour worked at a straight time rate for all hours worked. Fringe benefit amounts are applicable for all hours worked except when otherwise noted. Welders will receive rate for craft in which welding is incidental.

No laborer, workman or mechanic shall be paid at a rate less than that of the General Laborer except those classified as bona fide apprentices registered with the Kentucky State Apprenticeship Supervisor unless otherwise specified in this schedule of wage rates.

Anthony Russell, Commissioner
Department of Workplace Standards

CLASSIFICATIONS	RATE AND FRINGE BENEFITS	
BOILERMAKERS:	BASE RATE	$24.65
	FRINGE BENEFIT	12.94
BRICKLAYERS:		
Bricklayers:	BASE RATE	$22.90
	FRINGE BENEFITS	8.50
Stone Mason:	BASE RATE	$21.50
	FRINGE BENEFITS	8.50
CARPENTERS:		
Carpenters:	BASE RATE	$24.90
	FRINGE BENEFITS	14.50
Piledrivers:	BASE RATE	$24.55
	FRINGE BENEFITS	14.50
CEMENT MASONS:	BASE RATE	$21.25
	FRINGE BENEFITS	8.50
ELECTRICIANS:	*BASE RATE	$29.36
	FRINGE BENEFITS	10.55

*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 a direct 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.

LINEMAN:	*BASE RATE	$30.09
	FRINGE BENEFITS	10.94
EQUIPMENT OPERATOR:	*BASE RATE	$26.90
	FRINGE BENEFITS	10.31
GROUNDSMAN:	*BASE RATE	$17.79
	FRINGE BENEFITS	8.51
IRONWORKERS:	BASE RATE	$ 27.56
	FRINGE BENEFITS	20.57

CLASSIFICATIONS — RATE AND FRINGE BENEFITS

LABORERS:

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 helper, 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:

HEAVY & HIGHWAY	BASE RATE	$21.80
	FRINGE BENEFITS	12.36

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:

HEAVY & HIGHWAY	BASE RATE	$22.05
	FRINGE BENEFITS	12.36

GROUP 3: Air track driller (all types), asphalt luteman and rakersm gunnite nozzleman, gunnite operators and mixers, grout pump operator, powderman and blaster, side rail setters, rail paved ditches, screw operators, tunnel laborers (free air), and water blasters:

HEAVY & HIGHWAY	BASE RATE	$22.10
	FRINGE BENEFITS	12.36

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:

HEAVY & HIGHWAY	BASE RATE	$22.70
	FRINGE BENEFITS	12.36

OPERATING ENGINEERS:

Group A-1:
NCCCO or OECP Certified; Crane, dragline, hoist (1 drum when used for stack or chimney construction or repair), hoisting engineer (2 or more drums), orangepeel, overhead crane, piledriver, truck crane, tower crane, hydraulic crane:

BASE RATE	$31.08
FRINGE BENEFITS	14.40

CLASSIFICATIONS — RATE AND FRINGE BENEFITS

OPERATING ENGINEERS (CONTINUED):

Group A:

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 points, 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, gradeall, 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:

BASE RATE	$29.95
FRINGE BENEFITS	14.40

Group B:

All air compressors (200 cu. ft. per min. or greater capacity), bituminous mixer, concrete mixer (under 21 cu. ft.), welding machine, form grader, tractor (50 H.P. and over), bull float, finish machine, outboard motor boat, brakeman, mechanic helper, whirly oiler, tractair and road widening trencher, articulating trucks:

BASE RATE	$27.26
FRINGE BENEFITS	14.40

Group B2:

Greaser on grease facilities servicing heavy equipment:

BASE RATE	$27.68
FRINGE BENEFITS	14.40

Group C:

Bituminous distributor, cement gun, conveyor, mud jack, paving joint machine, pump, tamping machine, tractors (under 50 H.P.), vibrator, oiler, air compressors (under 200 cu. ft. per min. capacity), concrete saw, burlap and curing machine, hydro seeder, power form handling equipment, deckhand oiler, hydraulic post driver:

BASE RATE	$26.96
FRINGE BENEFITS	14.40

PAINTERS:

All Excluding Bridges:

BASE RATE	$19.92
FRINGE BENEFITS	9.57

Bridges:

BASE RATE	$23.92
FRINGE BENEFITS	10.07

CLASSIFICATIONS	RATE AND FRINGE BENEFITS	
PLUMBERS:	BASE RATE	$22.52
	FRINGE BENEFITS	7.80
SHEET METAL:	BASE RATE	$20.40
	FRINGE BENEFITS	7.80
TRUCK DRIVERS:		
Truck helper and warehouseman:	BASE RATE	$23.20
	FRINGE BENEFITS	14.50
Driver, winch truck and A-Frame when used in transporting materials:	BASE RATE	$23.30
	FRINGE BENEFITS	14.50
Driver, (semi-trailer or pole trailer), driver (dump truck, tandem axle), driver of distributor:	BASE RATE	$23.40
	FRINGE BENEFITS	14.50
Driver on mixer trucks (all types):	BASE RATE	$23.45
	FRINGE BENEFITS	14.50
Truck mechanic:	BASE RATE	$23.50
	FRINGE BENEFITS	14.50
Driver (3 tons and under), tire changer and truck mechanic helper:	BASE RATE	$23.53
	FRINGE BENEFITS	14.50
Driver on pavement breakers:	BASE RATE	$23.55
	FRINGE BENEFITS	14.50
Driver (over 3 tons), driver (truck mounted rotary drill):	BASE RATE	$23.74
	FRINGE BENEFITS	14.50
Driver, Euclid and other heavy earth moving equipment and Low Boy:	BASE RATE	$24.31
	FRINGE BENEFITS	14.50
Greaser on greasing facilities:	BASE RATE	$24.40
	FRINGE BENEFITS	14.50

Kentucky Determination No. CR-15-II-HWY dated July 20, 2015

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 the General Laborer except those classified as bona fide apprentices registered with the Kentucky State Apprenticeship Supervisor unless otherwise specified in this schedule of wage rates.

These rates are listed pursuant to the Kentucky Determination No. CR-15-II-HWY dated July 20, 2015. 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 contract or 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 numbers of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

Overtime is to be paid after an employee works eight (8) hours a day or forty (40) hours a week, whichever gives the employee the greater wage. At least time and one-half the base rate is required for all overtime. A laborer, workman or mechanic and an employer may enter into a written agreement or a collective bargaining agreement to work more than eight (8) hours a calendar day but not more than ten (10) hours a calendar day for the straight time hourly rate. Wage violations or questions should be directed to the designated Engineer or to the undersigned.

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

PART IV

INSURANCE

INSURANCE

The Contractor shall procure and maintain the following insurance in addition to the insurance required by law:

1) Commercial General Liability-Occurrence form – not less than $2,000,000 General aggregate, $2,000,000 Products & Completed Aggregate, $1,000,000 Personal & Advertising, $1,000,000 each occurrence.

2) Automobile Liability- $1,000,000 per accident

3) Employers Liability:

   a) $100,000 Each Accident Bodily Injury
   b) $500,000 Policy limit Bodily Injury by Disease
   c) $100,000 Each Employee Bodily Injury by Disease

4) The insurance required above must be evidenced by a Certificate of Insurance and this Certificate of Insurance must contain one of the following statements:
   a) "policy contains no deductible clauses."
   b) "policy contains _____ (amount) deductible property damage clause but company will pay claim and collect the deductible from the insured."

5) KENTUCKY WORKMEN'S COMPENSATION INSURANCE. The contractor shall furnish evidence of coverage of all his employees or give evidence of self-insurance by submitting a copy of a certificate issued by the Workmen's Compensation Board.

The cost of insurance is incidental to all contract items. All subcontractors must meet the same minimum insurance requirements.

PART V

BID ITEMS

151280

PROPOSAL BID ITEMS

Report Date 10/27/15

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	3,654.00	TON		$	
0020	00020		TRAFFIC BOUND BASE	200.00	TON		$	
0030	00078		CRUSHED AGGREGATE SIZE NO 2	6,997.00	TON		$	
0040	00212		CL2 ASPH BASE 1.00D PG64-22	3,268.00	TON		$	
0050	00301		CL2 ASPH SURF 0.38D PG64-22	927.00	TON		$	
0060	02101		CEM CONC ENT PAVEMENT-8 IN	359.00	SQYD		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0070	01005		PERFORATED PIPE EDGE DRAIN-4 IN	3,574.00	LF		$	
0080	01010		NON-PERFORATED PIPE-4 IN	35.00	LF		$	
0090	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS		$	
0100	01740		CORED HOLE DRAINAGE BOX CON-4 IN	34.00	EACH		$	
0110	01741		CORED HOLE DRAINAGE BOX CON-6 IN	1.00	EACH		$	
0120	01810		STANDARD CURB AND GUTTER	3,106.10	LF		$	
0130	01890		ISLAND HEADER CURB TYPE 1	1,076.00	LF		$	
0140	01891		ISLAND HEADER CURB TYPE 2	92.00	LF		$	
0150	02014		BARRICADE-TYPE III	12.00	EACH		$	
0160	02200		ROADWAY EXCAVATION	2,356.00	CUYD		$	
0170	02242		WATER (FOR DUST CONTROL)	20.00	MGAL		$	
0180	02429		RIGHT-OF-WAY MONUMENT TYPE 1	11.00	EACH		$	
0190	02430		RIGHT-OF-WAY MONUMENT TYPE 1A	3.00	EACH		$	
0200	02432		WITNESS POST	14.00	EACH		$	
0210	02545		CLEARING AND GRUBBING (APPROXIMATELY 2.34 ACRES))	1.00	LS		$	
0220	02562		TEMPORARY SIGNS	433.00	SQFT		$	
0230	02585		EDGE KEY	105.00	LF		$	
0240	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0250	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		$	
0260	02677		ASPHALT PAVE MILLING & TEXTURING	2,970.00	TON		$	
0270	02701		TEMP SILT FENCE	1,919.00	LF		$	
0280	02703		SILT TRAP TYPE A	2.00	EACH		$	
0290	02704		SILT TRAP TYPE B	2.00	EACH		$	
0300	02705		SILT TRAP TYPE C	2.00	EACH		$	
0310	02706		CLEAN SILT TRAP TYPE A	2.00	EACH		$	
0320	02707		CLEAN SILT TRAP TYPE B	2.00	EACH		$	
0330	02708		CLEAN SILT TRAP TYPE C	2.00	EACH		$	
0340	02720		SIDEWALK-4 IN CONCRETE	2,068.00	SQYD		$	
0350	02726		STAKING	1.00	LS		$	
0360	05950		EROSION CONTROL BLANKET	1,040.00	SQYD		$	
0370	05952		TEMP MULCH	6,700.00	SQYD		$	
0380	05963		INITIAL FERTILIZER	.60	TON		$	
0390	05964		20-10-10 FERTILIZER	.60	TON		$	
0400	05985		SEEDING AND PROTECTION	874.00	SQYD		$	
0410	05990		SODDING	5,132.00	SQYD		$	

PROPOSAL BID ITEMS

151280

Report Date 10/27/15

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0420	05992		AGRICULTURAL LIMESTONE	7.00	TON		$	
0430	06510		PAVE STRIPING-TEMP PAINT-4 IN	12,500.00	LF		$	
0440	06514		PAVE STRIPING-PERM PAINT-4 IN	3,097.00	LF		$	
0450	06515		PAVE STRIPING-PERM PAINT-6 IN	6,050.00	LF		$	
0460	06566		PAVE MARKING-THERMO X-WALK-12 IN	297.00	LF		$	
0470	06568		PAVE MARKING-THERMO STOP BAR-24IN	151.00	LF		$	
0480	06569		PAVE MARKING-THERMO CROSS-HATCH	2,551.00	SQFT		$	
0490	06570		PAVE MARKING-PAINT CROSS-HATCH	654.00	SQFT		$	
0500	06574		PAVE MARKING-THERMO CURV ARROW	29.00	EACH		$	
0510	20206EC		PAVE MARK HANDICAP SYMBOL	5.00	EACH		$	
0520	23055N		REMOVE (2-STORY BRICK BUILDING STA. 3+50 RT. 41.00')	1.00	LS		$	
0530	23055N		REMOVE (2-STORY BLOCK BUILDING STA. 4+00 RT. 41.00')	1.00	LS		$	
0540	23055N		REMOVE (2-STORY BLOCK BUILDING STA. 4+00 RT. 68.00')	1.00	LS		$	
0550	23119EN		PEDESTRIAN SAFETY FENCE	36.00	LF		$	
0560	23158ES505		DETECTABLE WARNINGS	270.00	SQFT		$	
0570	24814EC		PIPELINE INSPECTION	4,030.00	LF		$	

Section: 0003 - DRAINAGE - STORM SEWER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0580	00521		STORM SEWER PIPE-15 IN	960.00	LF		$	
0590	00522		STORM SEWER PIPE-18 IN	897.00	LF		$	
0600	00524		STORM SEWER PIPE-24 IN	1,139.00	LF		$	
0610	00525		STORM SEWER PIPE-27 IN	260.00	LF		$	
0620	00526		STORM SEWER PIPE-30 IN	331.00	LF		$	
0630	00528		STORM SEWER PIPE-36 IN	443.00	LF		$	
0640	01011		NON-PERFORATED PIPE-6 IN	26.50	LF		$	
0650	01212		PIPE CULVERT HEADWALL-36 IN	1.00	EACH		$	
0660	01456		CURB BOX INLET TYPE A	35.00	EACH		$	
0670	01559		DROP BOX INLET TYPE 13G	1.00	EACH		$	
0680	01577		DROP BOX INLET TYPE 14	10.00	EACH		$	
0690	01643		JUNCTION BOX-24 IN	4.00	EACH		$	
0700	01644		JUNCTION BOX-30 IN	1.00	EACH		$	
0710	01645		JUNCTION BOX-36 IN	1.00	EACH		$	
0720	01647		JUNCTION BOX-48 IN	1.00	EACH		$	
0730	02483		CHANNEL LINING CLASS II	.43	TON		$	
0740	03385		PVC PIPE-6 IN	25.00	LF		$	

Section: 0004 - SEWER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0750	15023		S ENCASEMENT STEEL OPEN CUT RANGE 4 (16-IN)	120.00	LF		$	

PROPOSAL BID ITEMS

151280

Report Date 10/27/15

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0760	15060		S FORCE MAIN PVC 06 INCH	263.00	LF		$	
0770	15074		S FORCE MAIN TIE-IN 06 INCH	2.00	EACH		$	
0780	15092		S MANHOLE	12.00	EACH		$	
0790	15093		S MANHOLE ABANDON/REMOVE	11.00	EACH		$	
0800	15101		S MANHOLE WITH DROP (OUTSIDE)	1.00	EACH		$	
0810	15112		S PIPE PVC 08 INCH (PVC GRAVITY SEWER)	1,451.00	LF		$	
0820	15566		S LATERAL LONG SIDE 06 INCH INST	12.00	EACH		$	
0830	15568		S LATERAL SHORT SIDE 06 INCH INST	14.00	EACH		$	
0840	24518EC		CAP AND ABANDON (PLUG 8-IN SEWER LINE)	27.00	EACH		$	
0850	24518EC		CAP AND ABANDON (PLUG 6-IN FORCE MAIN)	2.00	EACH		$	

Section: 0005 - LIGHTING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0860	03381		PVC PIPE-2 IN	3,117.00	LF		$	
0870	04701		POLE 40 FT MTG HT	8.00	EACH		$	
0880	04720		BRACKET 4 FT	7.00	EACH		$	
0890	04725		BRACKET 15 FT	1.00	EACH		$	
0900	04740		POLE BASE	24.00	EACH		$	
0910	04750		TRANSFORMER BASE	8.00	EACH		$	
0920	04760		POLE W/SECONDARY CONTROL EQUIP	1.00	EACH		$	
0930	04780		FUSED CONNECTOR KIT	16.00	EACH		$	
0940	04820		TRENCHING AND BACKFILLING	3,117.00	LF		$	
0950	04832		WIRE-NO. 12	1,440.00	LF		$	
0960	04833		WIRE-NO. 8	5,430.00	LF		$	
0970	04940		REMOVE LIGHTING	1.00	LS		$	
0980	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	13.00	EACH		$	
0990	21543EN		BORE AND JACK CONDUIT	428.00	LF		$	
1000	24589ED		LED LUMINAIRE	8.00	EACH		$	

Section: 0006 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1010	14003		W CAP EXISTING MAIN (& ABANDON)	10.00	EACH		$	
1020	14014		W ENCASEMENT STEEL OPEN CUT RANGE 3 (12-IN)	145.00	LF		$	
1030	14019		W FIRE HYDRANT ASSEMBLY	1.00	EACH		$	
1040	14021		W FIRE HYDRANT REMOVE (EXISTING)	1.00	EACH		$	
1050	14028		W METER 3/4 INCH (CONSTRUCT WATER SERVICE SETTING)	21.00	EACH		$	
1060	14056		W PIPE PVC 02 INCH	10.00	LF		$	
1070	14059		W PIPE PVC 06 INCH	2,329.00	LF		$	
1080	14060		W PIPE PVC 08 INCH	211.00	LF		$	

PROPOSAL BID ITEMS

151280

Report Date 10/27/15

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1090	14089		W TAPPING SLEEVE AND VALVE SIZE 1 (TIE TO EXISTING 8-IN WET TAP)	1.00	EACH		$	
1100	14091		W TIE-IN 02 INCH (EXISTING, DRY TIE)	9.00	EACH		$	
1110	14094		W TIE-IN 06 INCH (EXISTING, DRY TIE)	9.00	EACH		$	
1120	14102		W VALVE 02 INCH	1.00	EACH		$	
1130	14105		W VALVE 06 INCH	11.00	EACH		$	
1140	21346ND		WATER SERVICE RECONNECT-3/4 IN-1 IN	21.00	EACH		$	
1150	24030EC		REMOVE VALVE (EXISTING GATE VALVE)	12.00	EACH		$	

Section: 0007 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1160	02568		MOBILIZATION	1.00	LS		$	
1170	02569		DEMOBILIZATION	1.00	LS		$	