



CALL NO. 111

CONTRACT ID. 204407

KENTON COUNTY

FED/STATE PROJECT NUMBER HSIP 5217 (17)

DESCRIPTION MADISON PIKE (KY 17)

WORK TYPE GRADE & DRAIN WITH ASPHALT SURFACE

PRIMARY COMPLETION DATE 7/31/2021

LETTING DATE: September 25,2020

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 am EASTERN DAYLIGHT TIME September 25,2020. Bids will be publicly announced at 10:00 am EASTERN DAYLIGHT TIME.

NO PLANS ASSOCIATED WITH THIS PROJECT.

DBE CERTIFICATION REQUIRED - 6%

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

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PART I
SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 06

CONTRACT ID - 204407

HSIP 5217 (17)

COUNTY - KENTON

PCN - 0605900172001

HSIP 5217 (17)

MADISON PIKE (KY 17) (MP 4.3) FROM 0.32 MLE NORTH OF KY 14 EXTENDING NORTH TO 1.53 MILES SOUTH OF KY 16 (MP 8.0), A DISTANCE OF 03.70 MILES.GRADE & DRAIN WITH ASPHALT SURFACE SYP NO. 06-09014.01.

GEOGRAPHIC COORDINATES LATITUDE 38:51:57.90 LONGITUDE -84:32:21.50

COMPLETION DATE(S):

COMPLETED BY 07/31/2021

APPLIES TO ENTIRE PROJECT

CONTRACT NOTES

PROPOSAL ADDENDA

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

BID SUBMITTAL

Bidder must use the Department's electronic bidding software. The Bidder must download the bid file located on the Bid Express website (www.bidx.com) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

JOINT VENTURE BIDDING

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

UNDERGROUND FACILITY DAMAGE PROTECTION

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. When prescribed in said directives, the contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom shall be contacted through their individual Protection Notification Center. Non-compliance with these directives can result in the enforcement of penalties.

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by [KRS 14A.9-010](#) to obtain a certificate of authority to transact business in the Commonwealth ("certificate") from the Secretary of State under [KRS 14A.9-030](#) unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the foreign entity is not required to obtain a certificate as provided in [KRS 14A.9-010](#), the foreign entity should identify the applicable exception. Foreign entity is defined within [KRS 14A.1-070](#).

For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity's solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.

Businesses can register with the Secretary of State at <https://secure.kentucky.gov/sos/ftbr/welcome.aspx>.

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by fax (502) 564-7299 or email to kytc.projectquestions@ky.gov. The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website (www.transportation.ky.gov/contract). The answers provided shall be considered part of this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

HARDWOOD REMOVAL RESTRICTIONS

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer. Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

ACCESS TO RECORDS

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially

disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004.

April 30, 2018

FEDERAL CONTRACT NOTES

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

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

CIVIL RIGHTS ACT OF 1964

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

NOTICE TO ALL BIDDERS

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free “hotline” Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the “hotline” to report such activities.

The “hotline” is part of the DOT’s continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SECOND TIER SUBCONTRACTS

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

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

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

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

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

DBE GOAL

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

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

OBLIGATION OF CONTRACTORS

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

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

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

CERTIFICATION OF CONTRACT GOAL

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

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

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

DBE PARTICIPATION PLAN

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

The DBE Participation Plan shall include the following:

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

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

UPON AWARD AND BEFORE A WORK ORDER WILL BE ISSUED

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

Changes to DBE Participation Plans must be approved by the Cabinet. The Cabinet may consider extenuating circumstances including, but not limited to, changes in the nature or scope of the project, the inability or unwillingness of a DBE to perform the work in accordance with the bid, and/or other circumstances beyond the control of the prime contractor.

CONSIDERATION OF GOOD FAITH EFFORTS REQUESTS

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder must submit a Good Faith Effort Package to satisfy the Cabinet that sufficient good faith efforts were made to meet the contract goals prior to submission of the bid. Efforts to increase the goal after bid submission will not be considered in justifying the good faith effort, unless the contractor can show that the proposed DBE was solicited prior to the letting date. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted. One complete set (hard copy along with an electronic copy) of this information must be received in the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Cabinet considers in judging good faith efforts. This documentation may include written subcontractors' quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The Good Faith Effort Package shall include, but may not be limited to information showing evidence of the following:

1. Whether the bidder attended any pre-bid meetings that were scheduled by the Cabinet to inform DBEs of subcontracting opportunities;
2. Whether the bidder provided solicitations through all reasonable and available means;
3. Whether the bidder provided written notice to all DBEs listed in the DBE directory at the time of the letting who are prequalified in the areas of work that the bidder will be subcontracting;
4. Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the Disadvantaged Enterprise Business Liaison Officer (DEBLO) in the Office of Civil Rights and Small Business Development to give notification of the bidder's inability to get DBE quotes;
5. Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise perform these work items with its own forces;
6. Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract;
7. Whether the bidder negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached;
8. Whether quotations were received from interested DBE firms but were rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE goals;
9. Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be subcontracted includes potential DBE participation;
10. Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal; and
11. Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

FAILURE TO MEET GOOD FAITH REQUIREMENT

Where the apparent lowest responsive bidder fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Good Faith Committee based upon the information submitted that the apparent lowest responsive bidder failed to make sufficient reasonable efforts to meet the contract goal, the bidder will be offered the opportunity to meet in person for administrative reconsideration. The bidder will be notified of the Committee's decision within 24 hours of its decision. The bidder will have 24 hours to request reconsideration of the Committee's decision. The reconsideration meeting will be held within two days of the receipt of a request by the bidder for reconsideration.

The request for reconsideration will be heard by the Office of the Secretary. The bidder will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The bidder will receive a written decision on the reconsideration explaining the basis for the finding that the bidder did or did not meet the goal or made adequate Good Faith efforts to do so.

The result of the reconsideration process is not administratively appealable to the Cabinet or to the United States Department of Transportation.

The Cabinet reserves the right to award the contract to the next lowest responsive bidder or to rebid the contract in the event that the contract is not awarded to the low bidder as the result of a failure to meet the good faith requirement.

SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT

Failure by the prime contractor to fulfill the DBE requirements of a project under contract or to demonstrate good faith efforts to meet the goal constitutes a breach of contract. When this occurs, the Cabinet will hold the prime contractor accountable, as would be the case with all other contract provisions. Therefore, the contractor's failure to carry out the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

- Disallow credit toward the DBE goal;
- Withholding progress payments;
- Withholding payment to the prime in an amount equal to the unmet portion of the contract goal; and/or
- Termination of the contract.

PROMPT PAYMENT

The prime contractor will be required to pay the DBE within seven (7) working days after he or she has received payment from the Kentucky Transportation Cabinet for work performed or materials furnished.

CONTRACTOR REPORTING

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to complete and submit a **signed and notarized** Affidavit of Subcontractor Payment (TC 18-7) and copies of checks for any monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These documents must be completed and signed within 7 days of being paid by the Cabinet.

Payment information that needs to be reported includes date the payment is sent to the DBE, check number, Contract ID, amount of payment and the check date. Before Final Payment is made on this contract, the Prime Contractor will certify that all payments were made to the DBE subcontractor and/or DBE suppliers.

******* IMPORTANT *******

Please mail the original, signed and completed TC (18-7) Affidavit of Subcontractor Payment form and all copies of checks for payments listed above to the following address:

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

The prime contractor should notify the KYTC Office of Civil Rights and Small Business Development seven (7) days prior to DBE contractors commencing work on the project. The contact in this office is Mr. Melvin Bynes. Mr. Bynes' current contact information is email address – melvin.bynes2@ky.gov and the telephone number is (502) 564-3601.

DEFAULT OR DECERTIFICATION OF THE DBE

If the DBE subcontractor or supplier is decertified or defaults in the performance of its work, and the overall goal cannot be credited for the uncompleted work, the prime contractor may utilize a substitute DBE or elect to fulfill the DBE goal with another DBE on a different work item. If after exerting good faith effort in accordance with the Cabinet's Good Faith Effort policies and procedures, the prime contractor is unable to replace the DBE, then the unmet portion of the goal may be waived at the discretion of the Cabinet.

PROHIBITION ON TELECOMMUNICATIONS EQUIPMENT OR SERVICES

In accordance with the FY 2019 National Defense Authorization Act (NDAA), 2 CFR 200.216, and 2 CFR 200.471, Federal agencies are prohibited, after August 13, 2020, from obligating or expending financial assistance to obtain certain telecommunications and video surveillance services and equipment from specific producers. As a result of these regulations, contractors and subcontractors are prohibited, on projects with federal funding participation, from providing telecommunication or video surveillance equipment, services, or systems produced by:

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities)
- Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities)

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – CARGO PREFERENCE ACT (CPA).

(REV 12-17-15) (1-16)

SECTION 7 is expanded by the following new Article:

102.10 **Cargo Preference Act – Use of United States-flag vessels.**

Pursuant to Title 46CFR Part 381, the Contractor agrees

- To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

- To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

- To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

ASPHALT MIXTURE

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

DGA BASE

Unless otherwise noted, the Department estimates the rate of application for DGA Base to be 115 lbs/sy per inch of depth.

OPTION B

Be advised that the Department will control and accept compaction of asphalt mixtures furnished on this project under OPTION B in accordance with Sections 402 and 403.

SPECIAL NOTE FOR AWARD OF CONTRACT

In accordance to section 103.02 of the Standard Specifications for Road and Bridge Construction, the Department may hold and not award the contract for a period not to exceed sixty (60) calendar days from the date of letting.

SPECIAL NOTES APPLICABLE TO THE PROJECT KENTON COUNTY – KY 17

Item 6-9014.01

DESCRIPTION OF WORK

Perform all work in accordance with the Department's 2019 Standard Specifications, Supplemental Specifications, Applicable Special Provisions, and Applicable Standard and Sepia Drawings, except as hereafter specified. Furnish all materials, labor, equipment, and incidentals for the following work:

Sight Distance Improvements. Two areas have been identified along the route where the hillside slopes limit the horizontal sight distance available to drivers. Corrective work will include the placement of a one foot width of crushed stone base shoulder (full depth with one and a half foot minimum of depth) outside of the edge of pavement with a 4:1 traversable side slope, a 3 foot wide ditch, and a maximum back slope of 2:1 can be used. Other items required for this work include asphalt seal coat and aggregate slope protection, and drainage ditches with Class II Channel Lining. Additional right-of-way has been acquired to accommodate the proposed work.

KY 2042 Realignment. The existing intersection of KY 17 and KY 2042, is at an approximate 45 degree skew, with curves to the north and south. The proposed realignment will make KY 2042 perpendicular with KY 17, improving sight distance and driver comfort. The proposed realignment work includes two-11 foot lanes, 2 foot paved shoulders and 4 foot unpaved shoulders. New drainage ditches, an entrance pipe, and culvert pipe with sloped & mitered headwalls will be constructed with the roadway work. Other items required for this work include full depth dense graded aggregate shoulders with asphalt seal coat and aggregate slope protection, tree removal and pavement striping. Additional right-of-way has been acquired to accommodate the proposed work.

The work also includes the removal of existing sheet signs, as identified on the signing plans and is included in the KY 2042 Summary. The installation of new signing is shown on the signing plans and summary. See Special Note for Staking and Special Note for Signing for additional information.

Water Line Relocation. The work will include relocation of the existing 8" water line along the realignment of KY 2042 with KY 17. The work shall be within the existing right of way. A separate plan set with specifications (included within the proposal) is included to direct this work. For the 16" water line along KY 17 at the two sight distance improvement areas, a minimum of 3 foot of cover over the existing water main should be maintained. Where existing fire hydrants exist, valves and hydrants are known to be anchored to the tee. Maintain 30 inches minimum of cover to keep from freezing.

Special Notes Applicable To The Project
Page 2 of 2

CAUTION

The information in this proposal shown on the Plan Sheets, Cross Section Sheets, and other Detail Sheets, and as summarized in the various Summary Sheets, as well as the type of work listed herein are approximate only and are not to be taken as a completely accurate evaluation of the materials and conditions to be encountered during construction; the bidder must draw his/her own conclusions. The Department does not give any guarantee as to the accuracy of the data and no claim for money or time extension will be considered if the conditions encountered are not in accordance with the information shown.

ON-SITE INSPECTION

Before submitting a bid for the work, make a thorough inspection of the site and determine existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid to be evidence of this inspection having been made. The Department will not honor claims for money or time extension resulting from site conditions.

STATIONING

The contractor is advised that the planned locations of work were established from a beginning station number; Sta. 24+02 at MP 3.974 (north of KY 17 with KY 14). The existing reference mile markers may not correspond to the established work locations.

PROPERTY DAMAGE

The contractor shall be responsible for all damage to public and/or private property resulting from the work. Repair or replace damaged roadway features in like kind materials and design as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.

UTILITIES

The contractor is advised that there are locations of overhead and underground utilities on the project. These utilities should be avoided on the project. If any utility is impacted, it will be the contractor's responsibility to contact the affected utility and cover any costs associated with the impact.

SPECIAL NOTE FOR EROSION CONTROL

I. DESCRIPTION

Perform all erosion and water pollution control work in accordance with any other notes in the Proposal, the Department's Standard and Interim Supplemental Specifications, the Special Provisions and Special Notes, and the Standard and Sepia Drawings, current editions, or as directed by the Engineer. Section references are to the Standard Specifications. This work shall consist of:

(1) Developing and preparing a Best Management Practices Plan (BMP) tailored to suit the specific construction phasing for each site within the project; (2) Preparing the project site for construction, including locating, furnishing, installing, and maintaining temporary and/or permanent erosion and water pollution control measures as required by the BMP prior to beginning any earth disturbing activity on the project site; (3) Clearing and grubbing and removal of all obstructions as required for construction; (4) Removing all erosion control devices when no longer needed; (5) Restoring all disturbed areas as nearly as possible to their original condition; (6) Preparing seedbeds and permanently seeding all disturbed areas; (7) Providing a Kentucky Erosion Prevention and Sediment Control Program (KEPSC) qualified inspector; and (8) Performing any other work to prevent erosion and/or water pollution as specified by this contract, required by the BMP, or as directed by the Engineer.

II. MATERIALS

Furnish materials in accordance with these notes, the Standard Specifications and Interim Supplemental Specifications, applicable Special Provisions and Special Notes, and the Standard and Sepia Drawings, current editions. Provide for all materials to be sampled and tested in accordance with the Department's Sampling Manual. Unless directed otherwise by the Engineer, make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing.

III. CONSTRUCTION

Be advised, these Erosion Control Notes do not constitute a BMP plan for the project. Jointly with the Engineer, prepare a site specific BMP plan for each drainage area within the project in accordance with Section 213. Provide a unique BMP at each project site using good engineering practices taking into account existing site conditions, the type of work to be performed, the construction phasing, methods, and the techniques to be utilized to complete the work. Be responsible for all erosion prevention, sediment control, and water pollution prevention measures required by the BMP for each site. Represent and warrant compliance with the Clean Water Act (33 USC Section 1251 et seq.), the 404 Permit, the 401 Water Quality Certification, and applicable state and local government agency laws, regulations, rules, specifications, and permits. Contrary to Section 105.05, in case of discrepancy between these notes, the Standard Specifications, Interim Supplemental Specifications, Special Provisions and Special Notes, Standard and Sepia Drawings, and such state and local government agency requirements, adhere to the most restrictive requirement.

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Conduct operations in such a manner as to minimize the amount of disturbed ground during each phase of the construction and limit the haul roads to the minimum required to perform the work. Preserve existing vegetation not required to be removed by the work or the contract. Seed and/or mulch disturbed areas at the earliest opportunity. Use silt fence, silt traps, temporary ditches, brush barriers, erosion control blankets, sodding, channel lining, and other erosion control measures in a timely manner as required by the BMP and as directed or approved by the Engineer. Prevent sediment laden water from leaving the project, entering an existing drainage structure, or entering a stream.

Provide for erosion control measures to be in place and functioning prior to any earth disturbance within a drainage area. Compute the volume and size of silt control devices necessary to control sediment during each phase of construction. All silt control devices shall be sized to retain a volume of 3,600 cubic feet per disturbed contributing acre. Remove sediment from silt traps before they become a maximum of ½ full. Maintain silt fence by removing accumulated trappings and/or replacing the geotextile fabric when it becomes clogged, damaged, or deteriorated, or when directed by the Engineer. Properly dispose of all materials trapped by erosion control devices at approved sites off the right of way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

As work progresses, add or remove erosion control measures as required by the BMP, applicable to the Contractor's project phasing, construction methods, and techniques. Update the volume calculations and modify the BMP as necessary throughout the duration of the project. Ensure that an updated BMP is kept on site and available for public inspection throughout the life of the project.

The required volume at each Silt Trap shall be computed based on the Up Gradient Contributing Areas that are disturbed and/or stabilized to the satisfaction of the Engineer. The required volume calculation for each Silt Trap shall be determined by the Contractor and verified by the Engineer. The required volume at each Silt Trap may be reduced by the following amounts:

- Up Gradient Areas not disturbed (acres)
- Up Gradient Areas that have been reclaimed and protected by Erosion Control Blanket or other ground protection material such as Temporary Mulch (acres)
- Up Gradient Areas that have been protected by Silt Fence (acres) – Areas protected by Silt Fence shall be computed at a maximum rate of 100 square feet per linear foot of Silt Fence
- Up Gradient Areas that have been protected by Silt Traps (acres)

The use of Temporary Mulch is encouraged.

Silt Trap Type B shall always be placed at the collection point prior to discharging into a Blue Line Stream or onto an adjacent Property Owner. Where overland flow exists, a Silt Fence or other filter devices may be used.

After all construction is complete, restore all disturbed areas in accordance with Section 212. Completely remove all temporary erosion control devices not required as part of the permanent erosion control from the construction site. Prior to removal, obtain the Engineer's concurrence of items to be removed. Grade the remaining exposed earth (both on and off the Right-of-Way) as nearly

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as possible to its original condition, or as directed by the Engineer. Prepare the seed bed areas and sow all exposed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

IV. MEASUREMENT

The Department will measure the various erosion control items according to Section 212.04 and Section 213.04, as applicable.

V. BASIS OF PAYMENT

The Department will make payment for the various erosion control items according to Section 212.04 and Section 213.04, as applicable.

SPECIAL NOTE FOR SIGNING

I. DESCRIPTION

Except as provided herein, this work shall be performed in accordance with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD), the Department's current Standard Specifications and Interim Supplemental Specifications, applicable Standard and Sepia Drawings, and applicable Special Provisions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

- (1) Maintaining and Controlling Traffic; (2) Furnish, Fabricate, and Erect Signs; and
- (3) All other work specified in the Contract.

II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Erosion Control.** See Special Note for Erosion Control.

III. CONSTRUCTION METHODS

- A. **Maintain and Control Traffic.** See Traffic Control Plan.
- B. **Site Preparation.** Be responsible for all site preparation including, but not limited to: clearing and grubbing, staking, excavation, backfill, and removal of obstructions or any other material not covered by other items. Perform all site preparation only as approved, or directed, by the Engineer.
- C. **Staking.** See Special Note for Staking.
- D. **Signs and Posts.** Before beginning installation, the Contractor shall furnish to the Engineer drawings, descriptions, manufacturer's cuts, etc. covering all material to be used. Mill test reports for beams, steel panels, and each different gauge of aluminum or steel sheeting used must be submitted to the Division of Construction and approved prior to erection.

Fabricate sheet signs from .080 or .125 gauge aluminum alloy 5052-H38 or 6061-T6, in accordance with ASTM B-209, and to the size and shape specified. Prepare the side of the sheet to be used as the sign face to receive the retroreflective background material

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according to the recommendations of the sheeting and retroreflective material manufacturer(s). Sheeting used as background material for sign faces is to be the color specified and visually in accordance with the standard requirements of ASTM D-4956, and meet the requirements of Section 830 of the Standard Specifications. Contrary to Section 830.02.06, only the types and colors of sheeting as specified in the proposal will be accepted. All retroreflective material shall be fabricated and assembled in accordance with the specifications and/or recommendations of the manufacturer(s).

All hardware for the erection of sheeting signs shall be rust resistant: stainless steel, zinc coated, aluminum, or an Engineer approved material. All beams and posts shall be of sufficient lengths to extend from the top of the sign to the required embedment in the anchor. Splicing of the sign post shall NOT be allowed. For installations in soil, Type I steel posts shall be mounted on either a standard anchor, with soil stabilizer plate, or on a Type D breakaway sign support. Refer to Sheeting Sign Detail Sheet 1 of 2 for installation details for a standard anchor with soil stabilizer plate. When installing a standard anchor with soil stabilizer plate, if solid rock is encountered, the Contractor shall drill a hole to the required depth into the rock, install the anchor into the hole, and backfill the anchor post with concrete, or other method approved by the Engineer. The cost shall be incidental to Type I steel post, and a soil stabilizer plate will not be required. Refer to Standard Drawing RGX-065, current edition, for installation details of Type D breakaway sign supports. Approved manufacturers for Type D breakaway sign supports have been placed on the list of approved materials. For installations on existing concrete, such as a sidewalk, concrete median, etc., Type I steel posts shall be mounted on a Type D surface mount. For Type D surface mounts use only Kleen Break Model 425 for Surface Mount Concrete Installations by Xcessories Squared of Auburn, IL. Prior to installation, the Contractor shall submit to the Engineer shop drawings of the Type D surface mount(s). Install the Type D surface mount(s) according to all the applicable requirements of the manufacturer (see shop drawings). All steel post shall meet the requirements of Section 832. All hardware including, but not limited to, sign post anchors, soil stabilizer plates, nuts, bolts, washers, fasteners, fittings, and bracing, or any other incidentals necessary to erect the signs shall be furnished by the Contractor and will be incidental to the work.

New concrete bases, posts, support anchors, signs, etc. are to be installed prior to dismantling any existing sign(s). The removal of existing signs, posts, and support anchors is to be performed concurrently with the installation of new signs, posts, and support anchors, under the same lane closure during the same work shift. Completely remove existing sign support anchors or remove them to a minimum depth of six (6) inches below existing ground line and backfill the disturbed area to the existing ground line.

When listed in the summaries, Reflective Sign Post Panels shall be 2" wide x 60" tall (or 84" tall for urban installations) and shall have three 3/8" holes (one hole in the top 3", one hole near the center, and one hole in the bottom 3") that align with the holes on the Type I steel post. Sheeting for the Reflective Sign Post Panels shall be the same Type and color as the sign installed on the post. Examples include:

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- Red, fluorescent yellow, and fluorescent yellow-green (Type XI Sheeting)
- White and yellow (Type XI Sheeting).

All manufactured sheeting signs shall be free of visual defects including, but not limited to: cracks, tears, ridges, humps, discoloration, etc., and defective signs shall be replaced at no additional cost to the Department.

All sign blanks shall be hole punched by the manufacturer for either horizontal or vertical installation. Attach all aluminum sheeting signs to square post with 3/8" all steel rivets and nylon washers.

Post will be attached to the anchor with 5/16" corner bolts and 5/16" flanged nuts, and all post and anchor cuts shall be treated with a Cold Galvanizing Compound spray.

Sign posts shall be erected vertically by using a bubble level. The tolerance shall be a two (2) degree angle in any direction. For locations where there are more than one sign is mounted beside each other, the posts shall be spaced to provide approximately six inches (6") of spacing between signs.

- E. Property Damage.** The Contractor shall be responsible for all damage to public and/or private property resulting from the Contractor's activities. Repair or replace damaged roadway features in like kind materials and design as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.
- F. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs due to the Contractor's operations at no additional cost to the Department. NOTIFY THE ENGINEER AND THE UTILITY OWNER(S) IMMEDIATELY WHEN IT IS DISCOVERED OR ANTICIPATED THAT ANY UTILITY CONFLICT COULD DELAY THE CONTRACTOR'S OPERATIONS. If the total delay exceeds ten working days, an extension of the specified completion date will be negotiated with the Contractor for delay to the Contractor's work; however, no extension will be granted for any delay caused by the Contractor's failure to notify the Engineer and/or the utility company as specified above when a conflict is discovered or anticipated as specified.

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G. Caution. The information in this proposal and the type of work listed herein are approximate only and are not to be taken as an exact evaluation of the materials and conditions to be encountered during construction; the bidder must draw his/her own conclusions when developing the Unit Bid Prices for each bid item. As such, if the conditions encountered are not in accordance with the information shown, the Department does not guarantee any changes to the Unit Bid Prices nor extension of the contract will be considered. The Department will pay for bid item quantity overruns, but only if pre-approved by the Engineer.

H. Control. Perform all work under the absolute control of the Department. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces, and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties.

Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and the Engineer's decision shall be final and binding upon the Contractor.

I. Clean Up, Disposal of Waste. Clean up the project area as work progresses. Dispose of all removed concrete, debris, and other waste as per Section 204.03.08. The Department will incur no cost to obtain the disposal sites. The Department will NOT make direct payment for disposal of waste and debris from the project. Existing anchors, signs, posts, and any other hardware or material removed from the site are to become the property of the Contractor. See Special Provision for Waste and Borrow Sites.

J. Final Dressing, Seeding and Protection. Grade all disturbed areas to blend with the adjacent roadways features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

K. Erosion Control. See Special Note for Erosion Control.

IV. METHOD OF MEASUREMENT

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

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- B. Site Preparation.** Other than the bid items listed, the Department will NOT measure Site Preparation for payment, but shall be incidental to the project bid items.
- C. Signs.** The Department will measure the finished in-place area of signs in Square Feet.
- D. Sign Posts.** The Department will measure the finished in-place length of sign posts in Linear Feet, from the top of the anchor, or top of the sign support, to the top of the sign post. Laps, cutoffs, excess, and waste will NOT be measured for payment.
- E. Type D Breakaway Sign Supports.** The Department will measure Type D sign supports as Each support installed.
- F. Type D Surface Mounts.** The Department will measure Type D Surface Mounts as Each surface mount installed.
- G. Class A Concrete for Signs.** The Department will measure the Class A Concrete used in conjunction with Type D breakaway sign support installations in Cubic Yards. Any concrete that is required as backfill due to hitting rock during a standard installation shall be incidental to the bid item STEEL POST TYPE I, and soil stabilizers will not be required.
- H. Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental. Seeding and Protection shall be measured according to Section 212.
- I. Erosion Control.** See Special Note for Erosion Control.
- J. Remove Sign.** The Department will consider all signs attached to one or more connected posts as a single sign. The Department will measure as Each sign assembly removed and NOT each individual sign removed.
- K. Items Provided by KYTC.** The Department will NOT measure for payment the installation of signs and/or surface mounts provided by KYTC. These activities shall be incidental to the bid item STEEL POST TYPE I.

V. BASIS OF PAYMENT

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Signs.** The Department will make payment for the completed and accepted quantities under the bid item SBM ALUM SHEET SIGNS .125 IN or .080 IN. The Department will consider payment full compensation for all work and incidentals necessary to install the

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signs, as required by these notes and the details found elsewhere in the proposal, at the locations indicated on the summary sheets, plans, and/or as directed by the Engineer.

- C. Sign Posts.** The Department will make payment for the completed and accepted quantities under the bid item STEEL POST TYPE I. The Department will consider payment full compensation for all work and incidentals necessary to install the sign posts as required by these notes and the details found elsewhere in the proposal.
- D. Type D Breakaway Sign Supports.** The Department will make payment for the completed and accepted quantities under the bid item GMSS TYPE D. The Department will consider payment full compensation for all work and incidentals necessary to install the Type D breakaway sign supports as required by Standard Drawing RGX-065, current edition.
- E. Type D Surface Mounts.** The Department will make payment for the completed and accepted quantities under the bid item GMSS TYPE D Surface Mount. The Department will consider payment full compensation for all work and incidentals necessary to install the Type D surface mounts according to all applicable manufacturer requirements.
NOTE: There are two permissible Type D Surface Mount alternatives: Kleen Break Model 425 for Surface Mount Concrete Installations by Xcessories Squared of Auburn, IL
- F. Class A Concrete for Signs.** The Department will make payment for the completed and accepted quantities, used in conjunction with Type D breakaway sign support installations, under the bid item CLASS A CONCRETE FOR SIGNS. The Department will consider payment full compensation for all work and incidentals necessary to install the concrete as required by Standard Drawing RGX-065, current edition.
- G. Remove Sign.** The Department will make payment for the completed and accepted quantities under the bid item REMOVE SIGN. The Department will consider payment full compensation for all work and incidentals necessary to remove the existing signs, posts, anchors, and any other sign material or hardware, from the locations indicated on the summary sheets, plans, and/or as directed by the Engineer.
- H. Erosion Control.** See Special Note for Erosion Control.

SPECIAL NOTE FOR STAKING

Perform Contractor Staking according to Section 201; except, in addition to the requirements of Section 201, perform the following:

1. Contrary to Section 201, perform items 1-3 usually performed by the Engineer.
2. Using the proposed pavement superelevation rates, runout, and runoff lengths, determine the necessary changes in pavement edge elevation along the curves and the transitions leading into and out of the curve to achieve the proposed superelevation improvements. The intent is to provide a consistent superelevation throughout the curves and smooth transitions into and out of the curves. Once the proposed changes in pavement edge elevations are determined and prior to starting paving operations, verify the proposed roadside re-grading along the curve can be constructed so that the new roadside is flush with the new pavement edge elevation and the new toe of slope, or top of cut, will remain within the existing Right-of-Way and/or not impact a sensitive obstruction. If necessary, and with the approval of the Engineer, reduce the proposed superelevation rate of a curve if the new edge of pavement elevation will cause the new roadside grading to extend beyond the Right-of-Way and/or impact a sensitive obstruction. Alternatively, with the approval of the Engineer and to the extent allowable by the "Ditching & Shouldering and Embankment Benching Details" and/or the Special Note for Ditching & Shouldering, the Contractor may be allowed to make adjustments to the roadside grading so the proposed roadside re-grading will remain within the existing Right-of-Way and/or not impact a sensitive obstruction. After the final proposed changes in pavement edge elevations are determined and before paving operations begin, submit to the Engineer and obtain approval for the number of asphalt lifts, each asphalt lift's thickness, and the mix design of each lift of Leveling & Wedging the contractor plans to use to achieve the superelevation improvement. Ensure positive drainage upon completion of the work.
3. Verify the dimensions, type, and quantities of the culvert pipes, entrance pipes, and/or box culverts as listed and detailed in the proposal, and determine flow line elevations and slopes necessary to provide positive drainage. Revise as necessary to accommodate the existing site conditions; to provide proper alignment of the drainage structures with existing and/or proposed ditches, stream channels, swales, and the roadway lines and grades; and to ensure positive drainage upon completion of the work.
4. Using stakes, paint marks on the pavement, mag nails, and/or any other means approved by the Engineer, the Contractor shall mark and/or stake the proposed sign locations in the field. NOTE: The proposed signs are listed in the proposal by approximate location and are NOT to be taken as the exact location for the signs. During staking operations the Contractor shall review the signing layout and existing field conditions and look for potential conflicts, including but not limited to utilities, driveways, visual obstructions, etc. When conflicts are found, adjust the staked location of signs to mitigate conflicts. Because the sign locations in the proposal are approximate and the location of some signs may need to be adjusted due to conflicts, during staking operations the Contractor shall refer to and utilize the information in the Manual on Uniform on Traffic Control Devices

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(MUTCD), current edition. The MUTCD cover items such as: appropriate sign location, advance placement distances, and spacing requirements for signing. The intent is for the proposed signs to be consistent with, and meet the requirements of, the MUTCD. Once the proposed sign locations have been staked, notify and coordinate with the District Traffic Engineer, and perform a review of the staked locations. Adjust the staked locations, as directed by the District Traffic Engineer and obtain approval of the final staked locations. This review will also be used to determine if there are any existing signs that require removal and/or relocation. Provide the District Traffic Engineer with 2 weeks of notice when a route will be ready for a review of the staked locations. NOTE: The District Traffic Engineer may determine that the proposed signing, including sign types and messages, needs to be adjusted and/or modified from what is shown in the proposal. Therefore, the Contractor shall not order any sign material for a route until the route has been staked and final sign location approval has been given by the District Traffic Engineer.

5. Produce and furnish to the Engineer "As Built" information for the superelevation improvements and the drainage improvements. For superelevation improvements, as built information will consist of a record of the final pavement cross slopes every 50 feet, for each lane of travel along the curves and the transitions into and out of the curves. Elevation data of the curve improvements is not necessary; simply the cross slope percentage every 50 feet. For the drainage improvements, as built information will consist of a final record of the actual types, sizes, and locations of the drainage structures (i.e. box inlets, headwalls, junction boxes, etc.), culvert pipes, and/or box culverts constructed. Final elevation data of the drainage improvements is not necessary.
6. Using paint marks on the pavement, and/or any other means approved by the Engineer, the Contractor shall layout and pre-mark the proposed striping, pavement markings, etc. Adjust as necessary to accommodate the existing site conditions and to provide proper alignment of the proposed thru and turning lanes. Obtain approval of the pre-marked layout from the Engineer and/or District Traffic Engineer prior to installing the striping and/or pavement markings.
7. Prior to incorporating into the work, obtain the Engineers approval of all revisions determined by the Contractor.
8. Perform any and all other staking operations required to control and construct the work.

SPECIAL NOTE FOR TREE, STUMP, AND BRUSH REMOVAL

I. DESCRIPTION

All work shall be performed in accordance with the Department's current Standard Specifications for Road and Bridge Construction and applicable Special Provisions, except as hereafter specified. Article references are to the Standard Specifications.

This work shall consist furnishing all equipment, labor, materials, and incidentals for the following: (1) Site Preparation; (2) Maintaining and controlling traffic; (3) Temporary erosion control and temporary pollution control; (4) Cutting, trimming, and/or removing trees, stumps, and/or brush as specified or directed by the Project Engineer; (5) Treating all cut stumps required by Project Engineer to prevent re-sprouting; (6) Clean up and disposal of waste; (7) Final dressing and seeding and protection; and (8) all other work specified in the Contract.

II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

- A. Maintain and Control Traffic.** The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.
- B. Seeding and Protection.** Use applicable Seed Mixture as specified per Section 212.03.03.
- C. Erosion Control.** See the Special Note for Erosion Control.

III. CONSTRUCTION METHODS

- A. Maintain and Control Traffic.** The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.
- B. Cutting and/or Removing Trees and/or Stumps.** The Contractor shall cut and/or remove the trees and/or stumps as indicated on the Plans or in the Proposal, or as directed by the Engineer. Cut trees as close to the ground as possible; three inches (3") or less from ground line. All tree stumps within the mowing zone shall be removed via mechanical grinding, or other methods approved by the Engineer, to a minimum depth of four (4) inches below the surrounding grade line. For trees that are cut, but will not be required to have their stump removed, treat the stump, within one hour of cutting, with the herbicide solution specified below.

Tree, Stump, & Brush Removal Page 2 of 5

Replace and level any and all soil disturbed during the tree, stump, and/or brush removal operations. Leave the soil in a condition suitable for seeding that is level with the surrounding soil grade, with no holes or indentions to catch water or present unsafe mowing conditions. This work will be incidental to the bid items "Remove Trees or Stumps."

NOTE: Tree cutting restrictions apply. See the Special Note for Tree Removal for details on the restrictions.

- C. Removal of Tree, Stump, and Brush Debris.** The Contractor will remove all debris and biomass from the cutting and/or removal of trees, stumps, and/or brush from the work site and dispose of such off the right-of-way in accordance with local, state, and federal solid waste laws and regulations. Cleanup and remove all existing downed trees and brush located within the designated areas. At the discretion of the Project Engineer, the contractor may be permitted to chip and blow biomass onto non-mowing zones. Chips shall not be blown onto areas that would potentially restrict the flow of water in drainage ditches. All un-chipped biomass must be removed from roadway right-of-ways.

The Contractor shall keep the work zone free of accumulated waste material and debris at all times. Remove and dispose of all tree, stump, and brush chips off the right-of-way. Remove and dispose of all debris and waste material off the right-of-way as work is completed and at the end of each workday. Remove desirable wood pieces from the right-of-way at the end of each workday. Stockpile trees and brush off the right-of-way. At the discretion of the Project Engineer, the Contractor may be permitted to stockpile trees and brush at approved locations along the right-of-way.

The Contractor shall immediately correct any disturbance to all drainage features and structures caused by the Contractor's work.

- D. Stump Treatment.** Within one hour of cutting, the Contractor shall apply a stump treatment mix consisting of fifty percent (50%) Glyphosate (EPA Reg. No. 524-579) with water and add twelve (12) ounces of Imazapyr (EPA Reg. No. 241-431), as specified, per gallon of solution. The addition of a non-ionic surfactant 5% (v/v) shall be added to the solution to increase uptake of the herbicide solution into the root system. Generic formulations are not acceptable. Mix the herbicide solution in the presence of the Inspector. Include a color indicator in the herbicide solution to mark the treated stumps. Spray or paint the herbicide solution onto all cut stumps within one hour after cutting. Apply the herbicide solution in a manner to avoid drift onto surrounding vegetative ground cover. Stumps in the mowing zone, designated for mechanical grinding treatment, need not receive the herbicide treatment.

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Provide herbicide material for the treatment of cut stumps meeting the following criteria:

a. Glyphosate

Active ingredient: **(Glyphosate)**

*Glyphosate, N-(phosphonomethyl)glycine, in the form of its potassium salt.....	48.7%
Inert ingredients	51.3%
Total	100.0%

* Contains 660 grams per liter or 5.5 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its potassium salt. Equivalent to 540 grams per liter or 4.5 pounds per U.S. gallon of the acid, glyphosate.
EPA Reg. No. 524-579

b. Imazapyr

Active ingredient: **(Imazapyr)**

*Isopropylamine salt of Imazapyr 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid	26.7%
Inert ingredients	73.3%
Total	100%

* Equivalent to 21.8 percent 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazolyl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.
EPA Reg. No. 241-431

KRS 217B requires that any individual who applies pesticides to Kentucky Highway Right-of-Way areas must be certified as a Pesticide Applicator under Category 6 guidelines. Comply with all current laws and regulations established by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and by KRS 217B that regulate the handling, use, and application of pesticides.

E. Property Damage. The Contractor will be responsible for all damage to public and/or private property resulting from his work.

F. Coordination with Utility Companies. NOTICE: Utility locations shown in the plans are approximate and have not been specifically located by the Department. Locate all underground, above ground and overhead utilities prior to beginning construction. The Contractor shall have the responsibility for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Utility Owner while they relocate their facilities. The Contractor shall be responsible for repairing all utility damage that occurs as a result of his operations.

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- G. Right-of-Way Limits.** The exact limits of the Right-of-Way have not been established by the Department. The Contractor shall limit his activities to obvious Right-of-Way, permanent or temporary easements, and any work areas secured by consent and release of the adjacent property owners. The Contractor shall be responsible for all encroachments onto private lands.
- H. Clean Up, Disposal of Waste.** Clean up and dispose of all removed debris by the end of each work day, and other waste as per Section 204.03.08. The Department will incur no cost to obtain the disposal sites. The Department will NOT make direct payment for clean up or disposal of waste and debris from the project. See the Special Provision for Waste and Borrow Sites.
- I. Final Dressing, Seeding and Protection.** Apply final dressing, class A to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the appropriate Seed Mixture as specified in Section 212.03.03.
- J. Erosion Control.** See the Special Note for Erosion Control.

IV. METHOD OF MEASUREMENT

- A. Maintain and Control Traffic.** See the Traffic Control Plan.
- B. Site preparation.** Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to the project bid items.
- C. Remove Trees or Stumps.** The Department will measure the quantity as Each tree and/or stump removed. Trees and/or stumps to be measured under this bid item are only those trees and/or stumps indicated on the Plans or in the Proposal, or as directed by the Engineer.
- D. Stump Treatment.** The Department will NOT measure for payment the operation of Stump Treatment. This activity shall be incidental to the bid item "Remove Trees or Stumps".
- E. Clean Up, Disposal of Waste.** The Department will NOT measure for payment the operations of Clean Up and Disposal of Waste. These activities shall be incidental to the project bid items.
- F. Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the operations of Final Dressing. Seeding and Protection will be measured according to Section 212.
- G. Erosion Control.** See the Special Note for Erosion Control.

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V. BASIS OF PAYMENT

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

B. Remove Trees or Stumps. The Department will make payment for the completed and accepted quantities of Each tree and/or stump removed. The Department will consider payment at the contract unit price as full compensation for furnishing all materials, equipment, labor, other expenses, and all incidentals necessary to complete the work of removing the trees and/or stumps.

C. Erosion Control. See the Special Note for Erosion Control.

SPECIAL NOTE

For Tree Removal

Kenton County

**SLOPE LAYBACK TO IMPROVE SIGHT DISTANCE ALONG KY 17,
REALIGNMENT OF THE KY 17 AND KY 2042 INTERSECTION, AND
UPDATE SIGNING.**

Item No. 6-9014.01

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

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

SPECIAL NOTES FOR COMPLETION DATES & LIQUIDATED DAMAGES

The ultimate fixed completion date for this project will be **July 31, 2021**. Liquidated Damages for failure to complete the project on time will be assessed following Section 108.09.

In addition to the requirements of Section 108.09, the Department will assess Liquidated Damages in the amount of **\$1,000** per hour for each hour, or fraction of an hour, for any and all road closures that are in place beyond the time frame(s) noted in the Traffic Control Plan and approved by the Engineer.

Trees and/or bushes that are 5 inches or greater (diameter at breast height) shall not be cut or trimmed between June 1ST and July 31ST. Any trees and/or bushes that are cut or trimmed between June 1ST and July 31ST will **NOT** receive payment at the contract unit price. Furthermore, failure to adhere to these restrictions shall result in Liquidated Damages in the amount of **\$344** per affected tree as mitigation to the Indiana Bat Conservation Fund for the loss of habitat. Activities that are a part of this contract that do not involve the initial trimming and/or cutting of trees and/or bushes will be permitted under the ultimate fixed completion date.

Contrary to Section 108.09, Liquidated Damages will be assessed for the months of December through March.

Contrary to Section 108.09, Liquidated Damages will be assessed regardless of whether seasonal limitations prohibit the Contractor from performing work on the controlling operation.

All liquidated damages will be applied accumulatively.

All other applicable portions of Section 108 apply.

SPECIAL PROVISION FOR WASTE AND BORROW SITES

Obtain U.S. Army Corps of Engineer's approval before utilizing a waste or borrow site that involves "Waters of the United States". The Corps of Engineers defines "Waters of the United States" as perennial or intermittent streams, ponds or wetlands. The Corps of Engineers also considers ephemeral streams, typically dry except during rainfall but having a defined drainage channel, to be jurisdictional waters. Direct questions concerning any potential impacts to "Waters of the United States" to the attention of the appropriate District Office for the Corps of Engineers for a determination prior to disturbance. Be responsible for any fees associated with obtaining approval for waste and borrow sites from the U.S. Army Corps of Engineer or other appropriate regulatory agencies.

1-296 Waste & Borrow Sites
01/02/2012

COORDINATION OF WORK WITH OTHER CONTRACTS

Be advised, there may be an active project(s) adjacent to or within this project. The Engineer will coordinate the work of the Contractors. See Section 105.06.

1-3193 Coordination Contracts
01/02/2012

SPECIAL NOTE FOR DOUBLE ASPHALT SEAL COAT

Use RS-2 or RS-2C asphalt material that is compatible with the seal aggregate. Apply the first course of asphalt seal coat at the rate of 3.2 lbs/sy of asphalt and 30 lbs/sy of size #78 seal coat aggregate. Apply the second course at 2.8 lbs/sy of asphalt and 20 lbs/sy of size #9M seal coat aggregate. The Engineer may adjust the rate of application as conditions warrant. Use caution in applying liquid asphalt material to avoid over spray getting on curbs, gutter, barrier walls, bridges, guardrail, and other roadway appurtenances.

The Department will not measure any surface preparation required prior to applying the asphalt seal coat, but shall be incidental to “Asphalt Material for Asphalt Seal Coat”.

1-3215 Double Asphalt Seal Coat
01/02/2012

**SPECIAL NOTE FOR
ASPHALT MILLING AND TEXTURING**

Begin paving operations within **48 hours** of commencement of the milling operation. Continue paving operations continuously until completed. If paving operations are not begun within this time period, the Department will assess liquidated damages at the rate prescribed by Section 108.09 until such time as paving operations are begun.

Take possession of the millings and recycle the millings or dispose of the millings off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department.

1-3520 48 hours Contractor keeps millings
01/2/2012

SPECIAL NOTE FOR TYPICAL SECTION DIMENSIONS

Consider the dimensions shown on the typical sections for pavement and shoulder widths and thickness' to be nominal or typical dimensions. The Engineer may direct or approve varying the actual dimensions to be constructed to fit existing conditions. Do not widen existing pavement or shoulders unless specified elsewhere in this proposal or directed by the engineer.

1-3725 Typical Section Dimensions
01/02/2012

TRAFFIC CONTROL PLAN

TRAFFIC CONTROL GENERAL

Except as provided herein, traffic shall be maintained in accordance with the current editions of the Manual on Uniform Traffic Control Devices (MUTCD), Standard Specifications, and the Standard and Sepia Drawings. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic will be paid at the lump sum bid price to "Maintain and Control Traffic". All lane closures used on the Project will be in compliance with the appropriate Standard Drawings.

Contrary to Section 106.01, traffic control devices used on this project may be new, or used in like new condition, at the beginning of the work and maintained in like new condition until completion of the work. Traffic control devices will conform to the current MUTCD. Any temporary traffic control items, devices, materials, and incidentals shall remain the property of the Contractor unless otherwise addressed, when no longer needed.

Reduce the speed limit in work areas by 10 miles per hour. The extent of these areas within the project limits will be restricted to the proximity of actual work areas as determined by the Engineer. Any relocation or covering of signs will be incidental to "Maintain and Control Traffic" lump sum.

Maintain access to all entrances, side streets and roads, schools, churches and commercial properties at all times during construction. Access to fire hydrants must also be maintained at all times. The Contractor will be responsible to notify adjacent property owners when work affecting the entrances will be performed.

PROJECT PHASING & CONSTRUCTION PROCEDURES

Except as noted below, maintain alternating one-way traffic at all times during construction. Provide a minimum clear lane width of 10 feet; however, provide for passage of vehicles of up to 12 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

For the realignment of KY 2042, construct as much of the proposed roadway as possible, while maintaining existing traffic. Construct tie-ins between the proposed and existing KY 2042 while maintaining alternating one-way traffic on KY 2042. Construct the tie-in of KY 2042 and KY 17 maintaining alternating one-way traffic on KY 17.

KY 2042 may be closed to through traffic between the hours of 8:30 a.m. and 2 p.m. for required construction activities. A maximum of 10 such daily road closures will be permitted. The Contractor shall submit proposed days of lane closures to the Engineer at least 7 calendar days in advance for approval.

Traffic Control Plan
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No lane closures will be allowed on the following dates:

Thanksgiving Holiday	Thursday, November 26, 2020 – Monday, November 30, 2020
Christmas Holiday	Wednesday, December 23, 2020 – Sunday, December 27, 2020
New Year’s Holiday	Thursday, December 31, 2020 – Sunday, January 3, 2021
Memorial Day Weekend	Friday, May 28, 2021 – Monday, May 31, 2021
Independence Day Weekend	Saturday, July 3, 2021 – Monday, July 5, 2021

At the discretion of the Engineer, additional days and hours may be specified when lane and/or road closures will not be allowed due to unforeseen events.

Liquidated Damages will be assessed for any and all lane closures that exceed the approved time limits in accordance with the Special Note for Completion Dates & Liquidated Damages.

LANE CLOSURES

Do not leave lane closures in place during prohibited periods. No long term lane closures will be allowed; therefore, lane closures will not be measured for payment.

TEMPORARY SIGNS

Temporary sign posts and splices shall be compliant with NCHRP 350 or MASH. Manufacturer’s documentation validating this compliance shall be provided to the Engineer prior to installation. Temporary signs, including any splices, shall be installed according to manufacturer’s specifications and installation recommendations. Contrary to Section 112.04.02, only long term signs (signs intended to be continuously in place for more than 3 days) will be measured for payment; short term signs (signs intended to be left in place for 3 days or less) will not be measured for payment, but will be incidental to Maintain and Control Traffic.

Additional traffic control signs in addition to normal lane closure signing detailed on the Standard Drawings may be required by the Engineer. Additional signs needed may include, but are not limited to, signage for reduced speed limits and will be furnished, relocated and maintained by the Contractor.

CHANGEABLE MESSAGE SIGNS

Provide portable changeable message signs (PCMS) in advance of and within the project at locations to be determined by the Engineer. The locations designated may vary as the work progresses. The messages required to be provided will be designated by the Engineer. The PCMS will be in operation at all times. In the event of damage or mechanical/electrical failure, the Contractor will repair or replace the PCMS immediately. PCMS will be paid for once, no matter how many times they are removed or relocated. The Department will **not** take possession of the signs upon completion of the work.

Traffic Control Plan
Page 3 of 9

BARRICADES

The Department will not measure barricades used in lieu of barrels and cones for channelization or delineation, but shall be incidental to Maintain and Control Traffic according to Section 112.04.01.

The Department will measure barricades used for road closures and to protect pavement removal areas in individual units Each. The Department will measure for payment the maximum number of barricades in concurrent use at the same time on a single day on all sections of the contract. The Department will measure individual barricades only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. The Department will not measure for payment any replacements for damaged barricades, or any barricades the Engineer directs to be replaced due to poor condition or reflectivity. Retain possession of the Barricades upon completion of construction.

PAVEMENT EDGE DROP-OFFS

Do not allow a pavement edge between opposing directions of traffic or lanes that traffic is expected to cross in a lane change situation with an elevation difference greater than 1½". Place Warning signs (MUTCD W8-11 or W8-9A) in advance of and at 1500' intervals throughout the drop-off area. Dual post the signs on both sides of the traveled way. Wedge all transverse transitions between resurfaced and un-resurfaced areas which traffic may cross with asphalt mixture for leveling and wedging. Remove the wedges prior to placement of the final surface course.

Protect pavement edges that traffic is not expected to cross, except accidentally, as follows:

Less than 2" - No protection required.

2" to 4" - Place plastic drums, vertical panels, or barricades every 50 feet. During daylight working hours only, the Engineer will allow the Contractor to use cones in lieu of plastic drums, panels, and barricades. Wedge the drop-off with DGA or asphalt mixture for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

Greater than 4" - Protect drop-offs greater than 4 inches within 10 feet of traffic by placing drums, vertical panels, or barricades every 25 feet. The Engineer will not allow the use of cones in lieu of drums, vertical panels, or barricades for drop-offs greater than 4". Place Type III Barricades directly in front of the drop-off facing oncoming traffic in both directions of travel. Provide warning signs as shown on the Standard Drawings or as directed by the Engineer

Pedestrians & Bicycles - Protect pedestrian and bicycle traffic as directed by the Engineer.

Traffic Control Plan
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PAVEMENT MARKINGS

Install Temporary and Permanent Striping according to Section 112. Prior to milling and/or resurfacing, locate and document the locations of the existing markings. After resurfacing, replace the markings at their approximate existing locations or as directed by Engineer. Place markings not existing prior to resurfacing as directed by the Engineer.

USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS

The following policy is based upon current Changeable Message Signs (CMS) standards and practice from many sources, including the Federal Highway Administration (FHWA), other State Departments of Transportation, and Traffic Safety Associations. It is understood that each CMS installation or use requires individual consideration due to the specific location or purpose. However, there will be elements that are constant in nearly all applications. Accordingly these recommended guidelines bring a level of uniformity, while still being open to regional experience and engineering judgment.

Application

The primary purpose of CMS is to advise the driver of unexpected traffic and routing situations. Examples of applications where CMS can be effective include:

- Closures (road, lane, bridge, ramp, shoulder, interstate)
- Changes in alignment or surface conditions
- Significant delays, congestion
- Construction/maintenance activities (delays, future activities)
- Detours/alternative routes
- Special events with traffic and safety implications
- Crash/incidents
- Vehicle restrictions (width, height, weight, flammable)
- Advance notice of new traffic control devices
- Real-time traffic conditions (must be kept up to date)
- Weather /driving conditions, environmental conditions, Roadway Weather Information Systems
- Emergency Situations
- Referral to Highway Advisory Radio (if available)
- Messages as approved by the County Engineer's Office

CMS should not be used for:

- Replacement of static signs (e.g. road work ahead), regulatory signage (e.g. speed limits), pavement markings, standard traffic control devices, conventional warning or guide signs.
- Replacement of lighted arrow board
- Advertising (Don't advertise the event unless clarifying "action" to be taken by driver – e.g. Speedway traffic next exit)
- Generic messages
- Test messages (portable signs only)
- Describe recurrent congestion (e.g. rush hour)
- Public service announcements (not traffic related)

Traffic Control Plan
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Messages

Basic principles that are important to providing proper messages and insuring the proper operation of a CMS are:

- Visible for at least ½ mile under ideal daytime and nighttime conditions
- Legible from all lanes a minimum of 650 feet
- Entire message readable twice while traveling at the posted speed
- No more than two message panels should be used (three panels may be used on roadways where vehicles are traveling less than 45 mph). A panel is the message that fits on the face of the sign without flipping or scrolling.
- Each panel should convey a single thought; short and concise
- Do not use two unrelated panels on a sign
- Do not use the sign for two unrelated messages
- Should not scroll text horizontally or vertically
- Should not contain both the words left and right
- Use standardized abbreviations and messages
- Should be accurate and timely
- Avoid filler/unnecessary words and periods (hazardous, a, an, the)
- Avoid use of speed limits
- Use words (not numbers) for dates

Placement

Placement of the CMS is important to insure that the sign is visible to the driver and provides ample time to take any necessary action. Some of the following principles may only be applicable to controlled access roadways. The basic principles of placement for a CMS are:

- When 2 signs are needed, place on same side of roadway and at least 1,000 feet apart
- Place behind semi-rigid/rigid protection (guardrail, barrier) or outside of the clear zone
- Place 1,000 feet in advance of work zone; at least one mile ahead of decision point
- Normally place on right side of roadway; but should be placed closest to the affected lane so that either side is acceptable
- Signs should not be dual mounted (one on each side of roadway facing same direction)
- Point trailer hitch downstream
- Secure to immovable object to prevent theft (if necessary)
- Do not place in sags or just beyond crest
- Check for reflection of sun to prevent the blinding of motorist
- Should be turned ~3 degrees outward from perpendicular to the edge of pavement
- Bottom of sign should be 7 feet above the elevation of edge of roadway
- Should be removed when not in use

Traffic Control Plan
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Standard Abbreviations

The following is a list of standard abbreviations to be used on CMS:

<u>Word</u>	<u>Abbrev</u>	<u>Example</u>
Access	ACCS	ACCIDENT AHEAD/ USE ACCS RD NEXT RIGHT
Alternate	ALT	ACCIDENT AHEAD/ USE ALT RTE NEXT RIGHT
Avenue	AVE	FIFTH AVE CLOSED/ DETOUR NEXT LEFT
Blocked	BLKD	FIFTH AVE BLKD/ MERGE LEFT
Boulevard	BLVD	MAIN BLVD CLOSED/ USE ALT RTE
Bridge	BRDG	SMITH BRDG CLOSED/ USE ALT RTE
Cardinal Directions	N, S, E, W	N I75 CLOSED/ DETOUR EXIT 30
Center	CNTR	CNTR LANE CLOSED/ MERGE LEFT
Commercial	COMM	OVRSZ COMM VEH/ USE I275
Condition	COND	ICY COND POSSIBLE
Congested	CONG	HVY CONG NEXT 3 MI
Construction	CONST	CONST WORK AHEAD/ EXPECT DELAYS
Downtown	DWNTN	DWNTN TRAF USE EX 40
Eastbound	E-BND	E-BND I64 CLOSED/ DETOUR EXIT 20
Emergency	EMER	EMER VEH AHEAD/ PREPARE TO STOP
Entrance, Enter	EX, EXT	DWNTN TRAF USE EX 40
Expressway	EXPWY	WTRSN EXPWY CLOSED/ DETOUR EXIT 10
Freeway	FRWY, FWY	GN SYNDR FWY CLOSED/ DETOUR EXIT 15
Hazardous Materials	HAZMAT	HAZMAT IN ROADWAY/ ALL TRAF EXIT 25
Highway	HWY	ACCIDENT ON AA HWY/ EXPECT DELAYS
Hour	HR	ACCIDENT ON AA HWY/ 2 HR DELAY
Information	INFO	TRAF INFO TUNE TO 1240 AM
Interstate	I	E-BND I64 CLOSED/ DETOUR EXIT 20
Lane	LN	LN CLOSED MERGE LEFT
Left	LFT	LANE CLOSED MERGE LFT
Local	LOC	LOC TRAF USE ALT RTE
Maintenance	MAINT	MAINT WRK ON BRDG/ SLOW
Major	MAJ	MAJ DELAYS I75/ USE ALT RTE
Mile	MI	ACCIDENT 3 MI AHEAD/ USE ALT RTE
Minor	MNR	ACCIDENT 3 MI MNR DELAY
Minutes	MIN	ACCIDENT 3 MI/ 30 MIN DELAY
Northbound	N-BND	N-BND I75 CLOSED/ DETOUR EXIT 50
Oversized	OVRSZ	OVRSZ COMM VEH/ USE I275 NEXT RIGHT
Parking	PKING	EVENT PKING NEXT RGT
Parkway	PKWY	CUM PKWAY TRAF/ DETOUR EXIT 60
Prepare	PREP	ACCIDENT 3 MI/ PREP TO STOP
Right	RGT	EVENT PKING NEXT RGT
Road	RD	HAZMAT IN RD/ ALL TRAF EXIT 25
Roadwork	RDWK	RDWK NEXT 4 MI/ POSSIBLE DELAYS
Route	RTE	MAJ DELAYS I75/ USE ALT RTE
Shoulder	SHLDR	SHLDR CLOSED NEXT 5 MI
Slippery	SLIP	SLIP COND POSSIBLE/ SLOW SPD
Southbound	S-BND	S-BND I75 CLOSED/ DETOUR EXIT 50
Speed	SPD	SLIP COND POSSIBLE/ SLOW SPD

Traffic Control Plan
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Standard Abbreviations (cont)

<u>Word</u>	<u>Abbrev</u>	<u>Example</u>
Street	ST	MAIN ST CLOSED/ USE ALT RTE
Traffic	TRAF	CUM PKWAY TRAF/ DETOUR EXIT 60
Vehicle	VEH	OVRSZ COMM VEH/ USE I275 NEXT RIGHT
Westbound	W-BND	W-BND I64 CLOSED/ DETOUR EXIT 50
Work	WRK	CONST WRK 2MI/ POSSIBLE DELAYS

Certain abbreviations are prone to inviting confusion because another word is abbreviated or could be abbreviated in the same way. DO NO USE THESE ABBREVIATIONS:

<u>Abbrev</u>	<u>Intended Word</u>	<u>Word Erroneously Given</u>
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (merge)
LOC	Local	Location
LT	Light (traffic)	Left
PARK	Parking	Park
POLL	Pollution (index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
TEMP	Temporary	Temperature
WRNG	Warning	Wrong

Typical Messages

The following is a list of typical messages used on CMS. The list consists of the reason or problem that you want the driver to be aware of and the action that you want the driver to take.

<u>Reason/Problem</u>	<u>Action</u>
ACCIDENT	ALL TRAFFIC EXIT RT
ACCIDENT/XX MILES	AVOID DELAY USE XX
XX ROAD CLOSED	CONSIDER ALT ROUTE
XX EXIT CLOSED	DETOUR
BRIDGE CLOSED	DETOUR XX MILES
BRIDGE/(SLIPPERY, ICE, ETC.)	DO NOT PASS
CENTER/LANE/CLOSED	EXPECT DELAYS
DELAY(S), MAJOR/DELAYS	FOLLOW ALT ROUTE
DEBRIS AHEAD	KEEP LEFT
DENSE FOG	KEEP RIGHT
DISABLED/VEHICLE	MERGE XX MILES
EMER/VEHICLES/ONLY	MERGE LEFT
EVENT PARKING	MERGE RIGHT
EXIT XX CLOSED	ONE-WAY TRAFFIC
FLAGGER XX MILES	PASS TO LEFT
FOG XX MILES	PASS TO RIGHT

Traffic Control Plan
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Typical Messages (cont)

Reason/Problem

FREEWAY CLOSED
FRESH OIL
HAZMAT SPILL
ICE
INCIDENT AHEAD
LANES (NARROW, SHIFT, MERGE, ETC.)
LEFT LANE CLOSED
LEFT LANE NARROWS
LEFT 2 LANES CLOSED
LEFT SHOULDER CLOSED
LOOSE GRAVEL
MEDIAN WORK XX MILES
MOVING WORK ZONE, WORKERS IN ROADWAY
NEXT EXIT CLOSED
NO OVERSIZED LOADS
NO PASSING
NO SHOULDER
ONE LANE BRIDGE
PEOPLE CROSSING
RAMP CLOSED
RAMP (SLIPPERY, ICE, ETC.)
RIGHT LANE CLOSED
RIGHT LANE NARROWS
RIGHT SHOULDER CLOSED
ROAD CLOSED
ROAD CLOSED XX MILES
ROAD (SLIPPERY, ICE, ETC.)
ROAD WORK
ROAD WORK (OR CONSTRUCTION) (TONIGHT, TODAY, TOMORROW, DATE)
ROAD WORK XX MILES
SHOULDER (SLIPPERY, ICE, SOFT, BLOCKED, ETC.)
NEW SIGNAL XX MILES
SLOW 1 (OR 2) - WAY TRAFFIC
SOFT SHOULDER
STALLED VEHICLES AHEAD
TRAFFIC BACKUP
TRAFFIC SLOWS
TRUCK CROSSING
TRUCKS ENTERING
TOW TRUCK AHEAD
UNEVEN LANES
WATER ON ROAD
WET PAINT
WORK ZONE XX MILES
WORKERS AHEAD

Action

PREPARE TO STOP
REDUCE SPEED
SLOW
SLOW DOWN
STAY IN LANE
STOP AHEAD
STOP XX MILES
TUNE RADIO 1610 AM
USE NN ROAD
USE CENTER LANE
USE DETOUR ROUTE
USE LEFT TURN LANE
USE NEXT EXIT
USE RIGHT LANE
WATCH FOR FLAGGER

	KENTUCKY TRANSPORTATION CABINET Department of Highways DIVISION OF RIGHT OF WAY & UTILITIES	TC 62-226 Rev. 01/2016 Page 1 of 1
RIGHT OF WAY CERTIFICATION		

<input checked="" type="checkbox"/> Original	<input type="checkbox"/> Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #	COUNTY	PROJECT # (STATE)	PROJECT # (FEDERAL)
6-9014.01	Kenton	FD52 059 0017 003-009	HSIP 5217(017)

PROJECT DESCRIPTION

Slope layback to improve sight distance along KY 17, realignment of the KY 17 and KY 2042 intersection, and update signing.

No Additional Right of Way Required

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

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

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

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

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

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

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

Total Number of Parcels on Project	8	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
Number of Parcels That Have Been Acquired			
Signed Deed	7		
Condemnation	1	6	Settled prior to Right of Entry-Deed signed
Signed ROE	0		

Notes/ Comments (Use Additional Sheet if necessary)

LPA RW Project Manager		Right of Way Supervisor	
Printed Name		Printed Name	
Signature		Signature	<i>Lynn Whalen</i> Date: 2020.04.17
Date		Date	10:42:30 -04'00'
Right of Way Director		FHWA	
Printed Name		Printed Name	No Signature Required
Signature	<i>DM Loy</i> Digitally signed by DM Loy Date: 2020.04.17	Signature	as per FHWA-KYTC
Date	10:45:07 -04'00'	Date	Current Stewardship Agreement

UTILITIES AND RAIL CERTIFICATION NOTE

**Kenton County - HSIP 5217 (017)
FD52 059 0017 003-009
Sight Distance Improvements along KY 17 and Realignment of KY 2042
Item No. 6-9014.01**

GENERAL PROJECT NOTE ON UTILITY PROTECTION

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

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

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

UTILITIES AND RAIL CERTIFICATION NOTE

**Kenton County - HSIP 5217 (017)
FD52 059 0017 003-009
Sight Distance Improvements along KY 17 and Realignment of KY 2042
Item No. 6-9014.01**

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

Not Applicable

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

- Cincinnati Bell Telephone – Overhead Electric
- Duke Energy – Overhead Electric
- Spectrum Communications – Overhead Electric

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

Not Applicable

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

Northern Kentucky Water District has waterline to be relocated along this project at the following locations:
KY 2042 Sta. 100+12-104+89 – 8” WM

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

Kenton County - HSIP 5217 (017)
FD52 059 0017 003-009
Sight Distance Improvements along KY 17 and Realignment of KY 2042
Item No. 6-9014.01

UNDERGROUND FACILITY DAMAGE PROTECTION – BEFORE YOU DIG

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation.

The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

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.

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

AREA UTILITIES CONTACT LIST

UTILITIES AND RAIL CERTIFICATION NOTE

**Kenton County - HSIP 5217 (017)
FD52 059 0017 003-009
Sight Distance Improvements along KY 17 and Realignment of KY 2042
Item No. 6-9014.01**

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
1. Cincinnati Bell Telephone	Tony Niehaus	221 East Fourth St, Ste. 700 Cincinnati, OH 45202 (513) 566-8040 tony.niehaus@cinbell.com
2. Duke Energy Electric	Vanna Un	2010 Dana Avenue Cincinnati, OH 45207 (513) 458-3840 vanna.un@duke-energy.com
3. Spectrum Communications	Brian Kells	10920 Kenwood Rd Blue Ash, OH 45252 (859) 743-0064 brian.kells@charter.com
4. Northern Kentucky Water District	Kyle Ryan	PO Box 18640 Erlanger, KY 41018 (859) 426-2713 kryan@nkywater.org

NOTE: The Utilities Contact List is provided as informational only, and may not be a complete list of all Utility Companies with facilities in the project area.

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

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

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

PROTECTION OF EXISTING UTILITIES

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

PREQUALIFIED UTILITY CONTRACTORS

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

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

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

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

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

CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

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

SUBMITTALS AND CORRESPONDENCE

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

ENGINEER

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

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

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

NOTICE TO UTILITY OWNERS OF THE START OF WORK

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

UTILITY SHUTDOWNS

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

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

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

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

STATIONS AND DISTANCES

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

RESTORATION

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

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

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

MATERIAL

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

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

"No materials are being supplied by the utility owner(s). All materials are to be supplied by the contractor per bid item descriptions, utility specifications and utility plans."

SECURITY OF SUPPLIED MATERIALS

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

Standard Water Bid Item Descriptions

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

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

NOTE: A bid code for this item has been established in standard roadway bid items and shall be used for payment of this item. The bid code is 2134IND

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 ENCASUREMENT 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 ENCASUREMENT 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 ENCASUREMENT 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 complete 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 complete and ready for use. This item shall also include allowing for utility owner inspector to inspect the existing fire hydrant prior to reuse, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant for use, if the existing fire hydrant is determined unfit for reuse. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ready for use. This bid item is to pay for service installations where 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 item 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 item shall not be limited to size or scope; however structures with connecting pipes of 2 inches or less shall not be paid under this item; but, shall be considered incidental to water construction, (i.e., removal of standard water meters up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted backfill for removal of the structure and restoration complete. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

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

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

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

Size 2 = All live tapped main sizes greater than 8 inches

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

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

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

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

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

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

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

Standard 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 2134IND

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 ENCASUREMENT 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 ENCASUREMENT 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 ENCASUREMENT 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 complete 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 complete and ready for use. This item shall also include allowing for utility owner inspector to inspect the existing fire hydrant prior to reuse, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant for use, if the existing fire hydrant is determined unfit for reuse. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ready for use. This bid item is to pay for service installations where 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 item 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 item 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.



Kentucky Transportation Cabinet
KY 17 - Kenton County Waterline Relocation

Technical Construction Documents
Project Manual

1/19/2020

HDR Project No. 10043346



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Section II

GENERAL INSTRUCTIONS AND SPECIAL NOTES

1. **WATER SHUTDOWNS** The Contractor after approval by the NKWD's representative shall notify all affected NKWD's customers a minimum of 48 hours prior to interrupting water service. Notification shall be made by the Contractor using the Northern Kentucky Water District "Interruption of Service Notice". All NKWD's customers shall be notified prior to having their water turned-off to have ample time to draw water for use until service is restored. Under no circumstance shall a customer of the NKWD be without water service overnight. Commercial customers may have additional requirement such as temporary water feed, special shut-down times, etc. If water service or existing water system cannot be interrupt during normal daytime hours due to water needs or high demands, the contractor may be required to conduct the work at night or on the weekend. This work is considered an incidental to the project. No active water main shall be shut down without prior approval of Northern Kentucky Water District. Tie-ins on this project may have to be scheduled at night, on weekends or other off peak hours.
2. **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 affected utilities, whether shown on the plans or not, prior to excavation and 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.
3. **STATIONS AND DISTANCES** All stations and distances indicated in the plans or specifications are approximate, therefore, some minor adjustment may have to be made during construction to fit actual field conditions.
4. **FIRE HYDRANT DISCONNECTION** No fire hydrant shall be removed from service without prior approval of Northern Kentucky Water District, and the proper fire authority.
5. **RESIDENT ENGINEER** "Resident Engineer" as referred to in the specifications or in the plans shall mean the Kentucky Department of Highways Engineer in charge of the project and his inspectors.
6. **WATER MAIN INSPECTION** Northern Kentucky Water District and their inspectors, and the resident engineer and his inspectors shall be jointly responsible for inspection of water line facilities installation. Where the phrase "as directed" appears in these specifications without defining who is doing the directing, it shall be understood "as directed" means jointly directed by the Resident Engineer and Northern Kentucky Water District
7. **PRIOR INSPECTION OF EXISTING METER SETTINGS** The Contractor with the Northern Kentucky Water District's inspector shall make an inspection of all meter settings to adjusted or relocated prior to construction. Any meter setting not up to Northern Kentucky Water District standard shall be noted and parts furnished to the Contractor by the Northern Kentucky Water District for installation as needed. Any water meter setting, fire hydrant or any other water facilities that are to be relocated, adjusted, reused or remain and are damaged by the Contractor shall be repaired at the contractors expense. Any old water meter settings removed and not reused shall be turned over to the Northern Kentucky Water District.

8. **SPECIAL BACKFILL NOTE** No sand or granular material shall be used for backfill above 12" over the top of the pipe or around structures. Only compacted soil or flowable fill shall be used unless approved or otherwise directed by the Resident Engineer.
9. **GENERAL SAFETY** For the security and safety of people in and adjacent to trenches or construction operations, the "Manual of Accident Prevention in Construction" published by the Associated General Contractors Association of America, the "Manual On Uniform Traffic Control Devices" published by the Federal Highway Administration, and the safety regulations of the appropriate state and local agencies shall be followed when specifically applicable, or by similarity of operation or as necessary for adequate protection.
10. **MATERIAL HANDLING** Pipe, fittings, valves, hydrants, and accessories shall be loaded, unloaded, and handled by lifting with hoists or skidding so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against other pipe.
11. **PROTECTION OF PAVEMENT** Where main construction is located in or adjacent to pavements, all construction equipment shall have rubber tires. Crawler equipment will be permitted when there is no danger of damaging pavement.
12. **NOISE, DUST AND ODOR CONTROL** The Contractors construction activities shall be conducted so as to eliminate all unnecessary noise, dust, and odors. The use of oil or other materials, for dust control, which may cause tracking will not be permitted.
13. **EXCAVATION AND CONSTRUCTION MATERIALS** All excavated material and all construction materials in prosecution of the work shall be deposited so as not to endanger the work, create unnecessary annoyance to the public, or interfere with natural drainage courses. During the course of the work, all material piles shall be kept trimmed up and maintained in a neat, workmanlike manner. All material piles shall be kept a reasonable distance away from roadways so as not to cause a hazard and block the motorists view.
14. **PROTECTION OF TREES, SHRUBS, AND OTHER ITEMS TO REMAIN** Special care shall be taken by the Contractor to avoid unnecessary damage to trees or shrubs and their root systems or any other items shown to remain. Should the Contractor do unnecessary damage to any item shown to remain, the item shall be repaired or replaced at the contractors expense. Should unnecessary damage be caused to items to remain and is determined not repairable, the Contractor shall compensate the owner for the loss if any.
15. **UNACCEPTABLE EXCAVATED TRENCH MATERIAL** Any excavated trench material which is determined unacceptable for backfill shall be removed from the area and wasted at a location acquired by the Contractor and approved by the Resident Engineer. Acceptable backfill material shall be acquired by the Contractor at a location approved by the Resident Engineer. The disposition and handling of unacceptable material and the acquisition and handling of acceptable material shall be at the Contractors expense.
16. **BLASTING ROCK** No blasting of rock shall be performed without specific permission of the Resident Engineer. Blasts shall be properly covered and all utilities and structures in the area shall be properly protected. Warning shall be given to all persons in the area who could be affected by the blasting. Blasting shall be at the risk of the Contractor who shall be liable for all damages to persons or property caused by the blasting. All blasting shall be performed in accordance with all regulations of the Kentucky Department of Mines and Minerals and all other governing agencies having jurisdiction. The Kentucky Department of

Mines and Minerals, area emergency response agencies, utility companies with utilities in the area shall be notified of the blasting sufficiently in advance.

17. **ABANDONED VALVES** The valve boxes shall be removed from all abandoned valves prior to final roadway paving. This shall be done to the satisfaction of the Engineer. Paving over a valve box without removing same will not be acceptable. No separate payment will be made for removal of valve boxes but shall be considered incidental to water line construction.
18. **SALVAGED AND STOCKPILED ITEMS** The Contractor shall salvage all items in a workmanlike manner. Any item damaged by the Contractor thru negligence shall be replaced with new items at the contractors expense. All salvaged items to be stockpiled and picked up by NKWD, shall be stored in a safe place until pickup. The Contractor is to notify NKWD at 859-578-9898 when salvaged items are available for pickup.
14. **CONSTRUCTION PROCEDURE** The successful contractor to prepare construction procedure with respect to the installation of water utilities. The Sequence and Procedure of Water Utilities Construction shall be approved by the Northern Kentucky Water District's Engineering Department prior to the beginning of the water utilities relocations.

Section III

MATERIAL SPECIFICATIONS

1. CONCRETE All concrete shall be Class A in accordance with KYDOH Standard Specs. for Road and Bridge Construction current edition and shall be placed in accordance with same unless otherwise noted. The concrete shall be placed to the dimensions as required in the plans or specifications. Reinforcing steel shall be placed in the concrete as required in the plans or specifications.
2. CONCRETE REINFORCING STEEL All reinforcing steel shall be Grade 40. The size, location, placement, and quantity shall be as required in the plans or specifications.
3. WATER MAIN
 - A. **DUCTILE IRON PIPE**. Ductile iron pipe shall meet the requirements of ANSI A21.51 (AWWA C151)
 1. **Material**. The chemical constituents shall meet the physical property recommendations of ASTM A536 to ensure that the iron is suitable for satisfactory drilling and cutting.
 2. **Minimum Thickness**. Unless otherwise shown on the plans, the minimum thickness of the barrel of the pipe shall be Class 52. All pipe shall be clearly marked as to class by the manufacturer.
 3. **Coating and Lining**. The pipe shall be coated outside with a bituminous coating in accordance with ANSI A 21.51 (AWWA C151) and lined inside with cement mortar and seal coated in accordance with ANSI A21.4 (AWWA- C104).
 4. **Fittings & Glands**. Fittings and glands shall be ductile iron as specified in Section 3A, "Ductile Iron Fittings".
 5. **Polyethylene Encasement**. Ductile Iron Pipe shall be encased with Polyethylene film conforming to ANSI A21.5 (AWWA C105)
 - B. **PIPE JOINTS**
 1. **Push on and Mechanical**. - Push-on and mechanical joints including accessories shall conform to ANSI A21.11 (AWWA-C111). Bolts shall be high strength COR-10 tee head with hex nuts. The maximum deflection at push-on joints and/or mechanical joints shall be 5 degrees or as recommended by the Manufacturer.
 2. **Flanged**. - Flanged joints shall meet the requirements of ANSI A21.15 (AWWA C115) or ANSI B16.1
 - a. **Gaskets**. All flanged joints shall be furnished with 1/16 inch thick full face red rubber.
 - b. **Bolts**. Bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all a specified in ANSI B18.2. For bolts of 1-3/4 inches in diameter and larger, bolt studs with a nut on each end are recommended. Material for bolts and nuts shall conform to ASTM A307, Grade B.

3. **Restrained.** - If restrained joint system is required on the plans, all pipes, bends, tees, etc. shall be restrained push-on joint pipe and fittings utilizing ductile iron components. Restrained joint pipe shall be ductile iron manufactured in accordance with the requirements of ANSI/AWWA C151/A21.51. Push-on joints for pipe shall be in accordance with ANSI/AWWA C111/A21.11 "Rubber-Gasket Joints for Ductile-Iron Pipe and Fittings." Pipe thickness shall be designed in accordance with ANSI/AWWA C150/A21.50 "Thickness Design of Ductile-Iron Pressure Pipe," and shall be based on laying conditions and internal pressures as stated in the project plans and specifications. All restrained joint pipe and fittings shall be boltless, flexible and capable of deflection after installation. Restrained joint pipe and fittings shall be U.S. Pipe's TR FLEX restrained joint system, American's Flex-Ring or pre-approved equal. Restraint of field cut pipe shall be provided with U.S. Pipe's TR FLEX GRIPPER® Ring, TR FLEX Pipe field weldments or pre-approved equal. Method of restraining and laying schedule shall be approved by the District prior to the start of the project. Manufacturer installation instructions shall be followed. Restrained joints shall be capable of withstanding a maximum joint pressure of 250 psi. unless otherwise noted. **Mechanical joints with retainer gland and Field Lok® gaskets (or approved equals) are not acceptable unless otherwise specified (note: exception for valves and Special Restrained Joint).**

Exception to Restraint Specifications: Valves shall be restrained using mechanical joint restraint devices consisting of multiple gripping wedges incorporated into a follower gland compatible with all mechanical joints or MJ Field Lok conforming to the requirements of ANSI/AWWA C111/A21.11. Gland body, wedges and wedge actuating components shall be cast from 65-45-12 ductile iron and shall have a working pressure of 250 psi. Megalug Series 1100, MJ Field Lok® or approved equal.

Exception for Special Restrained Joints: When called out in bid items, special restrained joint pipe gaskets shall develop a wedging action between pairs of high-strength stainless steel elements spaced around the gasket (Field Lok®, Fast-Grip® or approved equal gaskets). The bend shall be restrained using mechanical joint restraint devices consisting of multiple gripping wedges incorporated into a follower gland compatible with all mechanical joints (Megalug Series 1100®, MJ Field Lok® or approved equal). Restrained push-on joints shall conform to ANSI A21.11 (AWWA C111).

- a. Bell and Spigot Bell and spigot joints shall conform to ANSI A21.6.

4. **FITTINGS**

- A. DUCTILE IRON FITTINGS. Ductile Iron Compact Fittings and accessories shall conform to AWWA C153 and Full Body Fittings - and accessories to AWWA C110. Bolts and nuts shall be high strength, corrosion resistant alloy, such as "Cor-Ten" or approved equal.

1. Working Pressures. All fittings and accessories shall be Ductile Iron, rated for a minimum of 200 psi working pressure or as specified herein. The fittings and accessories shall be new and unused. (NOTE: Certain areas of the District's service area require materials used, to be of a higher working pressure than 200 psi.)

2. Coating and Lining. The fittings shall be coated outside with a bituminous coating in accordance with ANSI A21.10 (AWWA C110) and lined inside with cement mortar and seal coated in accordance with ANSI A21.4 (AWWA C104).
3. Fittings and Glands. All pipe fittings shall be mechanical joint fittings. Mechanical joints shall conform to AWWA C111.
4. Polyethylene Encasement. Ductile Iron Fittings shall be encased with polyethylene film conforming to ANSI A21.5 (AWWA C105)

B. JOINTS

1. Mechanical. Mechanical joints including accessories shall conform to ANSI A21.11 (AWWA C111). Glands shall be ductile iron. Bolts shall be high strength COR-10 tee head with hex nuts.
2. Flanged. Flanged joints shall meet the requirements of ANSI A21.15 (AWWA C115) OR ANSI B16.1 and be used with the express approval of the Engineer.
 - a. Gaskets. All flanged joints shall be furnished with 1/16 inch thick full face red rubber.
 - b. Bolts. Bolts shall be stainless steel and have American Standard heavy unfinished hexagonal head and nut dimensions all a specified in ANSI B18.2. For bolts of 1-3/4 inches in diameter and larger, bolt studs with a nut on each end are recommended. Material for bolts and nuts shall conform to ASTM A307, Grade B.
3. Restrained. If restrained joints is shown on the plans, all pipe, bends, valves, etc. shall be restrained.
 - a. Bell and Spigot. Bell and spigot joints shall conform to ANSI A21.6.

5. POLYETHYLENE WRAP

All ductile iron pipe, fittings, valves, and fire hydrant leads shall be polyethylene wrapped, installed according to the current edition of AWWA C105. Ductile iron fittings, valves, and fire hydrant leads used in the installation of P.V.C. pipe shall be included.

- A. Material. Polyethylene wrap shall be a minimum of 8-mil thickness low-density film or 4-mil thickness high-density cross-laminated polyethylene tube per AWWA C105. Polyethylene tube shall be blue in color.
- B. Installation. The contractor shall cut the roll in tubes 2 feet longer than a standard length of pipe. Each tube shall be slipped over the length of pipe, centering to allow a 1' overlap on each adjacent pipe section. After the lap is made, slack in the tubing shall be taken up for a snug fit and the overlay shall be secured with polyethylene tape.

Pipe shall not be wrapped and stored on site for any period of time, but wrapped and immediately placed in the trench, fittings shall be wrapped prior to installing blocking or pads. (see Standard Drawing #104) Polyvinyl chloride pipe requires no wrap. Odd shaped appurtenances such as valves, tees, fittings, and other ferrous metal pipeline

appurtenances shall be wrapped by using a flat sheet of polyethylene. Wrapping shall be done by placing the sheet under the appliances and bringing the edges together, folding twice, and taping down.

6. **FIRE HYDRANTS**

- A. **DESCRIPTION.** The Contractor shall provide all labor, materials, tools, and equipment required to furnish and install in good workmanlike manner all fire hydrants complete and ready for service where shown on the plans or where directed by the Engineer and as specified herein.
- B. **FIRE HYDRANTS.** Fire hydrants shall conform to AWWA C502. Hydrants shall conform to the standards of the Northern Kentucky Water District as SHOWN on the plans. All fire hydrants shall have auxiliary valves for isolating water flow to the hydrant. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained joints, hydrant adapters, or other approved method.

Hydrants shall be designed to 200 psi working pressure and shall be shop tested to 300 psi hydrostatic pressure with the main valve both open and closed. The barrel shall have a breakable safety section and/or base bolts just above the ground line. Hydrants shall have a main valve opening of 5 1/4 inches, a 6 inch mechanical joint inlet to be suitable for setting in a trench 1,000 mm (3' 6") deep minimum, and shall be the traffic style hydrant so that the main valve remains closed when the barrel is broken off. Hydrants shall have a dry top and shall be self draining, when the main valve is closed. Self draining hydrants shall drain to dry wells provided exclusively for that purpose. Hydrant drains shall not be connected to storm or sanitary sewers. Hydrants located generally in the Covington System and other areas determined by the Engineer (flood zones) shall have all drain holes plugged prior to installation. Hydrants shall be rotatable in a minimum of eight (8) position in 360 degrees. All hydrants shall have two (2)- two and one half (2 1/2) inch hose nozzles and one (1) steamer or pumper connection threaded to conform to Northern Kentucky Water District Standards: steamer nozzle shall be National Standard Thread and 2 1/2" outlets shall be Northern Kentucky Water District Standard Thread (Old Cincinnati Thread). The operating nut and the nuts of the nozzle caps shall be square in shape, measuring one (1) inch from side to side. Hydrant body shall be painted yellow for areas designed for 150 psi working pressure and red for areas in excess of 150 psi. Hydrants used in areas in excess of 150 psi working pressure shall be designed to operate at the higher pressures and shall have independent operating valves on each 2 1/2" outlet.

All hydrants shall be right hand open, clockwise, except in certain areas of Campbell Co. as specified in Standard Drawings and shall have a direction arrow of operation cast into the dome of the hydrant. Installation per Standard Drawing #109.

- C. **INSTALLATION.** The installation of fire hydrants shall be in conformance with "Mains Installation" section, paragraph "Setting Hydrants".
- D. **Polyethylene Encasement** Fire hydrant tee, anchoring pipe and part of the fire hydrant shoe shall be encased with Polyethylene film conforming to ANSI A21.5 (AWWA C105). (See Standard Drawing #109)

7. **VALVES**

- A. DESCRIPTION. The Contractor shall provide all labor, materials, tools, and equipment required to furnish and install in good workmanlike manner all valves and accessories complete and ready for service where shown on the plans or where directed by the Engineer and as specified herein.
- B. GATE VALVES. Gate valves shall conform to AWWA C509 and shall be cast iron or ductile body, resilient wedge, non-rising stem with rubber "O" ring packing seals. All external dome and packing bolts shall be stainless steel. The valves shall open by turning counter-clockwise. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends unless otherwise shown on the plans or directed by the District. All valves shall be designed for a working pressure of 250 pounds per square inch (PSI) unless otherwise noted on the plans or in the "Supplemental Specifications". An extension stem shall be furnished if required, to bring the operating nut within 3-1/2 feet of finished grade. Extension stems shall be securely fastened to the valve stem. The Contractor shall make all valves tight under their working pressures after they have been placed and before the main is placed in operation.
- C. TAPPING SLEEVES AND VALVES. Tapping sleeves and valves shall be designed for a working pressure of 250 psi. The tapping sleeve together with the tapping valve shall be tested at 250 psi for visible leakage and pressure drop before the main is tapped. Tapping sleeve and valve used in high pressure areas shall be tested at 350 psi.
1. Tapping Sleeves Tapping sleeves shall be two piece with mechanical joint type ends, and be so designed as to assure uniform gasket pressure and permit centering of the sleeve on the pipe.
 2. Tapping Valves Tapping valves shall have a flange on one end for bolting to the tapping sleeve and a mechanical joint type end connection on the outlet with slotted standard flange or other adapters for connection to the tapping machine. All external dome, flange and packing bolts shall be stainless steel. The valves shall open by turning counterclockwise. Tapping valves shall conform to AWWA C509.
- D. VALVE BOXES All valves shall be provided with valve boxes. Valve boxes shall be of standard, adjustable, heavy duty cast iron extension type, two piece, 5 1/4 inch shaft, screw type, and of such length as necessary to extend from valve to finished grade, Tyler #562-S, Tyler #564-S or approved equal. Valve box cover shall be stamped "Water". Tops shall be set at final established grade.
- E. BUTTERFLY VALVES. Unless otherwise specified valves 16 inches and larger shall be butterfly valves rated at 250 psi working pressure and conform to the applicable portions of AWWA Standard C504, latest edition.
1. Body - The valves shall be AWWA Class 250B designed for tight shut-off against a differential pressure of 250 psi. Valve bodies shall be constructed of ductile iron. Two trunnions for shaft bearing shall be integral with the valve body. The valves and appurtenances shall be suitable for buried service.
 2. Ends - Valves shall have mechanical joint ends and shall be furnished with high strength COR-10 tee head with hex nuts, ductile iron glands, and rubber gaskets for each mechanical joint end.

- 3. Discs - Valve discs of cast steel, fabricated steel, or cast bronze are not acceptable.
- 4. Seats - Seats bonded on the discs are not acceptable.
- 5. Shaft Seals - If stuffing boxes are utilized for shaft seals they shall be constructed of cast iron, ASTM A126. Gland assemblies shall be of cast bronze, ASTM B132. The packing gland shall be housed in a solid walled cast iron, ASTM A48, Class 40 one piece structure or equal.
- 6. Operators - The valve operating mechanism shall be for counterclockwise opening. There shall be no external moving parts on valve or operator except the operator input shaft. Input shaft is to be operated by a 2 inch square operating nut. Maximum required input force on the operator shaft to open and close the valve shall be 40 pounds. The total number of turns applied to the operating nut required to completely open the valve from a completely closed position shall not be less than twice the normal valve diameter. An extension stem shall be furnished to bring the operating nut within 3 1/2 feet of the finished grade. Extension stems shall be securely fastened to the valve stem.

E. VALVE BOXES All valves shall be provided with valve boxes. Valve boxes shall be of standard, adjustable, heavy duty cast iron extension type, two piece, 5 1/4 inch shaft, screw type, and of such length as necessary to extend from valve to finished grade, Tyler #562-S, Tyler #564-S or approved equal. Valve box cover shall be stamped "Water". Tops shall be set at final established grade.

F. AIR RELEASE AND VACUUM VALVES. Air release valves shall be constructed at high points in the water line as indicated on the plans. These valves shall permit the air in the pipeline to escape as the pipe line fills and allows the air to re-enter as the line empties. These valves shall be APCO Air Release Valves Model #200-A, 250 psi working pressure, 1", cast iron body and cover. 16" and larger water mains shall be a 2" air release valve and curb stop. Refer to Standard Drawing #106 for reference.

8. **STEEL CASING PIPE**

Casing pipe shall be steel pipe with a minimum yield strength of 35,000 psi with a minimum wall thickness as listed below:

Nominal Diameter Casing Pipe	Normal Wall Thickness	Nominal Diameter Casing Pipe	Normal Wall Thickness
Under 350 mm (14")	0.251"	650 mm (26")	0.438"
350 & 400 mm(14"&16")	0.282"	700 & 750 mm(28"&30")	0.469"
450 mm (18")	0.313"	800 mm (32")	0.501"
500 mm (20")	0.344"	850 & 900 mm(34"&36")	0.532"
550 mm (22")	0.375"	950 – 1050mm(38,40&42")	0.563"
600 mm (24")	0.407"	1200 mm (48")	0.626"

The inside diameter of the casing pipe shall be at least 100 mm (4") greater than the outside diameter of the carrier pipe joints. Steel casing sections shall be connected by welding, conforming to AWWA C206.

Adequate pipe spacers shall be installed to ensure that the carrier pipe is adequately supported in the center of the casing pipe throughout it's length, particularly at the

ends. There shall not be any metallic contact between the casing and carrier pipe. Casing shall be backfilled with pea gravel or sand after the carrier pipe is installed to prevent pipe movement. Casings shall have both ends sealed up in such a way as to prevent the entrance of foreign material. See Standard Drawing #104 for installation details.

9. **MATERIAL APPROVAL** Material certification and test samples shall be provided by the Contractor, at the contractor's expense, as required by Northern Kentucky Water District and the Kentucky Department of Highways. No material shall be used until approved. All rejected material be removed from the project and approved material acquired by the Contractor at the Contractor's expense.
10. **PAVING MATERIALS FOR REPLACEMENT IN KIND** All materials for replacement in kind of streets, sidewalks, curbs, walls etc. shall meet the requirements of the applicable sections of KYDOH Standard Specifications For Road And Bridge Construction.
11. **FLOWABLE FILL** This material shall meet the requirements of SPECIAL NOTE 7X of the Kentucky Department of Highways' Standard Specifications for Road and Bridge Construction.

Section IV CONSTRUCTION

- A. GENERAL. Installation of water mains and appurtenances shall conform to the latest edition of AWWA Standard C600 for D.I.P.

Water main pipe and fittings shall be laid on a good level foundation with no gaps or humps under the pipe or fittings. Excavation shall be done by hand at joints to prevent the pipe and fittings from being supported by the mechanical joint or slip joint bell. Pipe shall be laid with the bell ends facing in the direction of laying.

The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations. ALL OPEN ENDS ARE TO BE CLOSED WITH CAPS OR PLUGS AT ALL TIMES WHEN PIPE LAYING OPERATIONS ARE NOT IN OPERATION AND AT THE END OF THE DAY. All caps or plugs shall be properly installed and blocked in advance of filling, flushing, and testing mains. All securing and blocking shall be inspected by the Engineer prior to backfilling of ditch.

- B. HANDLING. Pipe, fittings, valves, hydrants and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against other pipe. Pipe hooks that extend inside the ends of the pipe shall not be used for handling the pipe since they could damage the lining. Under no circumstances shall such materials be dropped. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign material at all times. When handling P.V.C. pipe care should be taken to avoid abrasion damage, gouging of the pipe, rocks, and any stressing of the bell joints or damage of the bevel ends.
- C. TREE REMOVAL. Stumps of trees designated for removal 12" in diameter and smaller shall be physically removed. Any stump larger than 12" shall be ground down to 6" below final grade level.
- D. DEWATERING. Should water be encountered, the Contractor shall furnish and operate suitable pumping equipment of such capacity adequate to dewater the trench. The trench shall be sufficiently dewatered so that the laying and joining of the pipe is made in the dry. The Contractor shall convey all trench water to a natural drainage channel or storm sewer without causing any property damage.
- E. CONSTRUCTION EQUIPMENT. Where mains are located in or adjacent to pavements, all backfilling and material handling equipment shall have rubber tires. Crawler equipment shall be permitted when there is no danger of damaging pavement.
- F. TRENCH SUPPORT. Supporting open cuts for mains shall be the responsibility of the Contractor where trenching may cause unnecessary damage to street pavement, trees, structures, poles, utilities, or other private or public property. During the progress of the work, whenever and wherever it is necessary, the Contractor shall, at his expense, support the sides of the excavation by adequate and suitable sheeting, shoring, bracing, or other approved means. Such trench support material and equipment shall remain in place until backfilling operations have progressed to the point where the supports may be withdrawn without endangering property.

G. NOISE DUST AND ODOR CONTROL. The Contractor's construction activities shall be conducted so as to eliminate all unnecessary noise, dust and odors.

H. DISINFECTION AND LEAKAGE TESTING. See Section "Disinfection and Leakage Testing."

I. TRENCH EXCAVATION AND BOTTOM PREPARATION.

1. General. The Contractor shall perform all excavation of every description and of whatever substances encountered to the depths indicated on the drawings or as otherwise specified. During excavation material suitable for backfilling shall be piled in an orderly manner a sufficient distance from the banks of the trench to avoid overloading and to prevent slides or cave-ins. All excavated materials not required or suitable for backfill shall be removed and wasted at a site acquired by the Contractor and approved by the Engineer. Topsoil shall be stripped from the excavation area before excavation begins.

Such grading shall be done as may be required to prevent surface water from flowing into trenches or other excavations, and any water accumulating therein shall be removed by pumping or other approved methods. The trench shall be sufficiently dewatered so that the laying and joining of pipe is made in the dry. The Contractor shall take whatever action necessary to insure that water pumped from the trench will not damage private property. If necessary the Contractor shall haul trench water to another suitable location for disposal.

Such sheeting and shoring shall be furnished and installed by the Contractor, at his own expense, as may be necessary for the protection of the work, protection of other utilities, protection of structures, the safety of the personnel, and the safety of the public. All shoring shall be removed when the work is completed unless directed otherwise by the Engineer. The Contractor shall also furnish whatever barricades or fencing necessary to provide for the safety of pedestrians in excavation areas and for traffic control as discussed in other sections. All open trenches shall be adequately covered, barricaded and/or backfilled during non-working hours in order to adequately protect vehicular and pedestrian traffic.

The Contractor shall excavate whatever material encountered. Trenches shall be excavated to the widths shown in the table headed "Trench Width" or as otherwise indicated in the plans, and the banks shall be as nearly vertical as practicable. The bottom of the trenches shall be accurately graded to provide uniform bearing and support for each section of the pipe or conduit on undisturbed soil at every point along its entire length, except for bell holes and for the proper sealing of the pipe joints. Bell holes and depressions in order that the pipe rest upon the prepared bottom for as nearly its full length as practicable, shall be only of such length, depth, and width as required for properly making the particular type of joint. Additional depth shall be excavated in rock as described elsewhere herein.

Except in cases where the elevations of the water lines are indicated on the plans, trenches for water line shall be of a depth that will provide a minimum cover over the top of the pipe of 36 inches from the indicated finished grade, and avoid interference of the water lines with other existing or proposed utilities. Where the note occurs, "Slope to Drain", the Contractor shall manage to keep a positive slope in that direction in order that air may travel to the air vent. Where paved surfaces are to be disturbed by an open cut,

the Contractor shall provide suitable machinery to cut the edges of the pavement in a smooth straight line.

2. Rock The word "rock" wherever used as the name of an excavated material, shall mean boulders and solid masonry larger than 1/2 cubic yard in volume, or solid ledge rock and masonry which, in the opinion of the Engineer, requires for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with a power operated hand tool. Any material which can be excavated using a hand pick and shovel, power operated excavator, power operated backhoe or power operated shovel shall not be defined as rock.
3. Blasting Rock. No blasting of rock shall be done within 40 feet of pipes or structures without specific permission from the Engineer. Blasts shall be properly covered and the pipe or structure properly protected. Warnings shall be given to all persons in the immediate vicinity. Blasting shall be at the risk of the Contractor who shall be liable for all damages to persons or property. Necessary permits shall be secured and paid for by the Contractor.
4. Trench Width. Widths of trenches shall be held to a minimum to accommodate the pipe and appurtenances. The trench width shall be measured at the top of the pipe barrel and shall conform to the following limits:
 - a. Earth
 - Minimum - outside diameter of the pipe barrel plus 8 inches, 4 inches each side of pipe.
 - Maximum - nominal pipe diameter plus 24 inches.
 - b. Rock
 - Minimum – 24" or less, nominal pipe size: outside diameter of pipe barrel plus 12", @ 6" each side.
 - Minimum - Larger than 24", nominal pipe size: outside diameter of pipe barrel plus 18", @ 9" each side.
 - Maximum - nominal pipe diameter plus 24".
 - c. Butterfly Valves. Trench width shall be over excavated 24" on the side that the operating mechanism is located on the butterfly valve when the surrounding area cannot be hand dug.
 - c. Structures. The minimum excavation limits for structures shall be as indicated. In rock, the excavation limits shall not exceed 12 inches from the outside wall and 6 inches below the footer.
5. Excessive Trench Width. If, for any reason the trench width exceeds the maximum trench width defined in paragraph "Trench Width", the Contractor, subject to approval of the Engineer, shall provide compacted stone bedding, additional strength pipe or concrete encasement, at the contractor expense.
6. Bottom Preparation The Contractor shall use excavation equipment that produces an even foundation. For the entire length of the trench, a compacted layer of sand or bankrun bedding material shall be installed below the pipe. Bell holes and depressions for joints, valves, and fittings shall be dug after the trench bedding has been graded in order that the pipe rest upon the prepared bedding for as nearly its full length as

practicable. Bell holes and depressions shall be only of such length, depth, and width as required for properly making the particular type of joint.

- a. Earth. The trench shall be excavated to the depth required, so as to provide a uniform and continuous bearing and support for the pipe barrel. A minimum of 3" sand shall be installed on the solid and undisturbed ground. The finished trench bottom shall be accurately prepared by means of hand tools.
 - b. Rock. Where excavation is made in rock or boulder, the trench shall be excavated 6 inches below the pipe barrel for pipe 24 inches in diameter or less, and inches for pipe larger than 24 inches in diameter. All loose material shall be removed from the trench bottom. After preparation of the trench bottom, a pipe bed shall be prepared using sand and thoroughly compacted. The bedding material shall be spread the full width of the trench bottom.
7. Water Main Depth. Mains 12" and less in size shall be not less than 36" in depth and no more than 48" in depth, unless otherwise specified. Mains larger than 12" shall be installed as shown on the plans.
 8. Excessive Trench Depth. If, for any reason, the trench depth exceeds the trench depth shown on the Plans, the Contractor is responsible for any and all additional cost incurred for the excessive depth.
 9. Foundation. The mains are to be built on a good foundation. If, in the Engineer's opinion, the material forming the trench bottom is not suitable for a good foundation, a further depth shall be excavated and the same filled with suitable material. Unauthorized excavation below the trench bottom shall be filled with compacted crushed stone at the Contractor expense.

J. PIPE, VALVE AND HYDRANT INSTALLATION. The provisions of AWWA C600 shall apply in addition to the following:

1. Pipe shall not be laid in water or when trench or weather conditions are unsuitable for the work except when permitted by the Engineer. Unless otherwise indicated in the plans or in Section I, Bid Item Explanations, the material shall be new and unused. The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging or other approved methods. Pipe shall be laid with bell ends facing in the direction of laying, unless otherwise directed by the Engineer. After placing a length of pipe in the trench, the spigot end shall be centered in the bell of the pipe and forced home. All pipe shall be laid with ends abutting and true to line and grade. Deflection of pipe joints in excess of the manufacturer's recommendations will not be permitted. A watertight pipe plug or bulkhead shall be provided and used to prevent the entrance of foreign material whenever pipe laying operations are not in progress. Any pipe that has the grade or joint disturbed after laying shall be taken up and relaid. Any section of pipe found to be defective before of after laying shall be removed and replaced at the Contractor's expense.
2. Pipe Cutting. The cutting of pipe for installing valves, fittings, or hydrants shall be done in a neat and workmanlike manner without damage to the pipe or lining. The end shall be smooth and at right angles to the axis of the pipe. Flame cutting of metal pipe by means of an oxyacetylene torch shall not be permitted. All pipe cutting shall be at the Contractor's expense.

3. Push-On Joints. The surfaces with which the rubber gaskets comes in contact shall be thoroughly cleaned just prior to assembly. The gasket shall then be inserted into the groove in the bell. Before starting joint assembly, a liberal coating of special lubricant shall be applied to the spigot end. (Special lubricant shall be suitable for use in potable water) With the spigot end centered in the bell, the spigot end is pushed home.
4. Mechanical Joints. Mechanical joints require that the spigot be centrally located in the bell. The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. The clean surfaces shall be brushed with a special lubricant just prior to slipping the gasket over the spigot end and into the bell. (Special lubricant shall be suitable for use in potable water) The lubricant shall also be brushed over the gasket prior to installation to remove the loose dirt and lubricate the gasket as it is forced into its retaining space. P.V.C. pipe spigot ends shall be field cut smooth and at right angles to the axis of the pipe for installation in mechanical joint fittings.

1. Bolt Torque The normal range of bolt torque to be applied to standard cast iron bolts in a joint are:

Size	Range of Torque in foot-pounds
5/8"	40 - 60
3/4"	60 - 90
1"	70 - 100
1-1/4"	90 - 120

5. Restrained Joints
 - a. Ball and Socket. Ball and Socket joints shall be assembled and installed according to the manufacturers recommendations. The joint shall be thoroughly cleaned and lubricated. Check the retainer ring fastener. After installation, all slack shall be taken out of the pipe joint.
 - b. Push-On. Assemble and install the push-on joint according to the manufacturer's recommendations. Restrained joint-type pipe and fittings shall only be used as approval by the Engineer. Retaining glands, field lock gaskets, or retaining flanges shall not be considered as providing a restrained joint. The joint shall be thoroughly cleaned and lubricated. Check the retainer ring fastener. After installation, all slack shall be taken out of the pipe joint.
6. Setting Valves. Valves shall be set on a firm solid concrete block foundation so that no load will be transferred to the connecting pipe. Valves in water mains shall, where possible, be located on the street property lines extended, unless otherwise shown on the plans. A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve and shall be centered and plumb over the operating nut of the valve. The box cover shall be set flush with the surface of the finished pavement unless otherwise shown. All valves boxes with the exception of isolating valves for fire hydrants that are located in non-paved areas shall have a minimum of 2'x2'x4" concrete pad as shown in Standard Drawing No. 105.
7. Setting Hydrants. Hydrants shall be located as shown on the plans or as directed by the Engineer. The location shall provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. All hydrants shall stand plumb with the pumper nozzle facing the curb. Hydrant shall be set to the established grade, with the

traffic flange within 100 mm (4") above final grade in accordance to Standard Drawing No. 109. Each hydrant shall be controlled by an independent gate valve with valve box. All valves used for hydrant control shall be anchored to the branch tee.

8. Thrust Blocking. All bends over five (5) degrees, plugs, caps, and tees shall be securely blocked against movement with concrete thrust blocks placed against undisturbed earth in accordance with Standard Drawing No. 104. Thrust blocks shall be approved by the Engineer prior to backfilling. Water mains shall have concrete thrust block at all pipe intersections and changes of direction to resist forces acting on the pipeline. All concrete thrust blocks shall be poured in such a manner that the bolts can be replaced without disturbing the blocking.

All caps or plugs used in mains to undergo hydrostatic test shall be properly installed and blocked in advance of testing mains. All caps or plug installations shall be approved by the Engineer's representative before the main is subjected to the pressure test.

- a. Concrete Blocking. Concrete blocking shall be K.D.O.T. Class A concrete as specified in Section "Concrete". Blocking shall be placed between undisturbed ground and the fitting to be anchored. The area of bearing on the fitting and on the ground in each instance shall be that shown herein. The blocking shall, unless otherwise shown, be so placed that the pipe and fitting joints will be accessible for repair.
- b. Tie Rods. If shown or specified, movement shall be prevented by attaching suitable metal rods, clamps or restrained fittings. Steel tie rods or clamps, where permitted, shall be of adequate strength to prevent movement. Steel tie rods or clamps shall be painted with three coats of an approved bituminous paint or coal tar enamel. A minimum of 3/4" welded eye bolts @ a 90 degree bend and 3/4" threaded rods may only be used with the approval of the Engineer for temporary restraint only. Duc-Lucs are prohibited for use.
- c. Restrained Fittings. Restrained fittings, where permitted, shall be subject to the approval of the Engineer.

K. TRENCH BACKFILL

All trench backfill shall be free from cinders, refuse, organic material, boulders, rocks or other material which in the opinion of the Engineer is unsuitable. No backfill shall be made with frozen material.

1. BACKFILL

- a. Trench Bottom Preparation. The pipe shall be bedded on sand to achieve full pipe barrel support. In any event not less than 3" of sand bedding shall be used.
- b. Backfill to 12" Over Pipe Barrel. All trench excavations shall be backfilled immediately after pipe is laid with the exception of thrust blocks. Compacted sand shall be used to backfill the trench from the bottom of the pipe barrel to the 12" over the pipe barrel. No flushing of backfill shall be permitted to achieve compaction. Clay bulkheads shall be installed as specified under Bulkheads Section.
- c. Remaining Trench Backfill. From 12" above the pipe barrel to the surface, excavated trench material or flowable fill may be used as backfill material. No material shall be

used for backfill that contains frozen earth, vegetation or organic material, debris, rocks **8"** or larger measured in any direction, or earth with an exceptionally high void content.

- d. Compaction. All backfill shall be placed in uniform loose layers, not to exceed 12" layers, and each layer shall be compacted to a density not less than 95 percent of the standard Proctor maximum dry density (ASTM D698). The backfill shall be compacted in such a manner and with appropriate equipment so that there is no pipe damage, pipe misalignment or damage to joints. No flushing of backfill shall be permitted to achieve compaction.
- e. Bulkheads. When a granular bedding is provided in rock or when granular backfill is used, the Contractor shall place bulkheads of clay soil across the trench at 100' intervals to resist the movement of groundwater through the granular material. Such bulkheads shall be carefully compacted and shall extend approximately 3 feet in a direction parallel to the pipe and shall extend from the bottom of the trench to a point 4" below final grade level.
- f. Flowable Fill as Backfill As required by the Engineer, flowable fill shall be per Special Note 7X of the Ky. Department of Highways Standard Specifications for Road and Bridge Construction.
- g. Surface Conditions. The trench surface shall be periodically attended to during the course of the contract. The trench surface shall be maintained in a safe condition and shall not interfere with natural drainage.

- L. INSTALLATION OF PIPE BY BORING OR JACKING. At certain locations where designated on the plans, the Contractor will be required to install pipe under paved areas or other obstacles by boring a hole large enough to pull the pipe through without obstructing the designated area, or by jacking, whichever is the most feasible.
- M. WATER METERS Water Meters shall be installed at locations shown on the plans. The meter shall be constructed as shown on Standard Drawings contained herein or in the plans.
- N. CONNECTIONS (TIE-INS) TO EXISTING WATER LINES All connections to existing water lines shall be made at location shown on the plans. Care shall be taken in each case that none of the sterilizing water may enter the system during the sterilizing operation. Each connection shall be preceded with a one inch corporation stop and drain to allow bleeding of the water line of air and sterilizing water. This corporation stop shall be furnished and installed at the Contractor's expense. All sections of pipe and appurtenances to be used for tie-ins and not sterilized, shall be thoroughly cleaned by scrubbing with a chlorine solution prior to installation. All tie-ins of mains shall be done with transitional or straight solid sleeves. Mains shall be flushed of sterilizing water before tie-ins to existing mains are made.
- O. INSTALLATION OF SERVICE LINES Service line shall be installed as shown on the plans or as directed. The Contractor shall excavate whatever material encountered. The service lines shall be installed using boring and jacking or open cut (as specified on the plans) at the depth required to clear existing and proposed sewers, but in no case shall the line be installed with less than 36" cover from final grade. The trench width shall be as excavated to a maximum of 2'. The line shall be laid on firm soil. In rock, sufficient extra depth shall be excavated and refilled with acceptable compacted soil or bedding sand to provide a cushion for the elimination of the possibility of crushing or perforating the pipe. Connections shall be made using normal practices for water line installation and in accordance with the standards

in the plans or contained herein. Backfill shall meet the same requirements as that described in PIPE TRENCH BACKFILL.

- P. **TEMPORARY SERVICE CONNECTIONS** Contractor shall furnish, install, make connections, and maintain all temporary lines and other appurtenances necessary to run temporary service connections as needed to permit construction. All temporary service pipes crossing streets, commercial driveways, and/or wheelchair ramps must be buried to prevent a traffic/pedestrian hazard.

The pipe, hoses and other materials furnished by the Contractor for use as temporary service pipe, shall be clean, water-tight and fully adequate to withstand existing pressures and all other conditions of use.. Care shall be exercised throughout the installation of all temporary pipe and service fittings to avoid any possible contamination of any mains or house services or contamination of the temporary pipe proper. Contractor must disinfect all temporary line. All temporary lines must be flushed before being hooked to service line.

The Contractor shall be responsible for the regularly testing and recording the chlorine level of the temporary lines. If low levels are encountered, the Contractor shall be responsible for flushing the line to get levels into standard. The Contractor shall perform all connecting and disconnecting of temporary bypass to consumers' services and all back clearing of service lines.

The Contractor shall maintain the temporary water service line in safe and operative condition at all times. Any temporary bypass lines or services crossing a sidewalk or driveway shall be temporarily covered with a rubber ramp provided by the Contractor or bituminous cold patch, compacted by a roller or a mechanical compaction device, provided by the Contractor. Ramping method must be approved by the District prior to use. The Contractor shall be responsible for the maintenance of the temporary ramping method and any damage as a result there-of.

Q. **APPLICABLE SPECIFICATIONS & STANDARDS**

The following specifications and standards form a part of these Specification:

- A. **American Water Works Association (AWWA) Standards**
- B. **Northern Kentucky Water District Standards Drawing & Specifications**
- C. **"Manual of Accident Prevention in Construction"** published by the **Associated General contractors of America**
- D. **Kentucky Occupational Safety and Health Administration's "Kentucky Occupational Safety and Health Standards for General Industry"** current edition.
- E. **American National Standards Institute (ANSI)**
- F. **American Society for Testing & Materials (ASTM)**
- G. **Kentucky Division of Water Quality**
- H. **"Recommended Standards for Water Works"** current edition

Section V

DISINFECTION AND LEAKAGE TEST

- A. **SCOPE**. This section covers the disinfection of the new water mains, fittings, temporary services and associated appurtenances. The Contractor shall provide all labor, materials, tools, equipment, and incidentals required to test the mains for watertightness and disinfect the mains as directed by the District and as specified herein. Gauges for the test shall be furnished by the Contractor.
- B. **TEST SECTION**. After the main has been installed and backfilled all newly installed pipe or any valved section thereof shall be considered a test section.
- C. **WITNESS**. All tests performed for each test section shall be witnessed and approved by the District before acceptance. In the event the Contractor performs any test without witness by the District, the Contractor will be required to test the section again in conformance with this specification at no cost to the District.
- D. **GENERAL**. All disinfection work shall conform to the requirements of the latest revision of ANSI/AWWA C651 and the requirements of the Kentucky Division of Water. If any State requirements conflict with the provisions of this section, the State requirements shall govern.

Water required for flushing and disinfection work will be provided as stipulated in the temporary facilities.

When it is necessary to interrupt service to water customers, each customer affected shall be notified in advance of the proposed service interruption and its probable duration in accordance with the project requirements.

- E. **DISINFECTION PROCEDURE**. During construction or after the installation of the pipe and fittings is complete, an approved disinfection method, according to governing standards, shall be used. The disinfection solution shall be allowed to stand in the main and associated appurtenances for a period of at least twenty-four (24) hours.

During disinfection, all valves, hydrants, and service line connections shall be operated to ensure that all appurtenances are disinfected. Valves shall be manipulated in such a manner that the strong disinfection solution in the main from flowing back into the supply line. Check valves shall be used if required.

All non-disinfected fittings used for tie-ins or repairs shall be cleaned and swabbed with a liquid sodium hypochlorite disinfecting solution prior to installation.

- F. **FINAL FLUSHING**. Upon completion of chlorination but before sampling and bacteriological testing, Contractor shall remove all heavily chlorinated water from the main and temporary services by flushing with potable water at the maximum velocity which can be developed under the direction and control of the District.

The Contractor shall properly neutralize and dispose of the chlorinated water and flushing water in accordance with all applicable regulations. Contractor shall obtain all special waste disposal permits necessary.

- G. DISPOSAL OF HEAVILY CHLORINATED WATER. Contractor shall apply a de-chlorinating agent to the water to be wasted to neutralize thoroughly the chlorine residual remaining in the water. (See the following table for neutralizing chemicals.) Federal, state, and local regulatory agencies should be contacted to determine special provisions for disposal of heavily chlorinated water.

Chlorine residual of water being disposed of shall be de-chlorinated by treating with one of the chemicals listed in the following table:

**Pounds of Chemicals Required to De-chlorinate Various Residual Chlorine
Concentrations in 100,000 Gallons of Water***

Residual Chlorine Concentration <i>mg/L</i>	Sulfur Dioxide (SO ₂)	Sodium Bisulfate (NaHSO ₃)	Sodium Sulfite (Na ₂ SO ₃)	Sodium Thiosulfate (Na ₂ S ₂ O ₃ @5H ₂ O)
1	0.8	1.2	1.4	1.2
2	1.7	2.5	2.9	2.4
10	8.3	12.5	14.6	12.0
50	41.7	62.6	73.0	60.0

* Except for residual chlorine concentration, all amounts are in pounds.

The Contractor shall provide all necessary materials, equipment and labor for applying the de-chlorinating chemical in a manner such that proper mixing and contact time of the chemical and the heavily chlorinated water is obtained for complete removal of chlorine being flushed. The Contractor shall periodically test the flush water to verify that the chlorine residual is zero.

- H. CHLORINE RESIDUAL TESTS. Upon completion of final flushing, the District will perform chlorine residual tests to ensure the chlorine residual in the main and temporary services is not higher than that generally prevailing in the remainder of the water distribution system and is acceptable to the District.
- I. BACTERIOLOGICAL TESTS. Sampling and testing of water in the main and temporary services will be performed by the District after final flushing. A standard plate count will be made by the District for each sample.
- J. REDISINFECTION. Should the bacteriological tests indicate the presence of coliform organisms at any sampling point, the main and temporary services shall be re-flushed, re-sampled, and re-tested. If check samples show the presence of coliform organisms, the main and temporary services shall be re-chlorinated at no additional cost to the District until results acceptable to the District are obtained.

Re-disinfection shall be completed by the continuous feed or by the slug method. Unless otherwise permitted, the chlorination agent shall be injected into the main and temporary services at the supply end through a corporation cock installed in the top of the pipe. All materials, equipment and labor necessary for the re-disinfection shall be

supplied by Contractor at no additional cost to the District.

- K. HYDROSTATIC TESTING. Hydrostatic Testing will be in accordance with AWWA C600. The water main being tested shall have all air expelled by additional flushing or installation of taps on high points in the line. The pressure of the water main shall be gradually increased to obtain a minimum pressure of 100 psi over the design pressure 250 psi. at the lowest elevation point of the water main or as directed by the Engineer. The test will be for a two (2) hour duration and will not vary by more than 5 psi. All tests performed for each test section shall be witnessed and approved by a representative of the Engineer, in the event any test is performed without a representative of the Engineer, the Contractor shall be required to test the section again. Leakage is defined as the amount of water used to maintain the test pressure.

Section VI

VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL

1. **REFERENCE MATERIALS** Traffic shall be maintained in accordance with the “Manual on Uniform Traffic Control” published by the Federal Highway Administration, current edition of Kentucky Department of Highways Standard Specifications for Road & Bridge Construction and current KYDOH Standard Drawings.
2. **PEDESTRIAN TRAFFIC** Should the Contractor be required to remove sidewalk or any other pavement used by pedestrians, the Contractor shall construct an approved, safe, alternate route with acceptable paving materials. Approval for alternate routes and temporary paving materials shall be acquired from the Engineer. The Contractor shall also construct temporary barricades and fences as required. No extra payment will be made for construction of temporary pedestrian walkways, fences or barricades required for water line construction, but shall be considered incidental to water line construction.
3. **VEHICULAR TRAFFIC** Vehicular traffic shall be maintained as required by the referenced materials listed above. The cost of all temporary paving materials for pavement restoration due to water line construction shall be considered incidental to the contract. The cost for all traffic control materials including signs, barricades, etc. shall be considered incidental to the contract. The Contractor shall be required to keep the construction area safe at all times and check that traffic control devices are in place. Should temporary paving materials used for water line construction fail to perform satisfactorily, the Contractor shall repair same at his own expense.

Section VII

TEMPORARY AND PERMANENT RESTORATION

1. **TEMPORARY RESTORATION** Any street, driveway, parking lot, sidewalk, stairs, walls, etc. disturbed by water line construction which is shown on roadway construction plans to be disturbed by roadway construction may be replaced with temporary materials. These temporary materials and their placement shall be approved by the Engineer prior to placement. The cost for temporary paving materials and their placement shall be considered incidental to the cost of water line construction.

2. **PERMANENT RESTORATION** Any street, driveway, parking lot, sidewalk, walls, shrubs, etc. disturbed by water line construction, which is shown on roadway construction plans to remain and not be disturbed by roadway construction, shall be replaced in kind. The concrete, asphalt, and stone removed shall be replaced with the same type material, the same thickness as that removed. All pavement shall be removed and replaced to 1' beyond the limits of excavation as detailed on drawing contained herein. These permanent materials and their placement shall be approved by the Engineer prior to placement. The Contractor shall reconstruct same to the original lines and grades and in such a manner as to leave all such items in fully as good or better condition than that which existed prior to construction. All restoration work shall conform to the requirements of KDOH Standard Specifications for Road and Bridge Construction and to the drawing for pavement restoration contained herein. The cost for this permanent restoration shall be considered incidental to the cost of the water line construction.

3. **SEEDING AND SODDING** This work shall be performed under bid items pertaining to same for roadway construction and in accordance with KDOH Standard Specifications for Road and Bridge Construction

Section VIII **METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

A. METHOD OF MEASUREMENT

1. Ductile Iron Water Line, each type and size, shall be measured by the linear feet laid in the trench, along the center line of the pipe, thru valves and fittings, to point of contact with existing lines, excluding any portion in concrete encasement or used in water main offsets.
2. Service Pipe, all sizes, shall be measured by the linear feet laid in the trench, excluding meter settings, from water main or existing service line to existing service line.
3. Water Line Undercut, when directed by the Engineer shall be measured along the subgrade for length and width and from pipe subgrade or bottom of fill, if in a fill placed for roadway as a part of this same contract, to bottom of undercut. Water line undercut shall be measured and paid by the cubic feet.
4. Method of Measurement For All Other Items, shall be by each or lump sum as specified for that particular item in "SECTION I, BID ITEM EXPLANATIONS" contained herein.

B. BASIS OF PAYMENT

1. Excavation, for water lines from the surface to water line subgrade or to 6" below water line subgrade in rock, for structures, for service lines, or for any other water system item will not be a bid item but shall be considered incidental to the bid item to which it pertains. No additional payment will be made for rock excavation.
2. Water Line Undercut, when directed by the Engineer and/or ND, shall be paid by the cubic yard. The accepted quantities of water line undercut will be paid at the agreed unit price of \$15.00 per cubic yard, which shall also include acquisition and placement of acceptable refill material. Should the Contractor be directed to perform water line undercut, the item "Water Line Undercut" at the agreed unit price of \$15.00 per cubic yard shall be added to the contract by change order.
3. Water Main Fittings, shall be paid EACH, couplings in tie-ins and all fittings in offsets shall be considered incidental to those items.
4. Backfill, for all phases of water line construction shall not be paid separately but shall be considered incidental to water line construction.
5. Temporary Restoration, of streets, roadways, sidewalks, steps, walls, trees, shrubs, etc. shall be considered incidental to water line construction when damaged by water line construction. The cost for this temporary restoration shall be considered incidental to the cost of the water line construction.
6. Traffic Control and Maintenance of Traffic, for a water line construction shall not be paid separately but shall be considered incidental to water line construction.
7. Basis of Payment for all Other Items, shall be by cubic feet, ton, linear feet, square feet, each, or lump sum as specified for that particular item.



APPENDIX



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Northern Kentucky Water District



2014

Standard Specifications & Drawings for the Installation of Water Mains

1.05 WATER MAINS ON PRIVATE PROPERTY Water mains installed on private property which are going to be maintained by the Water District, shall have a twenty-(20) foot wide easement with the water main centered in the easement area and shall have a justifiable benefit to the District (serving more than one property owner, hydraulic benefits, etc.) A four-(4) foot area over the water main shall be a non-paved, strip totally unobstructed with the exceptions as outlined in DESIGN GUIDELINES. With appropriate justification, paving may be approved within the four-(4) foot area over cross-country water mains. Outside the ten-(10) foot area over the water main, 5' either side but within the overall easement area, other utilities may be placed in this area. Proper documentation shall be provided for all easement areas. For areas that are on recorded subdivision plats, the following statement may be used in lieu of the grant of easement forms:

WATER MAIN EASE
The Water Main Easement(s) as shown on this plat are subject to the DECLARATION OF
MASTER WATER FACILITY EASEMENT AGREEMENT as set forth in _____
of the _____ County Clerk's records at _____, Ky.
(County Name) (Court House)
Document Location at Various Court Houses:

Court House	Document Location	County
Alexandria	Easement Book 129, Page 145	Campbell
Boone County	Easement Book 54, Page 195	Boone
Covington	Miscellaneous Book 504, Page 311	Kenton
Independence	Miscellaneous Book 228, Page 73	Kenton
Newport	Easement Book 304, Page 466	Campbell

For other areas, the Design Engineer shall prepare an easement document suitable for recording with the County Clerk. Documents shall consist of a sketch (8 1/2" by 14"), a legal description of the twenty (20) foot easement with back references to Deed Book and Page number, and a signed Grant of Easement Form (Restoration agreement) provided by the District prior to filling the man for sterilization.

1.06 WATER MAIN SIZE Minimum public water main size shall be 8", unless it is determined by the District that a dead-end main has no potential for future development, or it is determined by the District that a smaller main is adequate. The District may allow the last 600 feet of water main to be constructed as 6" water main, if a fire hydrant is deemed necessary by the Authority having Jurisdiction, or a smaller diameter main if a blow-off is sufficient. The water main around a cul-de-sac may be reduced to 4" D.I. or 2" P.E.. A flushing device may be required, as determined by the District on 4" D.I. and 2" P.E. lines, if there is no potential for future development as determined by the District and proper fire hydrant spacing can be met. The District may consider the installation of conduits for cul-de-sac lots versus a main around the cul-de-sac. Conduits will need to be installed on the opposite lot lines of the electric service and at the proper depth with a tracing wire. Additional requirements may be required for the installation of conduits subject to the approved of the District. All water mains 16" and larger shall be min. class 50 D.I.P. as determined by the District. The District does not allow water mains 10", 14" & 18" in size.

1.07 DEAD ENDS OF WATER MAINS Dead ends to water mains shall be prohibited unless approved by the District. Dead ends may be approved if one or more of the following conditions exists:

- A. The distance between the dead end and the other tie-in point is greater than 600 feet.
- B. Physical features exist between the dead end and the other tie-in point that in the opinion of the District make it impractical to tie them together.
- C. Slopes between the dead end and the other tie-in point is greater than 3 to 1.
- D. Slopes/terrain between the dead end and the other tie-in point is certified as geotechnically unstable by a qualified professional geotechnical engineer.
- E. It is necessary to purchase easements to run a water line through existing developed lots.

1.08 The District reserves the right to require certain dead ends to be connected even though they meet the above conditions. No services shall be permitted to be tapped on cross-country water mains. All dead end lines must be provided with a properly sized blow-off assembly, flush hydrant or fire hydrant. Flushing device should be sized to flow a velocity of at least 2.5 feet per second in the water main being flushed. No flushing device shall be directly connected to any sewer.

Cul-de-sacs streets of less than 300 feet long may be considered for the installation of a 4" D.I. looped water main for the elimination of the dead end. A fire hydrant shall be installed at the intersection of the cross street and a valve installed between the two tees for the 4" line.

1.09 MULTIPLE WATER MAIN FEEDS A minimum of two supply sources shall be required for subdivisions of one hundred (100) customers or more, more than one street, and/or there is potential development area that exceeds the number of customers or streets previously mentioned.

1.10 MINIMUM WATER FLOW REQUIREMENTS The water main extension at the most remote location shall be able to provide a minimum fire flow of 250 gpm for the installation of fire hydrants and the water system supporting this flow has the capability of providing this flow for a period of not less than two (2) hours plus consumption at the maximum daily rate. A minimum of 30 psi must be available on the discharge side of all meters. All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. If the water system cannot support the installation of fire hydrants, anchoring tees and valves shall be installed to allow for future fire hydrant installation when adequate water is available. If the water system extension is part of a subdivision development, the developer will be responsible for installing the anchoring tees and valves as described above and providing the District with a fire hydrant for each tee and valve installed as part of the subdivision. These fire hydrants will be installed by the District after water main improvements are made in the area which support the installation of fire hydrants.

1.11 HIGH PRESSURE AREAS Additional requirements may be necessary for high-pressure areas (125 psi static pressure or higher) as determined by the District.

1.12 VALVES Sufficient valves as determined by the District shall be provided on water mains so inconvenience and public health hazards are minimized during repairs, and their location shall be approved by the District. All valves shall be operated by or under the direction of District personnel only. Valves shall be installed at each end of cross-country water mains, and at separation of no greater than 1000 feet in urban residential areas; 500 feet in commercial areas; 1 mile in rural areas with few residents.

1.13 FIRE HYDRANTS Fire hydrants shall be connected only to water mains adequately sized to carry the flows and in no case to lines smaller than six (6) inch. Fire hydrant spacing shall be as recommended by the Northern Kentucky Area Planning Commission and the local fire department. Fire hydrants shall be located on or as close to side property lot lines as possible. Fire hydrants installed as part of a water main replacement project are to be replaced in approximately the same location as the existing one. Additional hydrants may be added when they are required for air release or flushing purposes as determined by the District.

1.14 PARALLEL INSTALLATION OF WATER AND SEWER LINES A 10' minimum lateral separation between water mains and sewers (defined as any sanitary/combined sewer, septic tank or subsoil treatment system) and sewer manholes, measured from the outside diameter to outside, must be maintained. When a 10' separation is not practical then a variance may be obtained from DOW to maintain an 18" vertical and 18" lateral separation. No variances will be permitted for force mains.

REVISION	DATE	BY

N. KY. WATER DISTRICT
SPECIFICATIONS

DRAWN BY: SAR
APPROVED: *SAR*

DATE: 8/5/2014
STANDARD DRAWING NO: 100-A

	<p>1.14 CROSSING OF WATER AND SEWER LINES Waterlines crossing under or over sewers lines (defined as any sanitary/combined sewer, septic tank or subsoil treatment system) must maintain a minimum vertical clearance of 18" and one full length of pipe shall be located so both joints are as far from the sewer as possible. Special Structural support for the water and sewer pipes may be required.</p> <p>1.15 PARALLEL INSTALLATION WITH OTHER UNDERGROUND UTILITIES- Water mains should maintain a minimum lateral separation of 3 feet from all other underground utilities whenever possible, with the exception of sewers as stated elsewhere in these specifications.</p> <p>1.16 WATER CROSSINGS Surface water crossings, both over and under water, present special problems which should be discussed with the District before improvement plans are prepared. Over water crossings, the pipe shall be adequately supported, protected from damage, freezing, and accessible for repair or replacement. The pipe shall be of special construction having flexible, watertight joints. Valves shall be provided at both ends of water crossings so that the section can be isolated for test or repair. Where the water main is constructed under a blue line stream, the pipe shall be protected with concrete encasement. This encasement shall extend a distance equal to the width of the channel measured from top of bank to top of bank. The encasement shall be per Standard Drawing No. 110. Valves shall be installed on each side of the water crossing in areas not subject to flooding when the crossing water courses greater than 15 feet in width (bank to bank). Permanent taps shall be installed on each side of the system side valve for leakage and sampling purposes. The Developer will be responsible for meeting the requirements of 401 KAR 4:050 and KRS 151.250 for sub-fluvial pipe line crossings.</p> <p>1.17 SAFETY The "Manual of Accident Prevention In Construction" published by the Associated General Contractors of America, O.S.H.A Regulations and other state and local safety regulations shall be followed.</p> <p>1.18 MAINTENANCE PERIOD The Developer shall be responsible for the maintenance of the installed water mains and appurtenances to District Standards for a period of not less than one (1) year from the date the water main is placed in service by the District. Approximately ten (10) months after the main is placed in service, an inspection will be conducted by the District to ensure that the water main and appurtenances were installed and maintained to District standards. If the 10-month inspection reveals that the installation does not meet District standards, the developer will be notified in writing to correct all discrepancies and/or problems within 60 days after notification. If the problems are not corrected within the 60-day period, the District shall make the corrections at the expense of the Developer. The Developer shall then be billed by the District at a rate of time and material plus overhead or at the rate of actual cost plus overhead when done by an available contractor hired by the District. Payment is required within 30 days of invoice date. Non-payment of invoice after 45 days by the Developer creates an indebtedness to the Water District, which violates Water District's Tariff. This indebtedness to the Water District will result in no future water being provided to the Developer on all existing and future water main projects and/or phases until all indebtedness is paid in full.</p> <p>1.19 APPLICATION FOR SERVICE Application for water service will only be accepted after the water main bacteria samples are shown to be negative following disinfection and the main is placed in-service by the District. No service installation will be scheduled until the water main is approved and turned on.</p>									
	<p>1.20 CONDUITS FOR WATER SERVICES IN ROCKY AREAS The Developer is responsible for notifying the District when rocky conditions are found in a development which could affect the installation of customer water service lines. The Developer shall give sufficient notification to the District to facilitate the installation of conduits before the street is installed. If a street is installed in a rocky area without conduits, the Developer may be responsible for any additional cost incurred.</p> <p>1.21 ORGANIC CONTAMINATION Mains installed within 200 feet of petroleum tanks and other areas of organic contamination must be ductile iron pipe.</p> <p>PART II - MATERIALS</p> <p>2.01 WATER MAIN PIPE AND FITTINGS</p> <p>A. Minimum Class 50 Ductile Iron Pipe (D.I.P.) - A minimum of Class 50 Ductile Iron pipe shall conform to the latest edition of AWWA C151. All pipe shall be clearly marked as to class by the manufacturer. "Push-on single gasket" type joints shall conform to the latest edition of AWWA C-111. Pipe shall have a standard thickness cement mortar lining in conformance with AWWA C-104.</p> <p>Under no conditions shall pipe line deflection measured between joints exceed the manufacturer's published recommended standard for that type of pipe. The maximum deflection at push-on joints and/or mechanical joints shall be 5 degrees or as recommended by Manufacturer. All D.I.P. shall be blue polyethylene wrapped.</p> <p>B. Polyvinyl Chloride Pipe (P.V.C.) - D.R. 18, P.V.C. pipe shall conform to the latest edition of AWWA C900, must be NSF approved and manufactured in accordance with ASTM standards. All pipe shall be clearly marked as to class by the manufacturer. The outside diameter shall be equivalent to D.I.P. Pipe shall have gasket bell end type joints furnished complete with gaskets meeting the latest edition of ASTM F477. Solvent weld joints are prohibited.</p> <p>P.V.C. pipe shall be permitted for use in residential subdivisions and along city and county roads as approved by the District. Pipe size shall be limited to 6", 8" & 12". P.V.C. pipe shall not be installed in high pressure areas where the static system pressures exceeds 125 psi or other system conditions exist which increase pressures over 125 psi, as determined by the District. P.V.C. pipe cannot be used for cross country lines, along state highways, water crossings, or installed within 200 feet radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations.</p> <p>P.V.C. pipe may be tied into an existing ductile iron main in a subdivision when the extension is over 450 linear feet of main, or when the pipe is installed around a cul-de-sac or a dead-end street with no possible extension of the street as approved by the District. Transition between D.I.P. and P.V.C. pipe shall be made with some type of ductile iron fitting.</p> <p>Beveled spigot ends must have a minimum bevel of 8 degrees to a maximum bevel of 15 degrees. The vertical face of the spigot end may not exceed 75% of pipe wall thickness and the horizontal length of the bevel shall not exceed 1.25 inches. Field beveled spigot end shall be made per manufacturer's recommendation and as approved by the District. The degree of bevel shall be approved for the type of pipe being installed.</p> <p>P.V.C. Pipe Shipping, Handling & Storage - The front end of all pipe delivered by truck shall be covered for protection against exhaust fumes. P.V.C. pipe shall be protected from exposure to sunlight according to manufacturer's recommendations. Pipe will not be accepted for installation if discoloration is evident due to sunlight or other exposure. Pipe shall be stored in such a manner to prevent beaming the pipe.</p>									
	<p>N. KY. WATER DISTRICT</p> <p>SPECIFICATIONS</p>									
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C. Moderately-Oriented Polyvinyl Chloride Pressure Pipe (P.V.C.O.)
P.V.C.O. pipe shall conform to the latest edition of AWWA C909, must be NSF approved and manufactured in accordance with ASTM standards. All pipe shall be clearly marked as to class by the manufacturer. The outside diameter shall be equivalent to D I.P. Pipe shall have gasket bell and type joints furnished complete with gaskets meeting the latest edition of ASTM D3139. Solvent weld joints are prohibited. P.V.C.O. pipe installation shall follow the P.V.C. C-900 Standards - Part II -Materials, 2.01, Section C of these specifications.

D. Polyethylene Pipe - Class 200, S.D.R. 9, 200 psi, ASTM D-2737, P.E. pipe shall conform to the latest edition of AWWA C901, must be NSF approved and manufactured in accordance with ASTM standards. All pipe shall be clearly marked as to class by the manufacturer. The outside diameter shall be equivalent to Copper Tubing Size (CTS). The P.E. pipe shall be homogeneous throughout and free of visible cracks, holes, kinks, foreign inclusions or other defects. It shall be uniform in color, opacity, density and other physical properties. Solvent weld joints are prohibited.

P.E. pipe shall be permitted for use in residential subdivisions cul-de-sacs only as approved by the District. Pipe size shall be limited to 2". P.E. pipe shall not be installed in high pressure areas where the static system pressures exceeds 125 psi or other system conditions exist which increase pressures over 125 psi, as determined by the District. P.E. pipe cannot be used for cross country lines, along state highways, water crossings, or installed within 200 feet radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations.

P.E. pipe expands and contracts when exposed to temperature changes, allowances shall be made during installation. Normally P.E. pipe will "snake" itself in the trench enough to provide sufficient slack. An extra 6' per 100' of pipe per 45 F temperature change should be added to compensate for thermal conditions.

E. Tracing Wire All water mains, including out-of-service stubs intended for future extension, shall be installed with copper tracing wire (P.V.C. coated) tapped to the top of the pipe every 5'. Maximum tracing wire length shall be 500' without terminating in a curb stop box. Curb stop boxes shall not be located in the pavement areas. Splices in the tracing wire shall be kept to a minimum and approved by the District. If splices are required they shall be made with copper split bolt. (Iscro #1k-8 or approved equal) and taped with electrical tape. Jumper wires must be run from the main tracing wire and secured to all water meter service lines.

F. Fittings - All fittings and accessories shall be Ductile Iron, rated for a minimum of 200 psi working pressure or as specified herein. The fittings and accessories shall be new and unused. (NOTE: Certain areas of the Northern Kentucky Water District require materials used, to be of a higher working pressure than 200 psi.) All pipe fittings shall be mechanical joint fittings. Mechanical joints shall conform to AWWA C111. Bolts and nuts shall be high strength, corrosion resistant alloy, such as "Cor-Tar" or approved equal. Ductile Iron Compact Fittings shall conform to AWWA C153 and Full Body Fittings to AWWA C110. A bituminous seal coat shall be applied to the outside of the fitting. All ductile iron fittings shall be cement lined and seal coated in accordance to AWWA C104.

202 POLYETHYLENE WRAP All ductile iron pipe, fittings, valves, and fire hydrant leads shall be polyethylene wrapped, installed according to the current edition of AWWA C105. Polyethylene wrap shall be blue in color. Ductile iron fittings, valves, and fire hydrant leads used in the installation of P.V.C. pipe shall be included. Polyethylene wrap shall be 8-mil thickness low-density film or 4-mil thickness high-density cross-laminated polyethylene tube per AWWA C105. The contractors shall cut the roll in tubes 2 feet longer than a standard length of pipe.

Each tube shall be slipped over the length of pipe, centering to allow a one foot overlap on each adjacent pipe section. After the lap is made, slack in the tubing shall be taken up for a snug fit and the overlap shall be secured with polyethylene tape. Pipe shall not be wrapped and stored on site for any period of time, but wrapped and immediately placed in the trench, fittings shall be wrapped prior to installing blocking or pads. (see Standard Drawing #104) Polyvinyl chloride pipe requires no wrap. Odd shaped appurtenances such as valves, tees, fittings, and other ferrous metal pipeline appurtenances shall be wrapped by using a flat sheet of polyethylene. Wrapping shall be done by placing the sheet under the appliances and bringing the edges together, folding twice, and taping down.

203 VALVES All valves shall open by turning counter-clockwise with the operation of a 2 inch square operating nut. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends except Tapping Valves.

A. GATE VALVES Valves 12 inches and smaller shall be resilient seated gate valves, non-rising stem with rubber "O" ring packing seals, rated at 250 psi working pressure and conform to the applicable portions of AWWA Standard C509, Latest Edition. High pressure gate valves shall be required when the pressure exceeds 200 psi. Valve bodies shall be ductile iron, glands shall be the same material as the valve. All external dome and packing bolts shall be stainless steel. The valves shall open by turning counter-clockwise. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends unless otherwise shown on the plans or directed by the District. An extension stem shall be furnished if required, to bring the operating nut within 3-1/2 feet of finished grade. Extension stems shall be securely fastened to the valve stem. The contractor shall make all valves tight under their working pressures after they have been placed and before the main is placed in operation.

B. TAPPING SLEEVE AND VALVES - No tapping sleeves and valves unless approved by Northern Kentucky Water District. Tapping sleeves and valves shall be designed for a working pressure of 200 psi. The tapping sleeve together with the tapping valve shall be tested at 250 psi for visible leakage before the main is tapped. Tapping sleeve and valve used in high pressure areas shall be tested at 350 psi.

1. Tapping Sleeves - Tapping sleeves shall be a two piece body with mechanical joint type ends, and be so designed as to assure uniform gasket pressure and permit centering of the sleeve on the pipe. Stainless steel type tapping sleeves with full gasket maybe considered, but will need to be approved by the District prior to installation.

2. Tapping Valves - Tapping valves shall be resilient seated gate valves, rated at 200 psi (unless installed in high pressure service area) and conform to the applicable portions of AWWA Standard 509, latest edition except that the seat rings shall be oversized to permit entry of the tapping machine cutter. All external dome and packing bolts shall be stainless steel. Tapping valves shall be ductile iron body, non-rising stem with rubber "O" ring packing seals. Tapping valves shall have a flange on one end for bolting to the tapping sleeve and a mechanical joint type end connection on the slotted standard flange or other adapters for connection to the tapping machine.

C. BUTTERFLY VALVES Valves 16 inches and larger shall be ductile iron body butterfly valves rated at 250 psi working pressure and conform to AWWA Standard C504, Latest Edition. District shall provide all butterfly valves before installation. The contractor shall be required to transport all butterfly valves to Water District's Warehouse for testing.

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D. VALVE STEM EXTENSIONS A valve stem extension shall be installed by the contractor to bring the operating nut within 2 1/2 to 3 1/2 ft. of final grade. Extension stems will be supplied by the Water District if the extension is justified. The contractor shall measure the needed length and provide a minimum of 48 hours notice for receipt of stem extension.

2.04 VALVE BOXES All valves shall be provided with valve boxes. Valve boxes shall be of standard, adjustable, heavy duty cast iron extension type, two piece, 5 1/4 inch shaft, screw type, and of such length as necessary to extend from valve to finished grade. Tyler #562-S, Tyler #564-S or approved equal. Valve box cover shall be stamped "Water". Tops shall be set at final established grade. If valve boxes are not of sufficient height to bring the top of the box to final grade, a section of 6" ductile iron pipe for pavement areas and 6" PVC for non-pavement areas may be used to extend the valve box to final grade with prior approval from the District. The length of pipe shall permit the valve box to be adjusted up and down. All valves will be installed with a box-10k type valve box centering ring or approved equal.

2.05 FIRE HYDRANTS All fire hydrants shall have auxiliary valves for isolating water flow to the hydrant. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained joints, hydrant adapters, or other approved method. Hydrants shall be designed to 200 psi working pressure and shall be shop tested to 300 psi hydrostatic pressure with the main valve both open and closed. High pressure fire hydrants will be required when pressures exceed 150 psi.

The barrel shall have a breakable safety section and/or base bolts just above the ground line. Hydrants shall have a main valve opening of 5 1/4 inches, a 6 inch mechanical joint inlet to be suitable for setting in a trench 3 6" deep minimum, and shall be the traffic style hydrant so that the main valve remains closed when the barrel is broken off. Hydrants shall have a dry top and shall be self draining, when the main valve is closed. Self draining hydrants shall drain to dry wells provided exclusively for that purpose. Hydrant drains shall not be connected to storm or sanitary sewers. Hydrants located generally in the Covington System and other areas determined by the District (flood zones) shall have all drain holes plugged prior to installation. Hydrants shall be rotatable in a minimum of eight (8) position in 360 degrees.

All hydrants shall have two (2) - two and one half (2 1/2) inch hose nozzles and one (1) steamer or pumper connection threaded to conform to Northern Ky. Water District's Standards: steamer nozzle shall be National Standard Thread and 2 1/2" outlets shall be Old Cincinnati Thread. The operating nut and the nuts of the nozzle caps shall be square in shape, measuring one (1) inch from side to side. Hydrant body shall be painted yellow for areas designed for 150 psi working pressure and red for areas in excess of 150 psi.

All hydrants shall be right hand open, clockwise, except in areas of Campbell County (Ft. Thomas, Alexandria, Cold Springs, Melbourne, Highland Heights, Wilder, Southgate & county areas) as determined by the District, and shall have a direction arrow of operation cast into the dome of the hydrant. Installation per Standard Drawing 109.

The following fire hydrants are approved for installation in the District's system: Mueller, Waterous, U.S. Pipe, M & H, Kennedy and American Dairling.

2.06 PRESSURE REDUCING VALVES Pressure reducing valves will be installed by the District in regular 2" and smaller meter settings when the static system pressure is at or above 125 psi for new and old services when deemed necessary by the District. Pressure reducing valves are only installed to protect the meter. The District will not be liable for any damage due to pressure conditions caused by or arising out of the failure or defective condition of such pressure regulator or for damage that may occur through the installation, maintenance, or use of such equipment.

2.07 AIR RELEASE VALVES AND/OR TAPS Air release valves shall be installed in the high points of the water mains where hydrants are not installed and as required by the District and in accordance with Standard Drawing No. 106, 8" and smaller water mains, tap size and piping shall be 3/4", 12" water main-1", & 16" and larger water main-2". Temporary taps of suitable size may be required at certain points on the water main for the release of air for filling and/or flushing purposes. Temporary taps will be removed and plugged after use. The air relief vent of automatic air release valves, where practical, may be extended to a distance of at least 1 foot above the grade and installed with a screened, downward facing elbow. Manually operated air release valves shall include a camlock-type coupling and waste valve.

2.08 STEEL CASING PIPE Casing pipe shall be steel pipe with a minimum yield strength of 35,000 psi with a minimum wall thickness as listed below:

Nominal Diameter Casing Pipe	Normal Wall Thickness	Nominal Diameter Casing Pipe	
		Normal Wall Thickness	Normal Wall Thickness
Under 14"	0.251"	26"	0.438"
14" & 16"	0.282"	28" & 30"	0.469"
18"	0.313"	32"	0.501"
20"	0.344"	34" & 36"	0.532"
22"	0.375"	38", 40", & 42"	0.563"
24"	0.407"	48"	0.626"

The inside diameter of the casing pipe shall be at least four (4) inches greater than the outside diameter of the carrier pipe joints. Steel casing sections shall be connected by welding, conforming to AWWA C206. All carrier pipe placed in steel casing pipe shall be minimum class 50 ductile iron pipe and conform to the latest edition of AWWA C151. Carrier pipe gaskets shall develop a wedging action between pairs of high-strength stainless steel elements spaced around the gasket (FIELD LOK, FASTGRIP or approved equal gaskets). Adequate pipe spacers shall be installed to ensure that the carrier pipe is adequately supported in the center of the casing pipe throughout its length, particularly at the ends to offset settling and possible electrical shorting. Manufactured pipe spacers shall be installed per manufacturer's installation requirements. There shall not be any metallic contact between the casing and carrier pipe. Casings shall have both ends sealed up in such a way as to prevent the entrance of foreign material. See Standard Drawing #114 for installation details.

PART III - INSTALLATION OF WATER MAINS AND APPURTENANCES

3.01 GENERAL Installation of water mains and appurtenances shall conform to the latest edition of AWWA Standard C600 for D.I.P., C805 for P.V.C. type pipe and C901 for P.E. Water main pipe and fittings shall be laid on a good level foundation with no gaps or humps under the pipe or fittings. Excavation shall be done by hand at joints to prevent the pipe and fittings from being supported by the mechanical joint or slip joint bell. Transition between D.I.P. and P.V.C. type pipe shall be made with some type of ductile iron fitting. Repairs to or section replacement of D.I.P. shall not be made using P.V.C. materials. Pipe shall be laid with the bell ends facing in the direction of laying.

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The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations. ALL OPEN ENDS ARE TO BE CLOSED WITH CAPS OR PLUGS AT ALL TIMES WHEN PIPE LAYING OPERATIONS ARE NOT IN OPERATION AND AT THE END OF THE DAY. All caps or plugs shall be properly installed and blocked in advance of filling, flushing and testing mains. All securing and blocking shall be inspected by the District prior to back filling of ditch.

If the existing water main material being tapped or connected to is asbestos concrete, then during the process of tapping the asbestos concrete water main, the contractor shall conform to OSHA regulations governing the handling of hazardous waste. Pieces of asbestos concrete resulting from the tap shall be doubled bagged, placed in a rigid container and disposed of in an approved landfill.

3.02 CONTRACTORS RESPONSIBILITY All work performed on any water mains and/or appurtenances that are owned or anticipated to be owned by the District shall be completed under the direction of the District adhering to an acceptable plan approved by the District. A minimum 24 hours notice shall be given to the District by the contractor prior to the start of water main work. One set of District approved plans shall be on the job site during construction. Water main construction will not be permitted to start until all approvals are received. There shall be no deviation from the approved plans without written approval from the District.

A. If the interruption of service to any customer of the District is necessary, the Contractor shall make arrangements to provide such shutdown and notify District customers at the direction of the District Inspector. All private residents shall be notified no less than 48 hours and all businesses commercial and industrial customers shall be notified no less than 1 week prior to the interruption of service. All shutdowns shall be coordinated with the affected residents, with priority given to any special needs customers such as hospitals, schools, and customers with medical needs.

B. Contractor shall be responsible for relieving any water main pressure (whether air or water) before removing any cap, plug, fire hydrant, valve, etc.

3.03 HANDLING Pipe, fittings, valves, hydrants, and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Pipe hooks that extend inside the ends of the pipe shall not be used for handling the pipe since they could damage the lining. Under no circumstances shall such materials be dropped. Pipe handled on skid ways shall not be skidded or rolled against other pipe. All bolts shall be tightened with proper wrenches and must have equal tension. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign material at all times. When handling P.V.C., P.V.C.O. & P.E. pipe care should be taken to avoid abrasion damage, gouging of the pipe, rocks, and any stressing of the bell joints or damage of the bevel ends.

3.04 TRENCHING, GRADE, AND COVER Typically no trenching or laying of pipe or fittings shall be done until pavement (curbs) has been installed. In cases where water main installation is required under new pavement (side streets) main may be installed from trench stakes. When main installation is done prior to the pavement completion, test holes may be required by the District if valve depth, service taps or other evidence indicates that the minimum or maximum cover requirements are not met or that the main is in the wrong location. The contractor will be responsible for digging test holes at intervals required by the District to verify depth and location.

All trenching, grade, and cover work shall conform to the lines and grades established, and shall be done according to the drawings and specifications, subject to such modifications as the District may determine to be necessary during the execution of the work. Trenches for water lines shall be of a depth that will provide a minimum cover over the top of pipe of three (3) feet and a maximum of four (4) feet from the final finished grade. Cover over four feet in depth will not be allowed unless approved by the District to avoid interference with other utilities. Kentucky Dept. of Transportation requires a minimum of 42" of cover for water mains along state highways.

The Contractor shall establish all locations, lines, and grades in advance of all work where practical. In addition the Contractor will keep the Northern Kentucky Water District informed a reasonable time in advance of the times and places in which the Contractor intends to work (minimum advance notice shall be one working day, 24 hours).

3.05 TRENCH EXCAVATION

A. **TRENCH WIDTH** Widths of trenches shall be held to a minimum to accommodate the pipe and appurtenances. The trench width shall be measured at the top of the pipe barrel and shall conform to the following limits:

- Earth
Minimum - outside diameter of the pipe barrel plus 8 inches, 4 inches each side of pipe.
- Rock
Maximum - nominal pipe diameter plus 24 inches.
- Minimum - 24" or less, nominal pipe size: outside diameter of pipe barrel plus 12 inches, @ 6 inches each side.
- Minimum - Larger than 24", nominal pipe size: outside diameter of pipe barrel plus 18 inches, @ 9 inches each side.
- Maximum - nominal pipe diameter plus 24 inches.

B. BUTTERFLY VALVES

Trench width shall be over excavated 24" on the side that the operating mechanism is located on the butterfly valve when the surrounding area cannot be hand dug.

3.06 BOTTOM PREPARATION The Contractor shall use excavation equipment that produces an even foundation. For the entire length of the trench, a compacted 3" layer of sand, shall be installed below the pipe. Bell holes and depressions for joints, valves, and fittings shall be dug after the trench bedding has been graded in order that the pipe rest upon the prepared bedding for as nearly its full length as practicable. Bell holes and depressions shall be only of such length, depth, and width as required for properly making the particular type of joint.

3.07 UNSTABLE SUB-GRADE MATERIAL When the sub-grade is found to include non-approved backfill material (rock, refuse, organic material, etc.), such material shall be removed to a minimum of six (6) inches below the bottom of the pipe and backfilled with sand, backrun or granular material and thoroughly compacted.

3.08 UNSTABLE SUB-GRADE If the material forming the trench bottom is not suitable for a good foundation, a further depth shall be excavated and backfilled with an approved backfill material and thoroughly compacted or a foundation shall be constructed using piling, treated timbers, concrete, or other materials as directed and approved by the District.

3.09 PIPE LAYING Pipe shall be laid with bell ends facing in the direction of laying. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home. All pipe shall be laid with ends abutting and true to line and grade. Deflection of pipe joints in excess of the manufacturer's recommendations shall not be permitted. Caps or plugs shall be installed to prevent the entrance of foreign material whenever pipe laying operations are not in progress.

3.10 PIPE CUTTING Cutting of pipe for installing valves, fittings, or hydrants shall be done in a neat and workmanlike manner without damage to the pipe or lining. The end shall be smooth and at right angles to the axis of the pipe. Flame cutting of metal pipe by means of an oxyacetylene torch shall not be permitted.

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3.11 **PUSH-ON JOINTS** The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. The gasket shall then be inserted into the groove in the bell. Before starting joint assembly, a liberal coating of special lubricant, per manufacturers recommendation, shall be applied to the spigot end. (Special lubricant shall be suitable for use in potable water) With the spigot end centered in the bell, the spigot is pushed home per manufacturers recommendations. Insertion of spigot into P.V.C. type pipe bell should be inserted until the reference mark is flush with the end of the bell. Over insertion of the pipe is not recommended per the manufacturer. Pipe joint materials which prevent permeation by petroleum products shall be used within 200 foot radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations.

3.12 **MECHANICAL JOINTS** Mechanical joints for D.I.P. and P.V.C. type pipe require that the spigot be carefully located in the bell. The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. These clean surfaces shall be brushed with a special lubricant just prior to slipping the gasket over the spigot end and into the bell. (Special lubricant shall be suitable for use in potable water) The lubricant shall also be brushed on each gasket prior to installation to remove the loose dirt and lubricate the gasket as it is force into its retaining space. P.V.C. type pipe spigot ends shall be field cut smooth and at right angles to the axis of the pipe for installation in mechanical joint fittings. Care shall be taken to ensure that the P.V.C. plain end is completely home into the mechanical joint fitting.

3.13 **RESTRAINED JOINTS** Restrained joint-type pipe and fittings shall only be used as approval by the District. Retaining glands, field lock gaskets, or retaining flanges maybe used as temporary blocking but shall not be considered as providing a permanent restrained joint or as an alternate for permanent concrete blocking. The use of these type of restraining joints need to be approved by the District prior to installation.

3.14 **SETTING VALVES** Valves shall be set on a firm solid concrete block foundation so that no load will be transferred to the connecting pipe. Valves in water mains shall, where possible, be located on the side property lines extended, unless otherwise shown on the plans. A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve and shall be centered and plumb over the operating nut of the valve. The box cover shall be set flush with the surface of the finished pavement unless otherwise shown. All valves boxes with the exception of isolating valves for fire hydrants that are located in non-paved areas shall have a minimum 2 by 2 by 4" concrete pad as shown in Standard Drawing No. 105, unless a smaller pad is approved by the District.

3.15 **SETTING FIRE HYDRANTS** Hydrants shall be located as shown on the plans or as directed by the District. The location shall provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. All hydrants shall stand plumb with the pumper nozzle facing the curb. Hydrant shall be set to the established grade, with the traffic flange within 4" above final grade in accordance to Standard Drawing No. 109. Each hydrant shall be controlled by an independent gate valve with valve box. All valves used for hydrant control shall be anchored to the branch tee. Fire hydrant barrel extension shall be limited to a one piece assembly only, stacking two or more extensions is prohibited. Maximum fire hydrant barrel extension is 2 feet.

3.16 **CROSS-COUNTRY WATER MAINS** All cross-country water mains shall be installed with a tracing wire as described in Part II, Section 2.01 - F - Tracing Wire.

3.17 **THRUST BLOCKING** All bends over five (5) degrees shall be securely blocked against movement with concrete thrust blocks placed against undisturbed earth in accordance with Standard Drawing No. 104 & 104-A. Thrust blocks shall be approved by the District prior to backfilling. Water mains shall have concrete thrust block at all pipe intersections and changes of direction to resist forces acting on the pipeline. All concrete thrust blocks shall be poured in such a manner that the bolts can be replaced without disturbing the blocking. All caps or plugs used in mains to undergo hydrostatic test shall be properly installed and blocked in advance of testing mains. All caps or plug installations shall be approved by the District representative before the main is subjected to the pressure test. The District may permit the use of restrained type glands, gaskets, 3/4" welded eye bolts @ a 90 degree bend & 3/4" threaded rods or other means as prior approved by the District for temporary restraint only. Permanent concrete thrust restraint shall be provided with any temporary restraint. Duc-Lucs are prohibited for use.

3.18 **TRENCH BACKFILL TO 12" OVER PIPE BARREL** All trench excavations shall be backfilled immediately after pipe is laid with the exception of thrust blocks. Compacted sand material shall be used to backfill the trench from the bottom of the pipe barrel to the 12" over the pipe barrel. Backfill material shall be free from cinders, refuse, organic material, boulders, top soil, frozen material, material with a high void content, rocks 1 1/2" or larger measured in any direction, sharp stones and crushed rocks larger than 3/4", or other materials which in the opinion of the District is unsuitable. No flushing of backfill shall be permitted to achieve compaction.

3.19 **REMAINING TRENCH BACKFILL IN NON-PAVEMENT AREAS** From 12" above the pipe barrel to the surface, excavated trench material may be used as backfill material or as required by local or county authorities. No material shall be used for backfill that contains frozen earth, vegetable or organic material, debris, rocks 8" or larger measured in any direction, or earth with an exceptionally high void content. Compaction of remaining trench backfill shall be as required by local or county authorities.

3.20 **REMAINING TRENCH BACKFILL IN EXISTING PUBLIC ROADWAYS** Roadway opening permits shall be obtained from the local City, County or Ky. State Dept. of Highways if applicable. The minimum requirements for backfill beneath all existing public roadways from 12" above the pipe barrel to sub-grade shall be flowable fill unless City, County, or State have additional requirements. The flowable fill shall comply with the latest edition of the Kentucky Transportation Cabinet/ Department of Highways' Standard Specifications for Road and Bridge Construction. The remaining trench backfill to final grade shall match the existing pavement/surface conditions.

3.21 **DISINFECTION** Water Mains designed to carry water for domestic consumption shall be thoroughly cleaned, flushed, and disinfected before being put in service and before acceptance by the District. Disinfection shall be done by the addition of suitable amounts of chlorine or liquid sodium hypochlorite in such amounts to produce a concentration of at least fifty (50) ppm and a residual of at least twenty five (25) ppm at the end of 24 hours and followed by thorough flushing. The application shall be as approved by the District and in accordance with AWWA C651 and applicable Ky. Division of Water requirements. The contractor shall be responsible for de-chlorination of the disinfection water. All non-disinfected fittings used for tie-ins or repairs shall be cleaned and swabbed with a hypochlorite disinfecting solution prior to installation. New water distribution lines shall not be placed into service until bacteriological samples taken at the points specified in 401 KAR 8:150 Section 4 (2) are examined and are shown to be negative following disinfection. Disposal of chlorinated water will be in accordance with 401 KARSS:031. Coliform samples must be taken at connection points to existing mains, 1 mile intervals along new mains, and at all dead ends.

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APPROVED: 	
DATE: 8/5/2014	STANDARD DRAWING NO. 100-F

Northern Kentucky Water District



2014

Standard Specifications & Drawings for the Installation of Water Mains

1.05 WATER MAINS ON PRIVATE PROPERTY Water mains installed on private property which are going to be maintained by the Water District, shall have a twenty-(20) foot wide easement with the water main centered in the easement area and shall have a justifiable benefit to the District (serving more than one property owner, hydraulic benefits, etc.) A four-(4) foot area over the water main shall be a non-paved, strip totally unobstructed with the exceptions as outlined in DESIGN GUIDELINES. With appropriate justification, paving may be approved within the four-(4) foot area over cross-country water mains. Outside the ten-(10) foot area over the water main, 5' either side but within the overall easement area, other utilities may be placed in this area. Proper documentation shall be provided for all easement areas. For areas that are on recorded subdivision plats, the following statement may be used in lieu of the grant of easement forms:

WATER MAIN EASE
The Water Main Easement(s) as shown on this plat are subject to the DECLARATION OF MASTER WATER FACILITY EASEMENT AGREEMENT as set forth in _____ (Document Location) of the _____ County Clerk's records at _____, Ky. _____ (County Name) _____ (Court House)

Document Location at Various Court Houses:

Court House	Document Location	County
Alexandria	Easement Book 129, Page 145	Campbell
Boone County	Easement Book 54, Page 195	Boone
Covington	Miscellaneous Book 504, Page 311	Kenton
Independence	Miscellaneous Book 228, Page 73	Kenton
Newport	Easement Book 304, Page 466	Campbell

For other areas, the Design Engineer shall prepare an easement document suitable for recording with the County Clerk. Documents shall consist of a sketch (8 1/2" by 14"), a legal description of the twenty (20) foot easement with back references to Deed Book and Page number, and a signed Grant of Easement Form (Restoration agreement) provided by the District prior to filling the man for sterilization.

1.06 WATER MAIN SIZE Minimum public water main size shall be 8", unless it is determined by the District that a dead-end main has no potential for future development, or it is determined by the District that a smaller main is adequate. The District may allow the last 600 feet of water main to be constructed as 6" water main, if a fire hydrant is deemed necessary by the Authority having Jurisdiction, or a smaller diameter main if a blow-off is sufficient. The water main around a cul-de-sac may be reduced to 4" D.I. or 2" P.E.. A flushing device may be required, as determined by the District on 4" D.I. and 2" P.E. lines, if there is no potential for future development as determined by the District and proper fire hydrant spacing can be met. The District may consider the installation of conduits for cul-de-sac lots versus a main around the cul-de-sac. Conduits will need to be installed on the opposite lot lines of the electric service and at the proper depth with a tracing wire. Additional requirements may be required for the installation of conduits subject to the approved of the District. All water mains 16" and larger shall be min. class 50 D.I.P. as determined by the District. The District does not allow water mains 10", 14" & 18" in size.

1.07 DEAD ENDS OF WATER MAINS Dead ends to water mains shall be prohibited unless approved by the District. Dead ends may be approved if one or more of the following conditions exist:

- A. The distance between the dead end and the other tie-in point is greater than 600 feet.
- B. Physical features exist between the dead end and the other tie-in point that in the opinion of the District make it impractical to tie them together.
- C. Slopes between the dead end and the other tie-in point is greater than 3 to 1.
- D. Slopes/terrain between the dead end and the other tie-in point is certified as geotechnically unstable by a qualified professional geotechnical engineer.
- E. It is necessary to purchase easements to run a water line through existing developed lots.

1.08 The District reserves the right to require certain dead ends to be connected even though they meet the above conditions. No services shall be permitted to be tapped on cross-country water mains. All dead end lines must be provided with a properly sized blow-off assembly, flush hydrant or fire hydrant. Flushing device should be sized to flow a velocity of at least 2.5 feet per second in the water main being flushed. No flushing device shall be directly connected to any sewer.

Cul-de-sacs streets of less than 300 feet long may be considered for the installation of a 4" D.I. looped water main for the elimination of the dead end. A fire hydrant shall be installed at the intersection of the cross street and a valve installed between the two tees for the 4" line.

1.09 MULTIPLE WATER MAIN FEEDS A minimum of two supply sources shall be required for subdivisions of one hundred (100) customers or more, more than one street, and/or there is potential development area that exceeds the number of customers or streets previously mentioned.

1.10 MINIMUM WATER FLOW REQUIREMENTS The water main extension at the most remote location shall be able to provide a minimum fire flow of 250 gpm for the installation of fire hydrants and the water system supporting this flow has the capability of providing this flow for a period of not less than two (2) hours plus consumption at the maximum daily rate. A minimum of 30 psi must be available on the discharge side of all meters. All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. If the water system cannot support the installation of fire hydrants, anchoring tees and valves shall be installed to allow for future fire hydrant installation when adequate water is available. If the water system extension is part of a subdivision development, the developer will be responsible for installing the anchoring tees and valves as described above and providing the District with a fire hydrant for each tee and valve installed as part of the subdivision. These fire hydrants will be installed by the District after water main improvements are made in the area which support the installation of fire hydrants.

1.11 HIGH PRESSURE AREAS Additional requirements may be necessary for high-pressure areas (125 psi static pressure or higher) as determined by the District.

1.12 VALVES Sufficient valves as determined by the District shall be provided on water mains so inconvenience and public health hazards are minimized during repairs, and their location shall be approved by the District. All valves shall be operated by or under the direction of District personnel only. Valves shall be installed at each end of cross-country water mains, and at separation of no greater than 1000 feet in urban residential areas; 500 feet in commercial areas; 1 mile in rural areas with few residents.

1.13 FIRE HYDRANTS Fire hydrants shall be connected only to water mains adequately sized to carry the flows and in no case to lines smaller than six (6) inch. Fire hydrant spacing shall be as recommended by the Northern Kentucky Area Planning Commission and the local fire department. Fire hydrants shall be located on or as close to side property lot lines as possible. Fire hydrants installed as part of a water main replacement project are to be replaced in approximately the same location as the existing one. Additional hydrants may be added when they are required for air release or flushing purposes as determined by the District.

1.14 PARALLEL INSTALLATION OF WATER AND SEWER LINES A 10' minimum lateral separation between water mains and sewers (defined as any sanitary/combined sewer, septic tank or subsoil treatment system) and sewer manholes, measured from the outside diameter to outside, must be maintained. When a 10' separation is not practical then a variance may be obtained from DOW to maintain an 18" vertical and 18" lateral separation. No variances will be permitted for force mains.

REVISION	DATE	BY

DRAWN BY: SAR

APPROVED: *SAR*

DATE: 8/5/2014

STANDARD DRAWING NO. 100-A

N. KY. WATER DISTRICT SPECIFICATIONS

<p>1.14 CROSSING OF WATER AND SEWER LINES Waterlines crossing under or over sewers lines (defined as any sanitary/combined sewer, septic tank or subsoil treatment system) must maintain a minimum vertical clearance of 18" and one full length of pipe shall be located so both joints are as far from the sewer as possible. Special Structural support for the water and sewer pipes may be required.</p>	<p>1.20 CONDUITS FOR WATER SERVICES IN ROCKY AREAS The Developer is responsible for notifying the District when rocky conditions are found in a development which could affect the installation of customer water service lines. The Developer shall give sufficient notification to the District to facilitate the installation of conduits before the street is installed. If a street is installed in a rocky area without conduits, the Developer may be responsible for any additional cost incurred.</p>											
<p>1.15 PARALLEL INSTALLATION WITH OTHER UNDERGROUND UTILITIES- Water mains should maintain a minimum lateral separation of 3 feet from all other underground utilities whenever possible, with the exception of sewers as stated elsewhere in these specifications.</p>	<p>1.21 ORGANIC CONTAMINATION Mains installed within 200 feet of petroleum tanks and other areas of organic contamination must be ductile iron pipe.</p>											
<p>1.16 WATER CROSSINGS Surface water crossings, both over and under water, present special problems which should be discussed with the District before improvement plans are prepared. Over water crossings, the pipe shall be adequately supported, protected from damage, freezing, and accessible for repair or replacement. The pipe shall be of special construction having flexible, watertight joints. Valves shall be provided at both ends of water crossings so that the section can be isolated for test or repair. Where the water main is constructed under a blue line stream, the pipe shall be protected with concrete encasement. This encasement shall extend a distance equal to the width of the channel measured from top of bank to top of bank. The encasement shall be per Standard Drawing No. 110. Valves shall be installed on each side of the water crossing in areas not subject to flooding when the crossing water courses greater than 15 feet in width (bank to bank). Permanent taps shall be installed on each side of the system side valve for leakage and sampling purposes. The Developer will be responsible for meeting the requirements of 401 KAR 4:050 and KRS 151.250 for sub-fluvial pipe line crossings.</p>	<p>2.01 WATER MAIN PIPE AND FITTINGS A. <u>Minimum Class 50 Ductile Iron Pipe (D.I.P.)</u> - A minimum of Class 50 Ductile Iron pipe shall conform to the latest edition of AWWA C151. All pipe shall be clearly marked as to class by the manufacturer. "Push-on single gasket" type joints shall conform to the latest edition of AWWA C-111. Pipe shall have a standard thickness cement mortar lining in conformance with AWWA C-104. Under no conditions shall pipe line deflection measured between joints exceed the manufacturer's published recommended standard for that type of pipe. The maximum deflection at push-on joints and/or mechanical joints shall be 5 degrees or as recommended by Manufacturer. All D.I.P. shall be blue polyethylene wrapped. B. <u>Polyvinyl Chloride Pipe (P.V.C.) - D.R. 18</u>, P.V.C. pipe shall conform to the latest edition of AWWA C900, must be NSF approved and manufactured in accordance with ASTM standards. All pipe shall be clearly marked as to class by the manufacturer. The outside diameter shall be equivalent to D.I.P. Pipe shall have gasket bell end type joints furnished complete with gaskets meeting the latest edition of ASTM F477. Solvent weld joints are prohibited.</p>											
<p>1.17 SAFETY The "Manual of Accident Prevention In Construction" published by the Associated General Contractors of America, O.S.H.A Regulations and other state and local safety regulations shall be followed.</p> <p>1.18 MAINTENANCE PERIOD The Developer shall be responsible for the maintenance of the installed water mains and appurtenances to District Standards for a period of not less than one (1) year from the date the water main is placed in service by the District. Approximately ten (10) months after the main is placed in service, an inspection will be conducted by the District to ensure that the water main and appurtenances were installed and maintained to District standards. If the 10-month inspection reveals that the installation does not meet District standards, the developer will be notified in writing to correct all discrepancies and/or problems within 60 days after notification. If the problems are not corrected within the 60-day period, the District shall make the corrections at the expense of the Developer. The Developer shall then be billed by the District at a rate of time and material plus overhead or at the rate of actual cost plus overhead when done by an available contractor hired by the District. Payment is required within 30 days of invoice date. Non-payment of invoice after 45 days by the Developer creates an indebtedness to the Water District, which violates Water District's Tariff. This indebtedness to the Water District will result in no future water being provided to the Developer on all existing and future water main projects and/or phases until all indebtedness is paid in full.</p>	<p>P.V.C. pipe shall be permitted for use in residential subdivisions and along city and county roads as approved by the District. Pipe size shall be limited to 6", 8" & 12". P.V.C. pipe shall not be installed in high pressure areas where the static system pressures exceeds 125 psi or other system conditions exist which increase pressures over 125 psi, as determined by the District. P.V.C. pipe cannot be used for cross country lines, along state highways, water crossings, or installed within 200 feet radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations. P.V.C. pipe may be tied into an existing ductile iron main in a subdivision when the extension is over 450 linear feet of main, or when the pipe is installed around a cul-de-sac or a dead-end street with no possible extension of the street as approved by the District. Transition between D.I.P. and P.V.C. pipe shall be made with some type of ductile iron fitting. Beveled spigot ends must have a minimum bevel of 8 degrees to a maximum bevel of 15 degrees. The vertical face of the spigot end may not exceed 75% of pipe wall thickness and the horizontal length of the bevel shall not exceed 1.25 inches. Field beveled spigot end shall be made per manufacturer's recommendation and as approved by the District. The degree of bevel shall be approved for the type of pipe being installed.</p>											
<p>1.19 APPLICATION FOR SERVICE Application for water service will only be accepted after the water main bacteria samples are shown to be negative following disinfection and the main is placed in-service by the District. No service installation will be scheduled until the water main is approved and turned on.</p>	<p>P.V.C. Pipe Shipping, Handling & Storage - The front end of all pipe delivered by truck shall be covered for protection against exhaust fumes. P.V.C. pipe shall be protected from exposure to sunlight according to manufacturer's recommendations. Pipe will not be accepted for installation if discoloration is evident due to sunlight or other exposure. Pipe shall be stored in such a manner to prevent beaming the pipe.</p>											
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C. Moderately-Oriented Polyvinyl Chloride Pressure Pipe (P.V.C.O.)
P.V.C.O. pipe shall conform to the latest edition of AWWA C909, must be NSF approved and manufactured in accordance with ASTM standards. All pipe shall be clearly marked as to class by the manufacturer. The outside diameter shall be equivalent to D I.P. Pipe shall have gasket bell and type joints furnished complete with gaskets meeting the latest edition of ASTM D3139. Solvent weld joints are prohibited. P.V.C.O. pipe installation shall follow the P.V.C. C-900 Standards - Part II -Materials, 2.01, Section C of these specifications.

D. Polyethylene Pipe - Class 200, S.D.R. 9, 200 psi, ASTM D-2737, P.E. pipe shall conform to the latest edition of AWWA C901, must be NSF approved and manufactured in accordance with ASTM standards. All pipe shall be clearly marked as to class by the manufacturer. The outside diameter shall be equivalent to Copper Tubing Size (CTS). The P.E. pipe shall be homogeneous throughout and free of visible cracks, holes, kinks, foreign inclusions or other defects. It shall be uniform in color, opacity, density and other physical properties. Solvent weld joints are prohibited.

P.E. pipe shall be permitted for use in residential subdivisions cul-de-sacs only as approved by the District. Pipe size shall be limited to 2". P.E. pipe shall not be installed in high pressure areas where the static system pressures exceeds 125 psi or other system conditions exist which increase pressures over 125 psi, as determined by the District. P.E. pipe cannot be used for cross country lines, along state highways, water crossings, or installed within 200 feet radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations.

P.E. pipe expands and contracts when exposed to temperature changes, allowances shall be made during installation. Normally P.E. pipe will "snake" itself in the trench enough to provide sufficient slack. An extra 6' per 100' of pipe per 45 F temperature change should be added to compensate for thermal conditions.

E. Tracing Wire All water mains, including out-of-service stubs intended for future extension, shall be installed with copper tracing wire (P.V.C. coated) tapped to the top of the pipe every 5'. Maximum tracing wire length shall be 500' without terminating in a curb stop box. Curb stop boxes shall not be located in the pavement areas. Splices in the tracing wire shall be kept to a minimum and approved by the District. If splices are required they shall be made with copper split bolt. (Iscro #1k-8 or approved equal) and taped with electrical tape. Jumper wires must be run from the main tracing wire and secured to all water meter service lines.

F. Fittings - All fittings and accessories shall be Ductile Iron, rated for a minimum of 200 psi working pressure or as specified herein. The fittings and accessories shall be new and unused. (NOTE: Certain areas of the Northern Kentucky Water District require materials used, to be of a higher working pressure than 200 psi.) All pipe fittings shall be mechanical joint fittings. Mechanical joints shall conform to AWWA C111. Bolts and nuts shall be high strength, corrosion resistant alloy, such as "Cor-Tar" or approved equal. Ductile Iron Compact Fittings shall conform to AWWA C153 and Full Body Fittings to AWWA C110. A bituminous seal coat shall be applied to the outside of the fitting. All ductile iron fittings shall be cement lined and seal coated in accordance to AWWA C104.

202 POLYETHYLENE WRAP All ductile iron pipe, fittings, valves, and fire hydrant leads shall be polyethylene wrapped, installed according to the current edition of AWWA C105. Polyethylene wrap shall be blue in color. Ductile iron fittings, valves, and fire hydrant leads used in the installation of P.V.C. pipe shall be included. Polyethylene wrap shall be 8-mil thickness low-density film or 4-mil thickness high-density cross-laminated polyethylene tube per AWWA C105. The contractors shall cut the roll in tubes 2 feet longer than a standard length of pipe.

Each tube shall be slipped over the length of pipe, centering to allow a one foot overlap on each adjacent pipe section. After the lap is made, slack in the tubing shall be taken up for a snug fit and the overlap shall be secured with polyethylene tape. Pipe shall not be wrapped and stored on site for any period of time, but wrapped and immediately placed in the trench, fittings shall be wrapped prior to installing blocking or pads. (see Standard Drawing #104) Polyvinyl chloride pipe requires no wrap. Odd shaped appurtenances such as valves, tees, fittings, and other ferrous metal pipeline appurtenances shall be wrapped by using a flat sheet of polyethylene. Wrapping shall be done by placing the sheet under the appliances and bringing the edges together, folding twice, and taping down.

203 VALVES All valves shall open by turning counter-clockwise with the operation of a 2 inch square operating nut. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends except Tapping Valves.

A. GATE VALVES Valves 12 inches and smaller shall be resilient seated gate valves, non-rising stem with rubber "O" ring packing seals, rated at 250 psi working pressure and conform to the applicable portions of AWWA Standard C509, Latest Edition. High pressure gate valves shall be required when the pressure exceeds 200 psi. Valve bodies shall be ductile iron, glands shall be the same material as the valve. All external dome and packing bolts shall be stainless steel. The valves shall open by turning counter-clockwise. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends unless otherwise shown on the plans or directed by the District. An extension stem shall be furnished if required, to bring the operating nut within 3-1/2 feet of finished grade. Extension stems shall be securely fastened to the valve stem. The contractor shall make all valves tight under their working pressures after they have been placed and before the main is placed in operation.

B. TAPPING SLEEVE AND VALVES - No tapping sleeves and valves unless approved by Northern Kentucky Water District. Tapping sleeves and valves shall be designed for a working pressure of 200 psi. The tapping sleeve together with the tapping valve shall be tested at 250 psi for visible leakage before the main is tapped. Tapping sleeve and valve used in high pressure areas shall be tested at 350 psi.

1. Tapping Sleeves - Tapping sleeves shall be a two piece body with mechanical joint type ends, and be so designed as to assure uniform gasket pressure and permit centering of the sleeve on the pipe. Stainless steel type tapping sleeves with full gasket maybe considered, but will need to be approved by the District prior to installation.

2. Tapping Valves - Tapping valves shall be resilient seated gate valves, rated at 200 psi (unless installed in high pressure service area) and conform to the applicable portions of AWWA Standard 509, latest edition except that the seat rings shall be oversized to permit entry of the tapping machine cutter. All external dome and packing bolts shall be stainless steel. Tapping valves shall be ductile iron body, non-rising stem with rubber "O" ring packing seals. Tapping valves shall have a flange on one end for bolting to the tapping sleeve and a mechanical joint type end connection on the slotted standard flange or other adapters for connection to the tapping machine.

C. BUTTERFLY VALVES Valves 16 inches and larger shall be ductile iron body butterfly valves rated at 250 psi working pressure and conform to AWWA Standard C504, Latest Edition. District shall provide all butterfly valves before installation. The contractor shall be required to transport all butterfly valves to Water District's Warehouse for testing.

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D. VALVE STEM EXTENSIONS A valve stem extension shall be installed by the contractor to bring the operating nut within 2 1/2 to 3 1/2 ft. of final grade. Extension stems will be supplied by the Water District if the extension is justified. The contractor shall measure the needed length and provide a minimum of 48 hours notice for receipt of stem extension.

2.04 VALVE BOXES All valves shall be provided with valve boxes. Valve boxes shall be of standard, adjustable, heavy duty cast iron extension type, two piece, 5 1/4 inch shaft, screw type, and of such length as necessary to extend from valve to finished grade. Tyler #562-S, Tyler #564-S or approved equal. Valve box cover shall be stamped "Water". Tops shall be set at final established grade. If valve boxes are not of sufficient height to bring the top of the box to final grade, a section of 6" ductile iron pipe for pavement areas and 6" PVC for non-pavement areas may be used to extend the valve box to final grade with prior approval from the District. The length of pipe shall permit the valve box to be adjusted up and down. All valves will be installed with a box-10k type valve box centering ring or approved equal.

2.05 FIRE HYDRANTS All fire hydrants shall have auxiliary valves for isolating water flow to the hydrant. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained joints, hydrant adapters, or other approved method. Hydrants shall be designed to 200 psi working pressure and shall be shop tested to 300 psi hydrostatic pressure with the main valve both open and closed. High pressure fire hydrants will be required when pressures exceed 150 psi.

The barrel shall have a breakable safety section and/or base bolts just above the ground line. Hydrants shall have a main valve opening of 5 1/4 inches, a 6 inch mechanical joint inlet to be suitable for setting in a trench 3 6" deep minimum, and shall be the traffic style hydrant so that the main valve remains closed when the barrel is broken off. Hydrants shall have a dry top and shall be self draining, when the main valve is closed. Self draining hydrants shall drain to dry wells provided exclusively for that purpose. Hydrant drains shall not be connected to storm or sanitary sewers. Hydrants located generally in the Covington System and other areas determined by the District (flood zones) shall have all drain holes plugged prior to installation. Hydrants shall be rotatable in a minimum of eight (8) position in 360 degrees.

All hydrants shall have two (2) - two and one half (2 1/2) inch hose nozzles and one (1) steamer or pumper connection threaded to conform to Northern Ky. Water District's Standards: steamer nozzle shall be National Standard Thread and 2 1/2" outlets shall be Old Cincinnati Thread. The operating nut and the nuts of the nozzle caps shall be square in shape, measuring one (1) inch from side to side. Hydrant body shall be painted yellow for areas designed for 150 psi working pressure and red for areas in excess of 150 psi.

All hydrants shall be right hand open, clockwise, except in areas of Campbell County (Ft. Thomas, Alexandria, Cold Springs, Melbourne, Highland Heights, Wilder, Southgate & county areas) as determined by the District, and shall have a direction arrow of operation cast into the dome of the hydrant. Installation per Standard Drawing 109.

The following fire hydrants are approved for installation in the District's system: Mueller, Waterous, U.S. Pipe, M & H, Kennedy and American Dairling.

2.06 PRESSURE REDUCING VALVES Pressure reducing valves will be installed by the District in regular 2" and smaller meter settings when the static system pressure is at or above 125 psi for new and old services when deemed necessary by the District. Pressure reducing valves are only installed to protect the meter. The District will not be liable for any damage due to pressure conditions caused by or arising out of the failure or defective condition of such pressure regulator or for damage that may occur through the installation, maintenance, or use of such equipment.

2.07 AIR RELEASE VALVES AND/OR TAPS Air release valves shall be installed in the high points of the water mains where hydrants are not installed and as required by the District and in accordance with Standard Drawing No. 106, 8" and smaller water mains, tap size and piping shall be 3/4", 12" water main-1", & 16" and larger water main-2". Temporary taps of suitable size may be required at certain points on the water main for the release of air for filling and/or flushing purposes. Temporary taps will be removed and plugged after use. The air relief vent of automatic air release valves, where practical, may be extended to a distance of at least 1 foot above the grade and installed with a screened, downward facing elbow. Manually operated air release valves shall include a camlock-type coupling and waste valve.

2.08 STEEL CASING PIPE Casing pipe shall be steel pipe with a minimum yield strength of 35,000 psi with a minimum wall thickness as listed below:

Nominal Diameter Casing Pipe	Normal Wall Thickness	Nominal Diameter Casing Pipe	
		26"	30"
Under 14"	0.251"	0.438"	0.469"
14" & 16"	0.282"	0.469"	0.501"
18"	0.313"	0.501"	0.532"
20"	0.344"	0.532"	0.563"
22"	0.375"	0.563"	0.594"
24"	0.407"	0.594"	0.626"

The inside diameter of the casing pipe shall be at least four (4) inches greater than the outside diameter of the carrier pipe joints. Steel casing sections shall be connected by welding, conforming to AWWA C206. All carrier pipe placed in steel casing pipe shall be minimum class 50 ductile iron pipe and conform to the latest edition of AWWA C151. Carrier pipe gaskets shall develop a wedging action between pairs of high-strength stainless steel elements spaced around the gasket (FIELD LOK, FASTGRIP or approved equal gaskets). Adequate pipe spacers shall be installed to ensure that the carrier pipe is adequately supported in the center of the casing pipe throughout its length, particularly at the ends to offset settling and possible electrical shorting. Manufactured pipe spacers shall be installed per manufacturer's installation requirements. There shall not be any metallic contact between the casing and carrier pipe. Casings shall have both ends sealed up in such a way as to prevent the entrance of foreign material. See Standard Drawing #114 for installation details.

PART III - INSTALLATION OF WATER MAINS AND APPURTENANCES

3.01 GENERAL Installation of water mains and appurtenances shall conform to the latest edition of AWWA Standard C600 for D.I.P., C805 for P.V.C. type pipe and C901 for P.E. Water main pipe and fittings shall be laid on a good level foundation with no gaps or humps under the pipe or fittings. Excavation shall be done by hand at joints to prevent the pipe and fittings from being supported by the mechanical joint or slip joint bell. Transition between D.I.P. and P.V.C. type pipe shall be made with some type of ductile iron fitting. Repairs to or section replacement of D.I.P. shall not be made using P.V.C. materials. Pipe shall be laid with the bell ends facing in the direction of laying.

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The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations. ALL OPEN ENDS ARE TO BE CLOSED WITH CAPS OR PLUGS AT ALL TIMES WHEN PIPE LAYING OPERATIONS ARE NOT IN OPERATION AND AT THE END OF THE DAY. All caps or plugs shall be properly installed and blocked in advance of filling, flushing and testing mains. All securing and blocking shall be inspected by the District prior to back filling of ditch.

If the existing water main material being tapped or connected to is asbestos concrete, then during the process of tapping the asbestos concrete water main, the contractor shall conform to OSHA regulations governing the handling of hazardous waste. Pieces of asbestos concrete resulting from the tap shall be doubled bagged, placed in a rigid container and disposed of in an approved landfill.

3.02 CONTRACTORS RESPONSIBILITY All work performed on any water mains and/or appurtenances that are owned or anticipated to be owned by the District shall be completed under the direction of the District adhering to an acceptable plan approved by the District. A minimum 24 hours notice shall be given to the District by the contractor prior to the start of water main work. One set of District approved plans shall be on the job site during construction. Water main construction will not be permitted to start until all approvals are received. There shall be no deviation from the approved plans without written approval from the District.

A. If the interruption of service to any customer of the District is necessary, the Contractor shall make arrangements to provide such shutdown and notify District customers at the direction of the District Inspector. All private residents shall be notified no less than 48 hours and all businesses commercial and industrial customers shall be notified no less than 1 week prior to the interruption of service. All shutdowns shall be coordinated with the effected residents, with priority given to any special needs customers such as hospitals, schools, and customers with medical needs.

B. Contractor shall be responsible for relieving any water main pressure (whether air or water) before removing any cap, plug, fire hydrant, valve, etc.

3.03 HANDLING Pipe, fittings, valves, hydrants, and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Pipe hooks that extend inside the ends of the pipe shall not be used for handling the pipe since they could damage the lining. Under no circumstances shall such materials be dropped. Pipe handled on skid ways shall not be skidded or rolled against other pipe. All bolts shall be tightened with proper wrenches and must have equal tension. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign material at all times. When handling P.V.C., P.V.C.O. & P.E. pipe care should be taken to avoid abrasion damage, gouging of the pipe, rocks, and any stressing of the bell joints or damage of the bevel ends.

3.04 TRENCHING, GRADE, AND COVER Typically no trenching or laying of pipe or fittings shall be done until pavement (curbs) has been installed. In cases where water main installation is required under new pavement (side streets) main may be installed from trench stakes. When main installation is done prior to the pavement completion, test holes may be required by the District if valve depth, service taps or other evidence indicates that the minimum or maximum cover requirements are not met or that the main is in the wrong location. The contractor will be responsible for digging test holes at intervals required by the District to verify depth and location.

All trenching, grade, and cover work shall conform to the lines and grades established, and shall be done according to the drawings and specifications, subject to such modifications as the District may determine to be necessary during the execution of the work. Trenches for water lines shall be of a depth that will provide a minimum cover over the top of pipe of three (3) feet and a maximum of four (4) feet from the final finished grade. Cover over four feet in depth will not be allowed unless approved by the District to avoid interference with other utilities. Kentucky Dept. of Transportation requires a minimum of 42" of cover for water mains along state highways.

The Contractor shall establish all locations, lines, and grades in advance of all work where practical. In addition the Contractor will keep the Northern Kentucky Water District informed a reasonable time in advance of the times and places in which the Contractor intends to work (minimum advance notice shall be one working day, 24 hours).

3.05 TRENCH EXCAVATION

A. **TRENCH WIDTH** Widths of trenches shall be held to a minimum to accommodate the pipe and appurtenances. The trench width shall be measured at the top of the pipe barrel and shall conform to the following limits:

Earth
Minimum - outside diameter of the pipe barrel plus 8 inches, 4 inches each side of pipe.
Maximum - nominal pipe diameter plus 24 inches.

Rock
Minimum - 24" or less, nominal pipe size; outside diameter of pipe barrel plus 12 inches, @ 6 inches each side.
Maximum - Larger than 24", nominal pipe size; outside diameter of pipe barrel plus 18 inches, @ 9 inches each side.

Maximum - nominal pipe diameter plus 24 inches.

B. BUTTERFLY VALVES

Trench width shall be over excavated 24" on the side that the operating mechanism is located on the butterfly valve when the surrounding area cannot be hand dug.

3.06 BOTTOM PREPARATION The Contractor shall use excavation equipment that produces an even foundation. For the entire length of the trench, a compacted 3" layer of sand, shall be installed below the pipe. Bell holes and depressions for joints, valves, and fittings shall be dug after the trench bedding has been graded in order that the pipe rest upon the prepared bedding for as nearly its full length as practicable. Bell holes and depressions shall be only of such length, depth, and width as required for properly making the particular type of joint.

3.07 UNSTABLE SUB-GRADE MATERIAL When the sub-grade is found to include non-approved backfill material (rock, refuse, organic material, etc.), such material shall be removed to a minimum of six (6) inches below the bottom of the pipe and backfilled with sand, backum or granular material and thoroughly compacted.

3.08 UNSTABLE SUB-GRADE If the material forming the trench bottom is not suitable for a good foundation, a further depth shall be excavated and backfilled with an approved backfill material and thoroughly compacted or a foundation shall be constructed using piling, treated timbers, concrete, or other materials as directed and approved by the District.

3.09 PIPE LAYING Pipe shall be laid with bell ends facing in the direction of laying. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home. All pipe shall be laid with ends abutting and true to line and grade. Deflection of pipe joints in excess of the manufacturer's recommendations shall not be permitted. Caps or plugs shall be installed to prevent the entrance of foreign material whenever pipe laying operations are not in progress.

3.10 PIPE CUTTING Cutting of pipe for installing valves, fittings, or hydrants shall be done in a neat and workmanlike manner without damage to the pipe or lining. The end shall be smooth and at right angles to the axis of the pipe. Flame cutting of metal pipe by means of an oxyacetylene torch shall not be permitted.

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3.11 **PUSH-ON JOINTS** The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. The gasket shall then be inserted into the groove in the bell. Before starting joint assembly, a liberal coating of special lubricant, per manufacturers recommendation, shall be applied to the spigot end. (Special lubricant shall be suitable for use in potable water) With the spigot end centered in the bell, the spigot is pushed home per manufacturers recommendations. Insertion of spigot into P.V.C. type pipe bell should be inserted until the reference mark is flush with the end of the bell. Over insertion of the pipe is not recommended per the manufacturer. Pipe joint materials which prevent permeation by petroleum products shall be used within 200 foot radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations.

3.12 **MECHANICAL JOINTS** Mechanical joints for D.I.P. and P.V.C. type pipe require that the spigot be carefully located in the bell. The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. These clean surfaces shall be brushed with a special lubricant just prior to slipping the gasket over the spigot end and into the bell. (Special lubricant shall be suitable for use in potable water) The lubricant shall also be brushed on each gasket prior to installation to remove the loose dirt and lubricate the gasket as it is force into its retaining space. P.V.C. type pipe spigot ends shall be field cut smooth and at right angles to the axis of the pipe for installation in mechanical joint fittings. Care shall be taken to ensure that the P.V.C. plain end is completely home into the mechanical joint fitting.

3.13 **RESTRAINED JOINTS** Restrained joint-type pipe and fittings shall only be used as approval by the District. Retaining glands, field lock gaskets, or retaining flanges may be used as temporary blocking but shall not be considered as providing a permanent restrained joint or as an alternate for permanent concrete blocking. The use of these type of restraining joints need to be approved by the District prior to installation.

3.14 **SETTING VALVES** Valves shall be set on a firm solid concrete block foundation so that no load will be transferred to the connecting pipe. Valves in water mains shall, where possible, be located on the side property lines extended, unless otherwise shown on the plans. A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve and shall be centered and plumb over the operating nut of the valve. The box cover shall be set flush with the surface of the finished pavement unless otherwise shown. All valves boxes with the exception of isolating valves for fire hydrants that are located in non-paved areas shall have a minimum 2 by 2 by 4" concrete pad as shown in Standard Drawing No. 105, unless a smaller pad is approved by the District.

3.15 **SETTING FIRE HYDRANTS** Hydrants shall be located as shown on the plans or as directed by the District. The location shall provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. All hydrants shall stand plumb with the pumper nozzle facing the curb. Hydrant shall be set to the established grade, with the traffic flange within 4" above final grade in accordance to Standard Drawing No. 109. Each hydrant shall be controlled by an independent gate valve with valve box. All valves used for hydrant control shall be anchored to the branch tee. Fire hydrant barrel extension shall be limited to a one piece assembly only, stacking two or more extensions is prohibited. Maximum fire hydrant barrel extension is 2 feet.

3.16 **CROSS-COUNTRY WATER MAINS** All cross-country water mains shall be installed with a tracing wire as described in Part II, Section 2.01 - F - Tracing Wire.

3.17 **THRUST BLOCKING** All bends over five (5) degrees shall be securely blocked against movement with concrete thrust blocks placed against undisturbed earth in accordance with Standard Drawing No. 104 & 104-A. Thrust blocks shall be approved by the District prior to backfilling. Water mains shall have concrete thrust block at all pipe intersections and changes of direction to resist forces acting on the pipeline. All concrete thrust blocks shall be poured in such a manner that the bolts can be replaced without disturbing the blocking. All caps or plugs used in mains to undergo hydrostatic test shall be properly installed and blocked in advance of testing mains. All caps or plug installations shall be approved by the District representative before the main is subjected to the pressure test. The District may permit the use of restrained type glands, gaskets, 3/4" welded eye bolts @ a 90 degree bend & 3/4" threaded rods or other means as prior approved by the District for temporary restraint only. Permanent concrete thrust restraint shall be provided with any temporary restraint. Duc-Lucs are prohibited for use.

3.18 **TRENCH BACKFILL TO 12" OVER PIPE BARREL** All trench excavations shall be backfilled immediately after pipe is laid with the exception of thrust blocks. Compacted sand material shall be used to backfill the trench from the bottom of the pipe barrel to the 12" over the pipe barrel. Backfill material shall be free from cinders, refuse, organic material, boulders, top soil, frozen material, material with a high void content, rocks 1 1/2" or larger measured in any direction, sharp stones and crushed rocks larger than 3/4", or other materials which in the opinion of the District is unsuitable. No flushing of backfill shall be permitted to achieve compaction.

3.19 **REMAINING TRENCH BACKFILL IN NON-PAVEMENT AREAS** From 12" above the pipe barrel to the surface, excavated trench material may be used as backfill material or as required by local or county authorities. No material shall be used for backfill that contains frozen earth, vegetable or organic material, debris, rocks 8" or larger measured in any direction, or earth with an exceptionally high void content. Compaction of remaining trench backfill shall be as required by local or county authorities.

3.20 **REMAINING TRENCH BACKFILL IN EXISTING PUBLIC ROADWAYS** Roadway opening permits shall be obtained from the local City, County or Ky. State Dept. of Highways if applicable. The minimum requirements for backfill beneath all existing public roadways from 12" above the pipe barrel to sub-grade shall be flowable fill unless City, County, or State have additional requirements. The flowable fill shall comply with the latest edition of the Kentucky Transportation Cabinet/ Department of Highways' Standard Specifications for Road and Bridge Construction. The remaining trench backfill to final grade shall match the existing pavement/surface conditions.

3.21 **DISINFECTION** Water Mains designed to carry water for domestic consumption shall be thoroughly cleaned, flushed, and disinfected before being put in service and before acceptance by the District. Disinfection shall be done by the addition of suitable amounts of chlorine or liquid sodium hypochlorite in such amounts to produce a concentration of at least fifty (50) ppm and a residual of at least twenty five (25) ppm at the end of 24 hours and followed by thorough flushing. The application shall be as approved by the District and in accordance with AWWA C651 and applicable Ky. Division of Water requirements. The contractor shall be responsible for de-chlorination of the disinfection water. All non-disinfected fittings used for tie-ins or repairs shall be cleaned and swabbed with a hypochlorite disinfecting solution prior to installation. New water distribution lines shall not be placed into service until bacteriological samples taken at the points specified in 401 KAR 8:150 Section 4 (2) are examined and are shown to be negative following disinfection. Disposal of chlorinated water will be in accordance with 401 KARSS:031. Coliform samples must be taken at connection points to existing mains, 1 mile intervals along new mains, and at all dead ends.

REVISION	BY	DATE

N. KY. WATER DISTRICT	
SPECIFICATIONS	
DRAWN BY: SAR	
APPROVED: 	
DATE: 8/5/2014	
STANDARD DRAWING NO. 100-F	

A. TABLET METHOD Calcium hypochlorite tablets shall be installed in each length of pipe to insure a sufficient dosage of 50 ppm based on the following table:

Pipe Diameter	Tablets per Length
6"	2 ea. -5-gram tablets
8"	4 ea. -5-gram tablets
10"	6 ea. -5-gram tablets
12"	8 ea. -5-gram tablets
16"	14 ea. -5-gram tablets

The tablets shall be attached by a food-grade adhesive such as Permatex No. 2 or Permatex Clear RTV Silicone Adhesive Sealant. Tablets shall be attached inside and at the top of the main with approximately equal numbers of tablets at each end of the pipe. Tablets must be water soluble.

B. LIQUID CHLORINE METHOD Disinfection may be done by the addition of suitable amounts of chlorine in the form of liquid sodium hypochlorite as per AWWA B300 to obtain the results as the previous method described. Note: Permission for this method of disinfection shall be obtained by the District prior to construction.

3.22 PRESSURE TESTING Pressure Testing must be in accordance with AWWA Standards C600. The water main being tested shall have all air expelled by additional flushing or the installation of taps on high points in the line. The pressure of the water main shall be gradually increased to obtain a minimum pressure of 100 psi over the design pressure (250 psi minimum) at the lowest elevation point of the water main or as directed by the District. The test will be for a two (2) hour duration and will not vary by more than 5 psi. All tests performed for each test section shall be witnessed and approved by a representative of the District. In the event any test is performed without a representative of the District, the Contractor shall be required to test the section again. Leakage is defined as the amount of water used to maintain the test pressure.

REVISION	BY	DATE

N. KY. WATER DISTRICT	
SPECIFICATIONS	
DRAWN BY:	SAR
APPROVED:	<i>[Signature]</i>
DATE:	8/5/2014
STANDARD DRAWING NO.:	100-G

A. TABLET METHOD Calcium hypochlorite tablets shall be installed in each length of pipe to insure a sufficient dosage of 50 ppm based on the following table:

Pipe Diameter	Tablets per Length
6"	2 ea. -5-gram tablets
8"	4 ea. -5-gram tablets
10"	6 ea. -5-gram tablets
12"	8 ea. -5-gram tablets
16"	14 ea. -5-gram tablets

The tablets shall be attached by a food-grade adhesive such as Permatex No. 2 or Permatex Clear RTV Silicone Adhesive Sealant. Tablets shall be attached inside and at the top of the main with approximately equal numbers of tablets at each end of the pipe. Tablets must be water soluble.

B. LIQUID CHLORINE METHOD Disinfection may be done by the addition of suitable amounts of chlorine in the form of liquid sodium hypochlorite as per AWWA B300 to obtain the results as the previous method described. Note: Permission for this method of disinfection shall be obtained by the District prior to construction.

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REVISION	BY	DATE

N. KY. WATER DISTRICT	
SPECIFICATIONS	
DRAWN BY: SAR	
APPROVED: 	
DATE: 8/5/2014	
STANDARD DRAWING NO. 100-G	

PART 1 - GENERAL

1.01 INTRODUCTION Unless modified, deleted, replaced, or otherwise changed, the latest published addition of the following documents shall be the accepted standard for materials and/or procedures for the construction of water mains and appurtenances:
 A. Northern Kentucky Water District's Standard Drawings
 B. Natural Resources & Environmental Protection Cabinet, Division of Water
 C. Kentucky Public Service Commission Regulations
 D. American Water Works Association's Standards (AWWA)
 E. Recommended Standards for Water Works
 If a conflict exists between referenced sources, the more restrictive requirements shall prevail. The District shall provide interpretation as requested.

1.02 DESCRIPTION In general the following specifications are minimum requirement for water main design and installation. New design ideas and concepts are welcomed by the District, but subject to District's approval. Construction may be dictated by location, soil conditions, ground water, topography, etc. Additional provisions may be required by the District.

1.03 DESIGN GUIDELINES Plans are approved subject to the conditions of compliance with all applicable laws, rules, regulations and standards. Deviation from applicable laws, rules, regulations and standards will only be considered with appropriate justification submitted to the District's Engineering Dept. The proposed project may be constructed only in accordance with the approved plans. Plans submitted to the District for approval shall be on a 1" = 50' scale and plan sheets no larger than 24" X 36". It is strongly recommended that the design engineer meet with the Water District prior to plan submissions for review of overall project. Extensions from and connections to the public water system will be approved by the District where proper pressures and flows permit, provided there is a sufficient water supply developed and available for domestic use and fire protection to take on new or additional extension or service without detriment to those already served. The District will run a hydraulic analysis for every new line water main extension to ensure adequate water, as defined by the Ky. Public Service Commission, is available.

If any phasing is to be allowed after the District has approved a set of drawings, the Developer shall provide to the District a set of the approved drawings with the proposed phasing hand drawn. The drawing shall indicate any proposed additional appurtenances to the system per Standard 101. This redline shall provide dimensions of the proposed phased water main extension. Upon approval of the phasing by the District, and after construction of the system, the District's Inspector shall confirm the work was completed in accordance with the approved changes.

Water lines must be sized to meet the demands anticipated for the total development being designed. The design engineer and/or developer are responsible for properly sizing water mains to meet required demands of the development. Public water mains shall be installed in a public right of way with the exception of cross-country lines installed to eliminate dead ends and water mains installed on private property which are going to be maintained by the Water District. To allow for the future extension of the water system in an orderly manner, the water system shall be constructed to the developer's property limits which about a proposed or existing public right-of-way or has a potential for future development and the termination shall be as described in the Standard Drawings and Specifications of the Water District or by connection to an existing main.

All improvement plans shall consist of street layout, lot or building layout and number, water main and appurtenance locations, and location of other utilities that may be in conflict. The Developer's Design Engineer is responsible to maintain an unobstructed area for the placement of the water main and appurtenances and allow no conflict with other utilities other than crossing of laterals. Utility laterals shall maintain a minimum of 6" outside diameter to outside diameter clearance except for storm and/or sanitary laterals, 18" clearance below the water main.

The four-(4) foot area over the water main, (3' from curbside) shall be a non-paved, strip totally unobstructed with the exception of:

- a) removable, post type mail boxes;
 - b) utility laterals (gas, electric, telephone, and cable television) maintaining a minimum of 6 inch outside diameter to outside diameter clearance;
 - c) no more than 30' of continuous pavement used as driveways or parking pads;
 - d) street and sidewalk crossings;
 - e) sidewalks (may not be over main, but could encroach on this four-(4) foot area on street radius curves, and cul-de-sacs);
- The ten-(10) foot area over the water main, centered (5' either side) shall be totally unobstructed with the exception of:
- a) items listed above;
 - b) streets, curbs, and gutters;
 - c) sidewalk pavement;
 - d) storm drainage appurtenances

Additional requirements may be required for subdivision plans submissions that create double frontage lots (a lot other than a corner lot that has frontage on more than one public street) along public streets which currently do not have public water. The developer may be responsible for extending the water main along both sides of the double frontage lots if the property would benefit from the extension. If there is a future potential that a water main extension may be made by District's Extension Policy along the existing public street would be beneficial, as determined by the District, an agreement would need to be signed between the developer and the District.

Upon the request of the Developer, the District shall provide the Developer with a letter accepting the water main installation and the start of the one year maintenance period.

1.04

PLAN SUBMITTALS

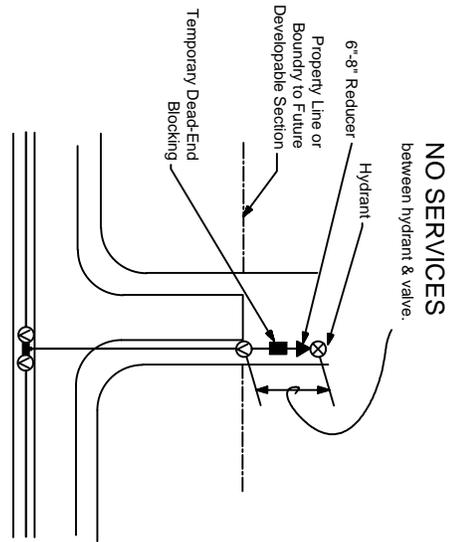
All plans submitted must be dated and bear the stamp and signature of a Professional Engineer licensed in the State of Kentucky. Improvement plans shall be submitted in duplicate for preliminary review by the District. One copy of the improvement plan will be returned to the Engineer for corrections to meet District's Standards. The Engineer will need to revise and resubmit six (6) sets of plans. Also at this time a set of plans in digital format showing curb lines, a north arrow on a 1" = 50' scale will also be submitted for the Districts GIS system. The District will not approve any project until these digital format plans have been received. Distribution of approved plans will be made by the District as follows: Three (3) copies retained by the District; one (1) copy to NKAPC; and two (2) copies returned to the Design Engineer when approval is granted and the District's Subdivision Agreement is signed and returned to the Developer.

- a) the project length is in excess of 10,000 linear feet
- b) a variance from these specifications is required and approved by the District.

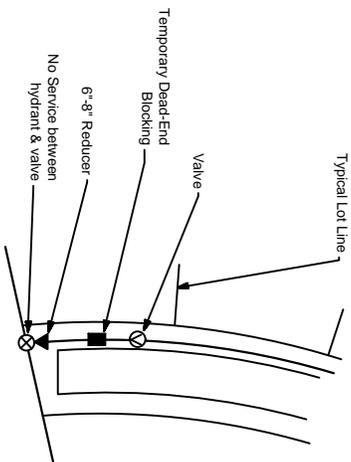
If DOW approval is required an additional three (3) sets of plans must be submitted to the District along with a check made out to the Kentucky State Treasurer in the amount of \$150 for projects less than 10,000 linear feet and \$325 for projects longer than 10,000 by the Developer.

REVISION	BY	DATE

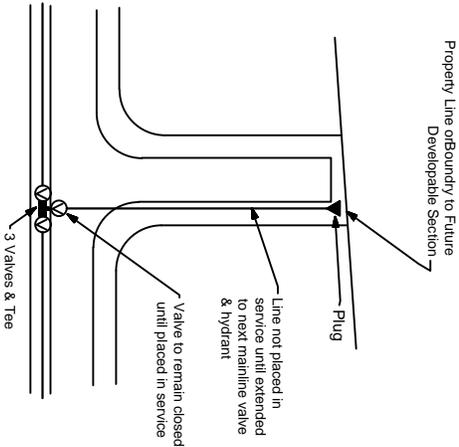
N. KY. WATER DISTRICT	SPECIFICATIONS
DRAWN BY: SAR	
APPROVED: 	
DATE: 8/5/2014	
STANDARD DRAWING NO: 100	



FUTURE SIDE STREET WITH SERVICE ON BRANCH LINE

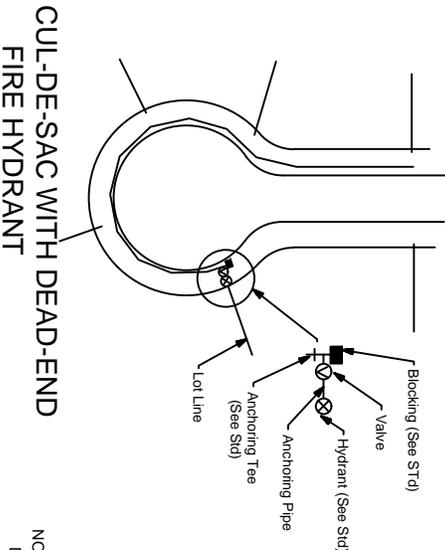


DEAD-END STREET WITH PROPOSED FUTURE EXTENSION

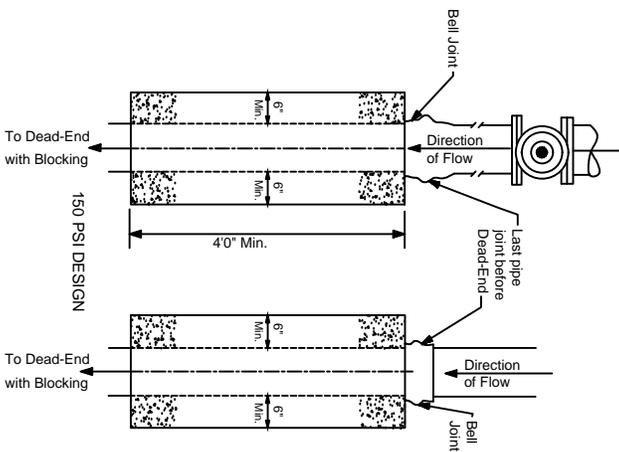


FUTURE SIDE STREET WITHOUT SERVICES ON BRANCH LINE

Water Mains under paved surface shall not exceed maximum 30 in. Ft.; this does not apply to street intersections.



CUL-DE-SAC WITH DEAD-END FIRE HYDRANT



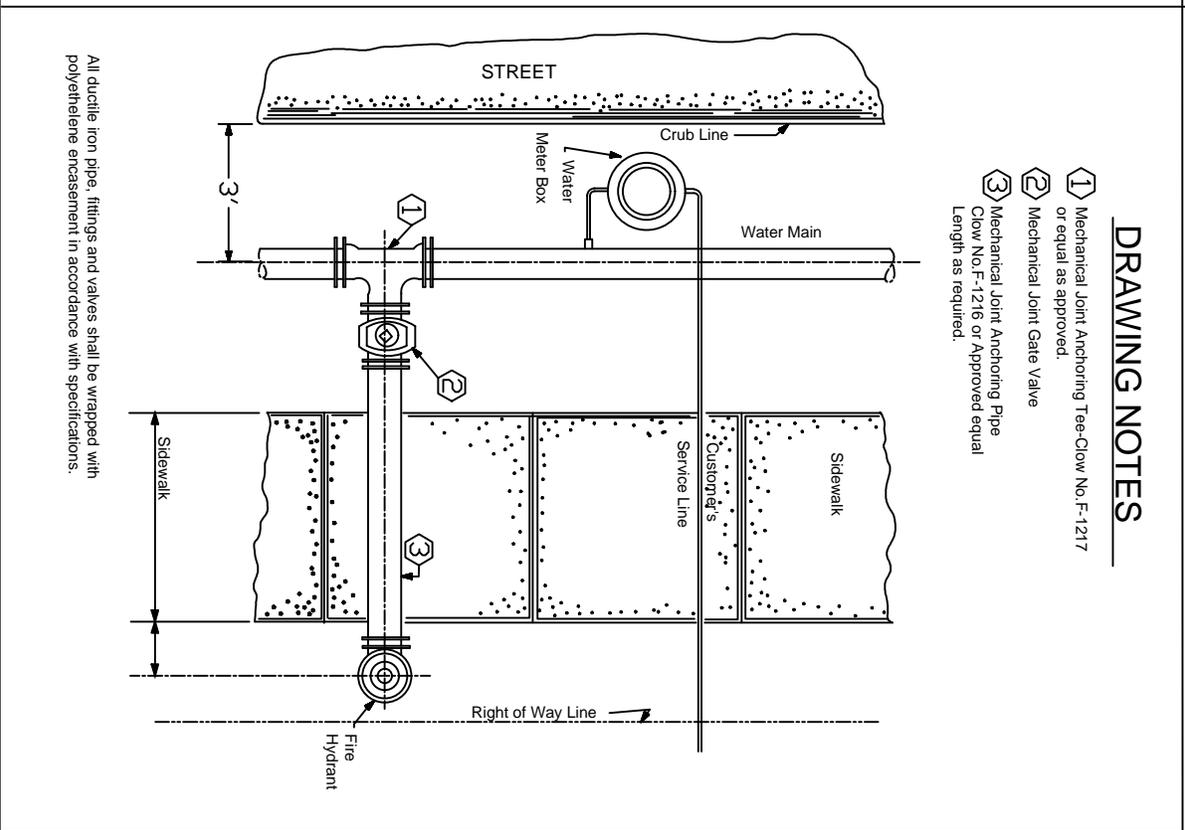
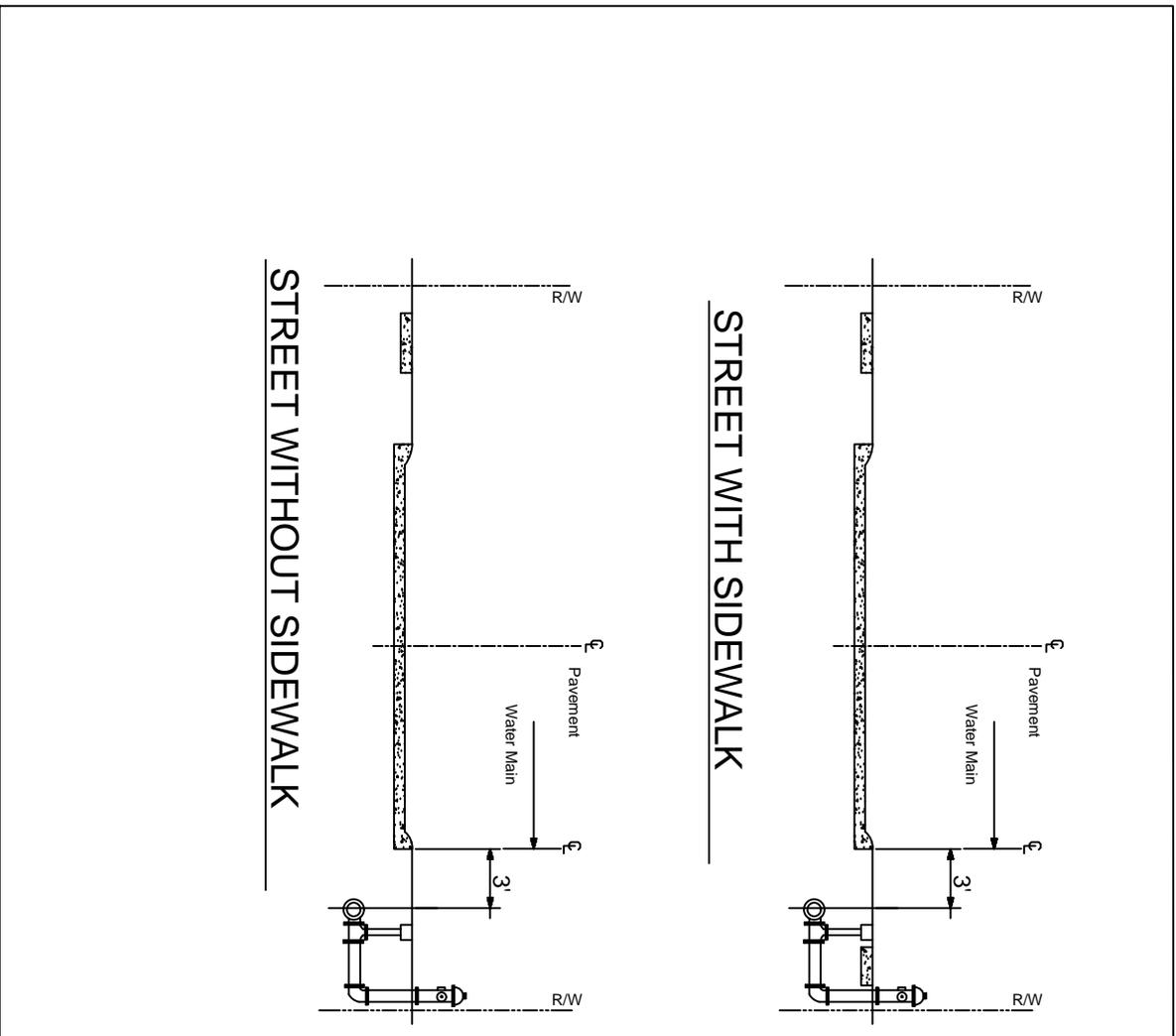
DETAIL FOR TEMPORARY DEAD-END BLOCKING

NOTE: Blocking shall be inspected by the District prior to backfilling.

Blocking shall be Class "A" Concrete or Flowable Fill as approved by the District.

REVISION	BY	DATE
1.	MPS	1/15/93
	MPS	9/22/93

N. KY. WATER DISTRICT	
DRAWN BY: SAR	
APPROVED: <i>[Signature]</i>	
DATE: 8/5/2014	STANDARD DRAWING NO. 101
WATER MAINS TERMINATIONS	



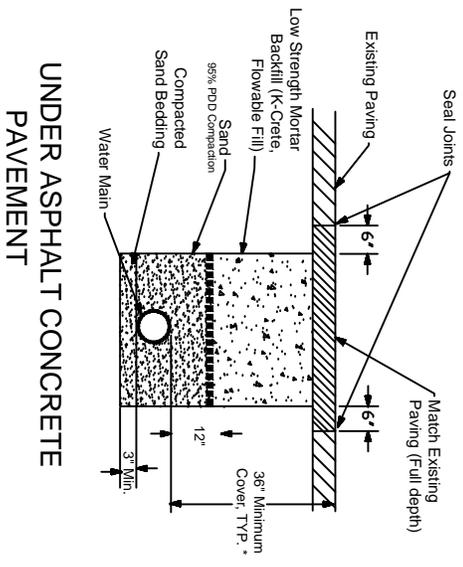
DRAWING NOTES

- ① Mechanical Joint Anchoring Tee-Crow No. F-1217 or equal as approved.
- ② Mechanical Joint Gate Valve
- ③ Mechanical Joint Anchoring Pipe Crow No. F-1216 or Approved equal Length as required.

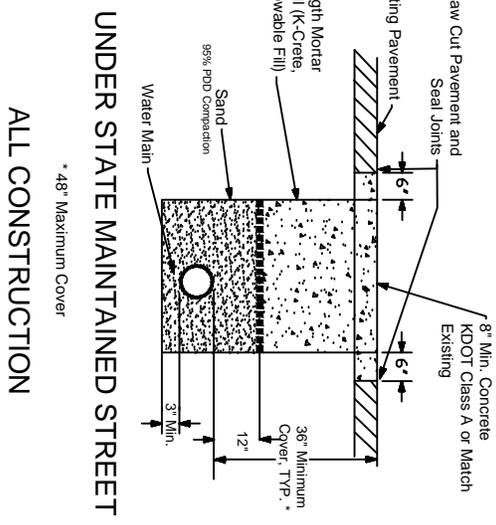
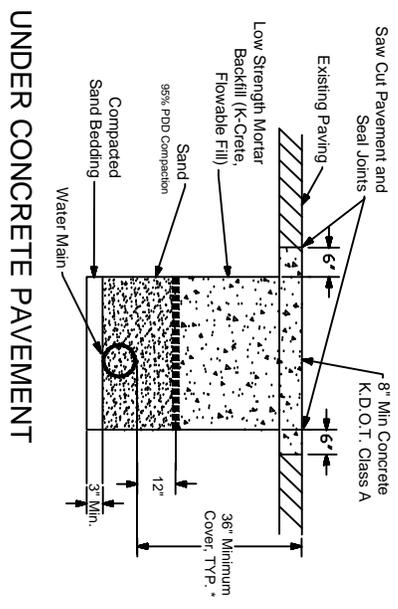
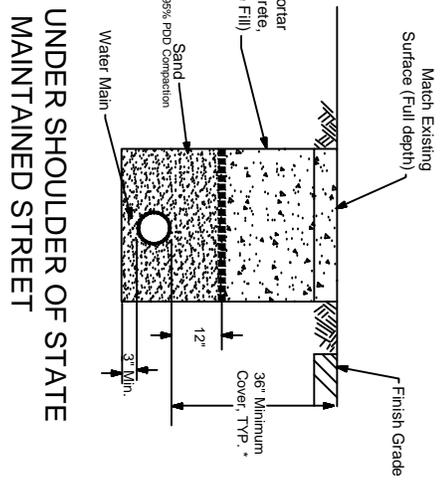
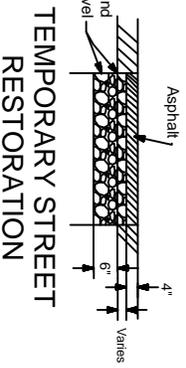
All ductile iron pipe, fittings and valves shall be wrapped with polyethylene encasement in accordance with specifications.

REVISION	BY	DATE
1. The 30' under pvt. not for intersect.	MPS	1/15/93
Detail temp. dead-end blocking.	MPS	9/22/93

N. KY. WATER DISTRICT	
DRAWN BY: SAR	
APPROVED: <i>RA</i>	
DATE: 8/5/2014	STANDARD DRAWING NO. 102
WATER MAINS TERMINATIONS	

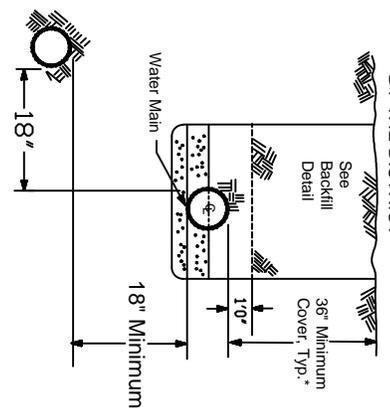
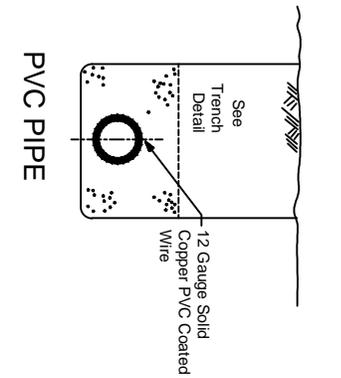
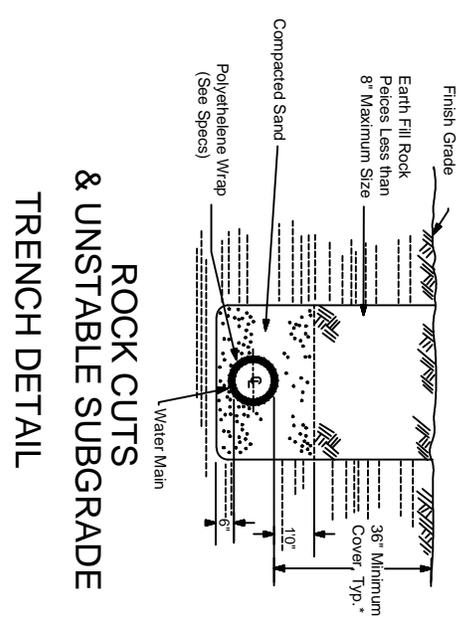
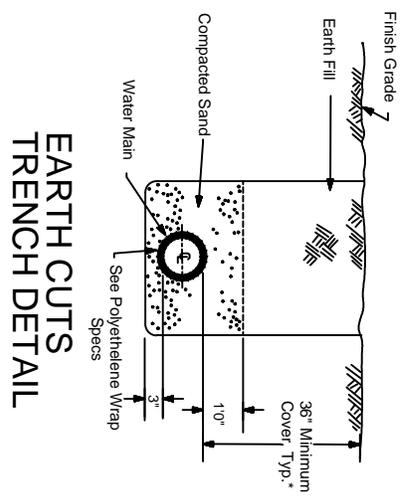


PDD = Standard Proctor Dry Density
-ASTM D698



REVISION	BY	DATE
1. All streets low stgh mortar	MPA	10/30/95

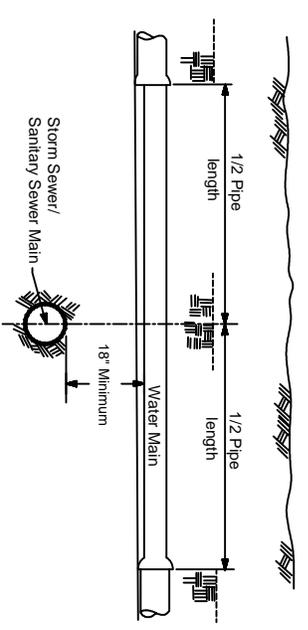
DATE:	8/5/2014
STANDARD DRAWING NO:	103A
DRAWN BY:	SAR
APPROVED:	RM
N. KY. WATER DISTRICT TYPICAL PIPELINE TRENCH DETAIL	



ALTERNATE TO BE USED ONLY ON APPROVAL BY THE DISTRICT

Water Main must be located a minimum of 10 feet lateral distance from any existing or future sewer lines or manholes, or as shown in the above alternate.

WATER MAIN PARALLELING SEWER MAIN



WATER MAIN CROSSING SEWER

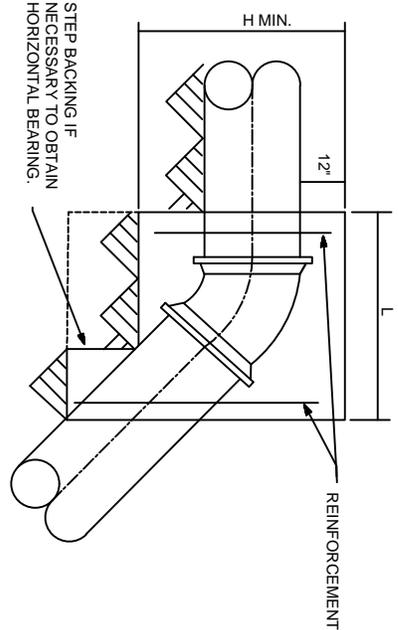
SUBDIVISION CONSTRUCTION

TRENCH DETAIL

* Unless Otherwise Noted

REVISION	BY	DATE
1	MPS	1/15/93
8" Max. Rock size		

N. KY. WATER DISTRICT		
TYPICAL PIPELINE TRENCH DETAIL		
DRAWN BY:	SAR	
APPROVED:	RA	
DATE:	8/5/2014	
STANDARD DRAWING NO.:	103	

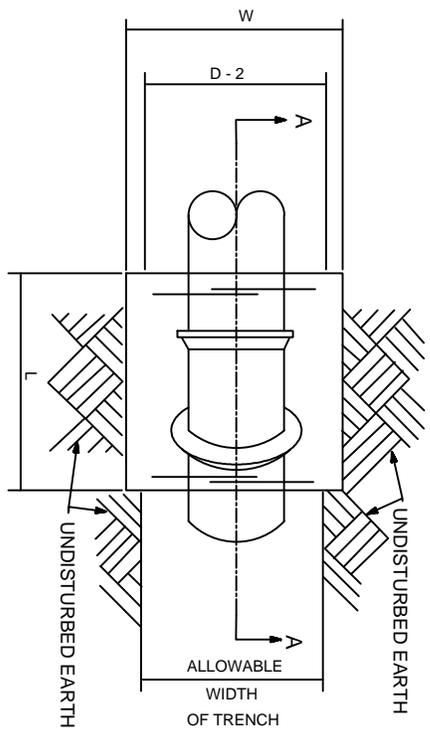


CONCRETE BACKING FOR VERTICAL BENDS

1. BACKING DESIGNED FOR 3000 POUNDS PER SQUARE FOOT SOIL BEARING AND 150 POUNDS PER SQUARE INCH INTERNAL PRESSURE.
 2. PROVIDE MINIMUM CONCRETE REINFORCEMENT OF 2 PAIR OF TWO 5" "U" BARS @ 12" C.
 3. CENTER BACKING ON BEND.
- BLOCKING FOR SIZES NOT SHOWN SHALL USE THE NEXT LARGER SIZE.

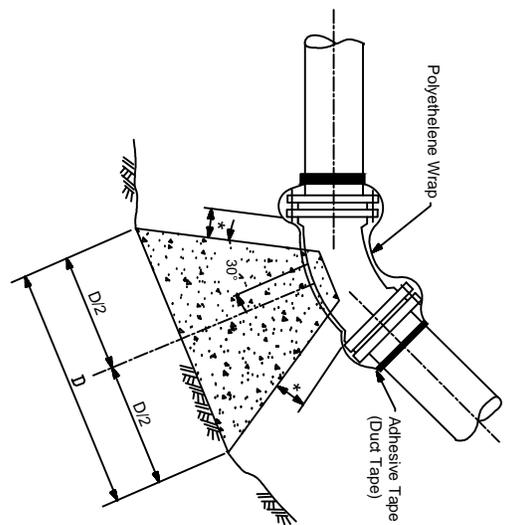
SIZE of PIPE	11 1/4			22 1/2			45					
	L"	W"	H"	L"	W"	H"	L"	W"	H"	VOL.		
4"	12	24	16	2.7	15	30	18	4.7	22	36	24	11.0
6"	12	43	18	5.4	16	48	34	15.1	30	55	24	22.9
8"	12	54	24	9.0	18	57	36	21.4	36	57	33	39.2
12"	20	63	36	26.3	37	62	37	49.2	48	62	51	88.0
16"	31	65	38	44.4	60	65	39	88.2	65	65	65	159.2
20"	45	70	40	73.0	56	70	60	136.4	72	76	78	247.5
24"	47	72	54	106.0	67	74	69	198.4	88	84	84	360.1

NOTE: VOLUMES GIVEN IN CUBIC FEET

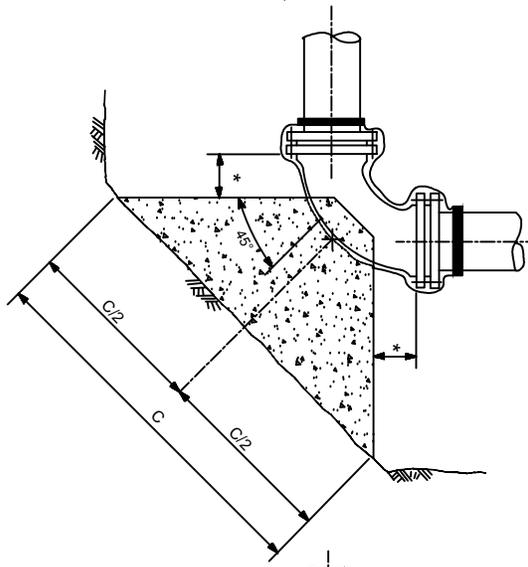


PLAN

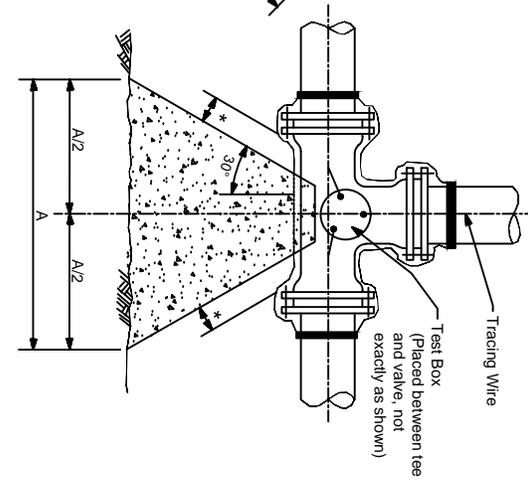
N. KY. WATER DISTRICT CONCRETE THRUST BLOCKING FOR VERTICAL BENDS	REVISION BY DATE	
DRAWN BY: SAR APPROVED: <i>[Signature]</i>		
DATE: 8/5/2014 STANDARD DRAWING NO. 1044A		



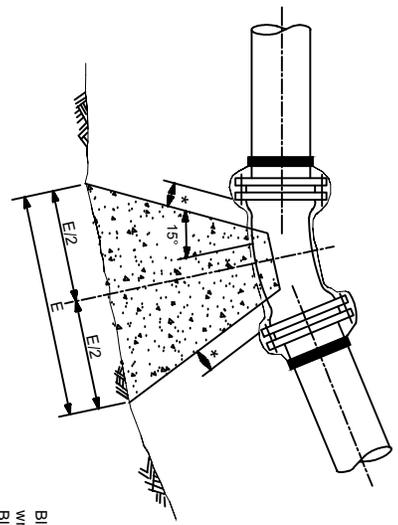
45° BEND



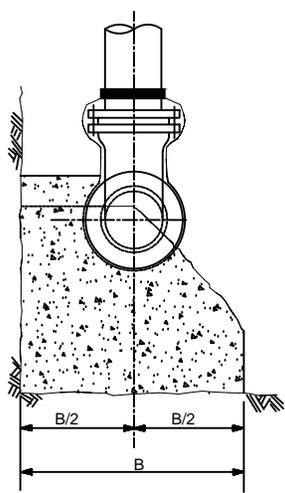
90° BEND



TEE (DEAD END OR FIRE HYDRANT SIMILAR)



11 1/4° & 22 1/2° BEND



ELEVATION

PIPE SIZE	A	B	C	D	E
6"	20'26"	16'16"	30'36"	16'20"	10'10"
8"	26'36"	20'20"	36'46"	20'26"	10'16"
10"	36'40"	26'26"	46'56"	26'30"	16'16"
12"	40'50"	30'30"	56'66"	30'36"	16'20"
16"	50'60"	30'40"	70'86"	40'46"	30'30"
20"	60'76"	50'50"	70'106"	40'60"	30'30"

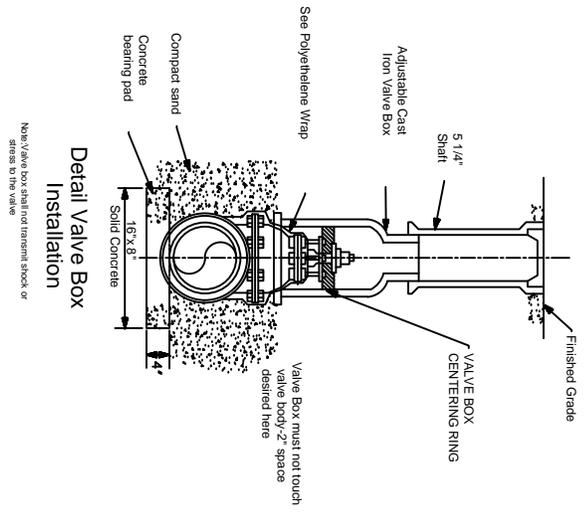
* Distance to be 1/2" longer than entire length of the bolt used.

NOTES

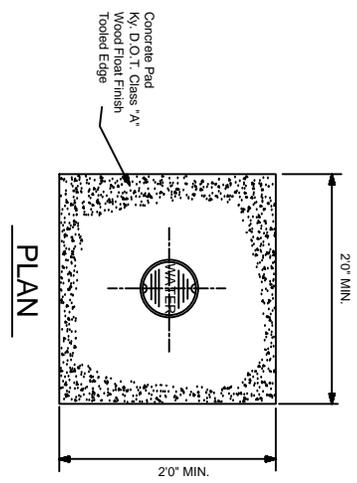
1. DIP Fittings shall be per specifications.
2. Concrete to be 3500 psi.
3. All fittings to be Mechanical Joint.
4. Thrust blocks to be placed against undisturbed earth - use additional concrete as required for over excavation.
5. Blocking to be placed in a manner so that bolts can be removed without disturbing the block.

Blocking shall be poured after blue polyethylene wrap is in place.
Blocking shall be inspected by the District prior to backfilling.

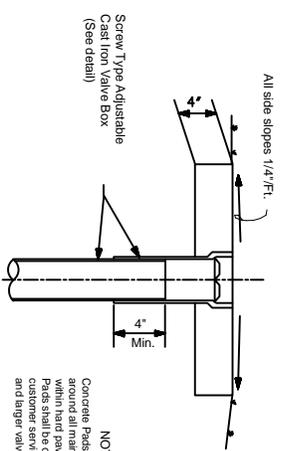
DRAWN BY: SAR	N. KY. WATER DISTRICT CONCRETE THRUST BLOCK DETAIL		REVISION	BY DATE
	APPROVED: 	DATE: 8/5/2014	STANDARD DRAWING NO. 104	[]



Detail Valve Box Installation
Notes: Valve box shall not transmit shock or stress to the valve.



PLAN



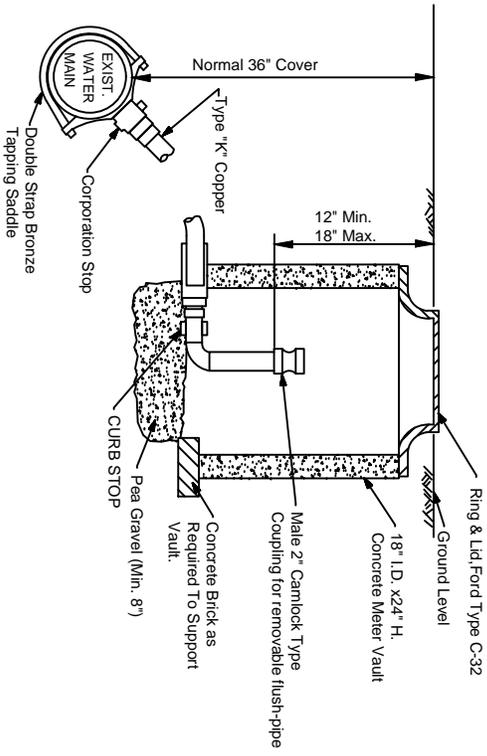
ELEVATION

NOTES
Concrete Pads shall be constructed within hand poured concrete. Pads shall be constructed around customer service line valve boxes 3\"/>

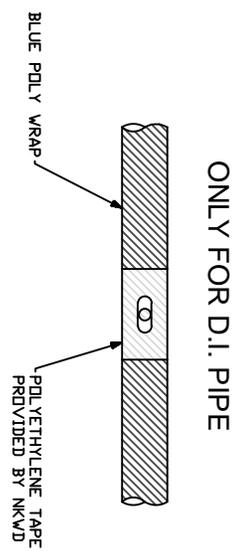
Screw Type Adjustable Cast Iron Valve Box (See detail)

REVISION		BY	DATE
+	20\"/>	MPS	6/28/93
	Detail Valve Box Installation	MPS	9/22/93

DRAWN BY: SAR		N. KY. WATER DISTRICT VALVE BOX AND VALVE PAD DETAIL
APPROVED: RA		
DATE:	8/5/2014	
STANDARD DRAWING NO:	105	



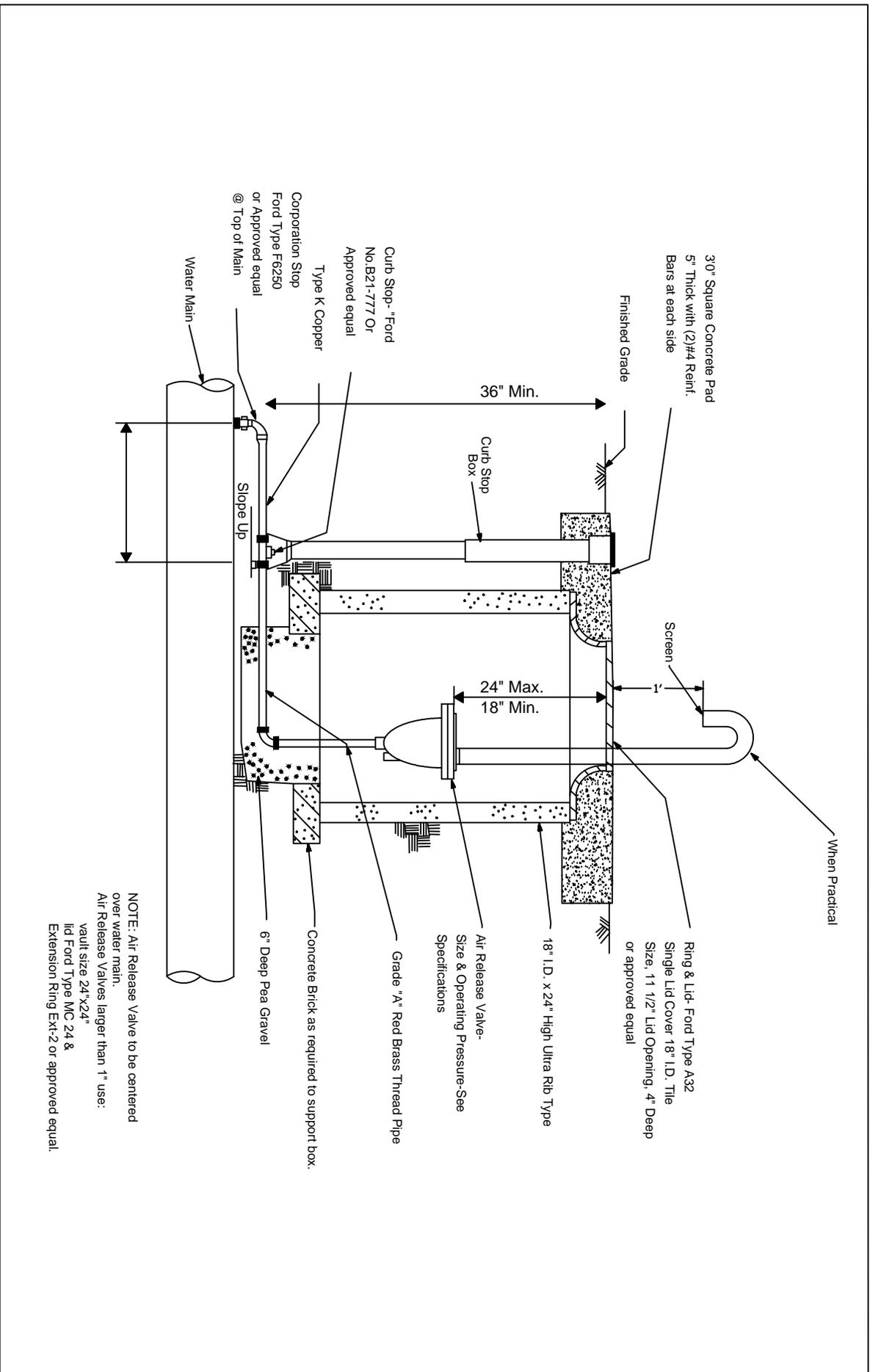
**TYPICAL MANUAL AIR RELEASE VALVE
INSTALLATION**
N.T.S.



ONLY FOR D.I. PIPE

REVISION		BY DATE	

DATE:	8/5/2014	N. KY. WATER DISTRICT
STANDARD DRAWING NO.	106A	
DRAWN BY:	SAR	TYPICAL MANUAL AIR RELEASE VALVE INSTALLATION
APPROVED:	<i>[Signature]</i>	



Curb Stop - "Ford
No. B21-777 Or
Approved equal
Type K Copper
Corporation Stop
Ford Type F6250
or Approved equal
@ Top of Main

30" Square Concrete Pad
5" Thick with (2)#4 Reinf.
Bars at each side

Finished Grade

36" Min.

Curb Stop
Box

Slope Up

Water Main

Screen

24" Max.
18" Min.

When Practical

Ring & Lid- Ford Type A32
Single Lid Cover 18" I.D. Tile
Size, 1 1/2" Lid Opening, 4" Deep
or approved equal

18" I.D. x 24" High Ultra Rib Type

Air Release Valve-
Size & Operating Pressure-See
Specifications

Grade "A" Red Brass Thread Pipe

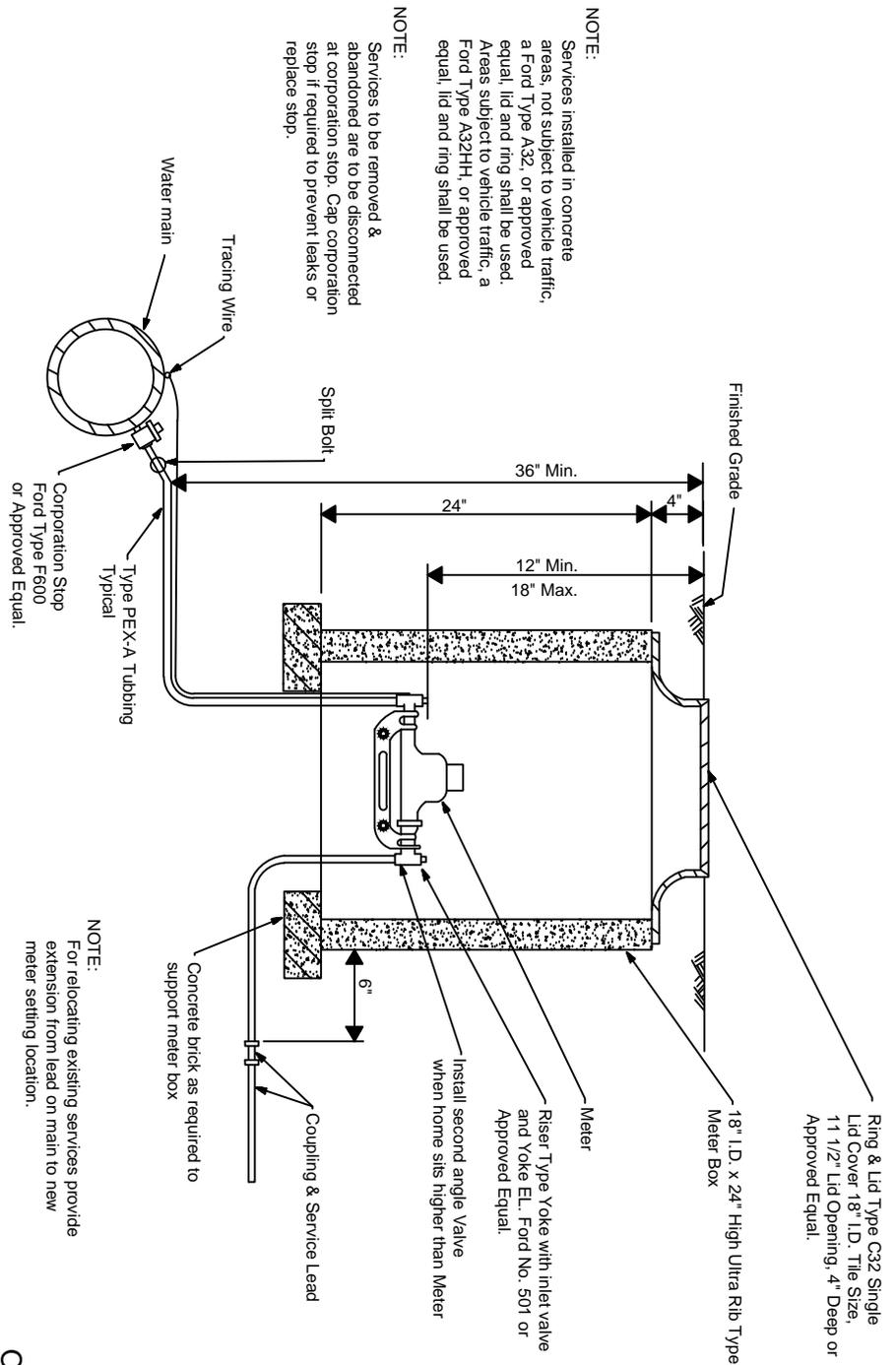
Concrete Brick as required to support box.

6" Deep Pea Gravel

NOTE: Air Release Valve to be centered
over water main.
Air Release Valves larger than 1' use:
vault size 24"x24"
lid Ford Type MC 24 &
Extension Ring Ext-2 or approved equal.

REVISION	BY	DATE

DRAWN BY: SAR		N. KY. WATER DISTRICT AIR RELEASE VALE
APPROVED: <i>[Signature]</i>		
DATE: 8/5/2014	STANDARD DRAWING NO: 106	



NOTE:
Services installed in concrete areas, not subject to vehicle traffic, a Ford Type A32, or approved equal, lid and ring shall be used. Areas subject to vehicle traffic, a Ford Type A32HH, or approved equal, lid and ring shall be used.

NOTE:
Services to be removed & abandoned are to be disconnected at corporation stop. Cap corporation stop if required to prevent leaks or replace stop.

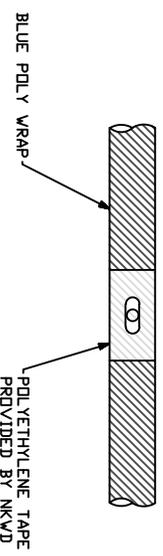
PVC Mains-Use single hand brass saddle
Ford Type 101 BS or equal.

NOTE:
For relocating existing services provide extension from lead on main to new meter setting location.

Ring & Lid Type C32 Single Lid Cover 18" I.D. Tile Size, 11 1/2" Lid Opening, 4" Deep or Approved Equal.

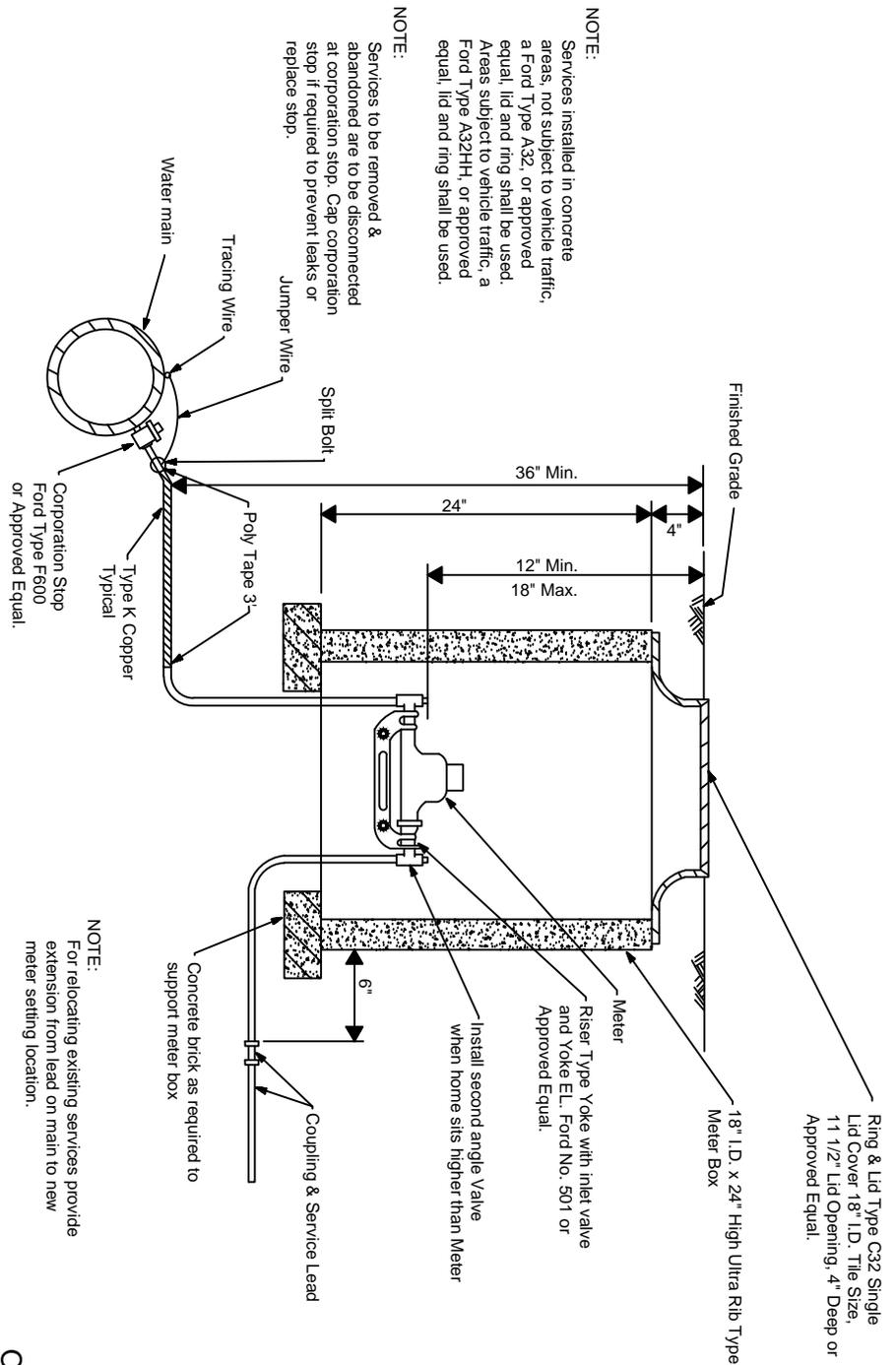
18" I.D. x 24" High Ultra Rib Type Meter Box
Meter
Riser Type Yoke with inlet valve and Yoke EL. Ford No. 501 or Approved Equal.
Install second angle Valve when home sits higher than Meter

Coupling & Service Lead
Concrete brick as required to support meter box



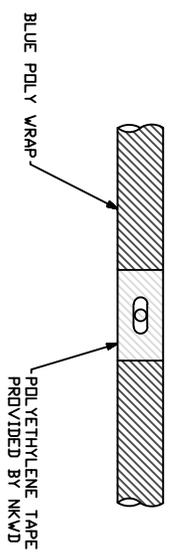
REVISION	BY	DATE

N. KY. WATER DISTRICT	
5/8" & 1" METER SETTING PEX-A SERVICE LINE	
DRAWN BY: SAR	
APPROVED:	
DATE: 8/5/2014	
STANDARD DRAWING NO: 107-A	



PVC Mains-use single band brass saddle
Ford Type 101 BS or equal.

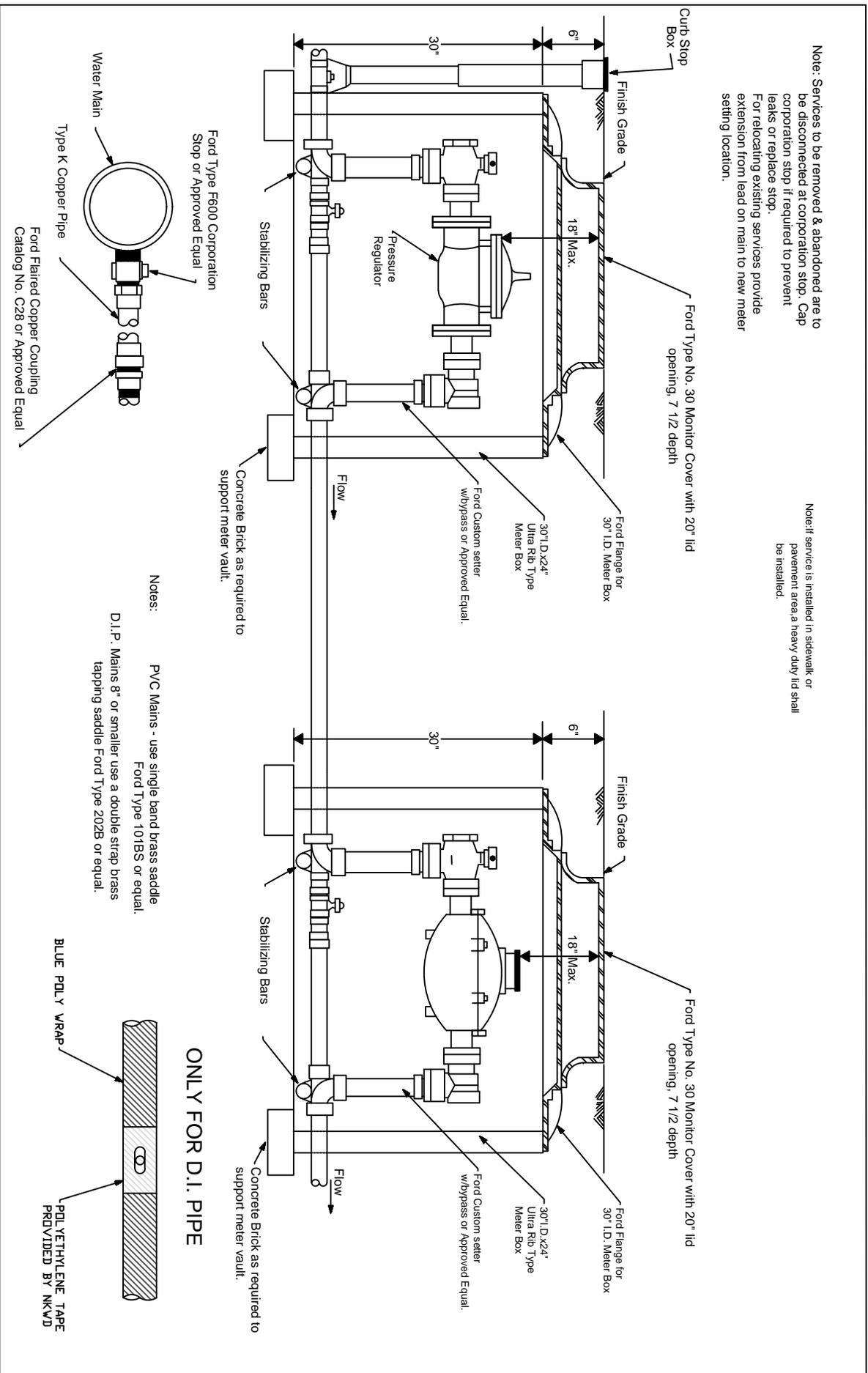
NOTE:
For relocating existing services provide extension from lead on main to new meter setting location.



ONLY FOR D.I. PIPE

REVISION	BY	DATE

N. KY. WATER DISTRICT	
5/8" & 1" METER SETTING COPPER	
DRAWN BY: SAR	DATE: 8/5/2014
APPROVED: <i>[Signature]</i>	STANDARD DRAWING NO: 107

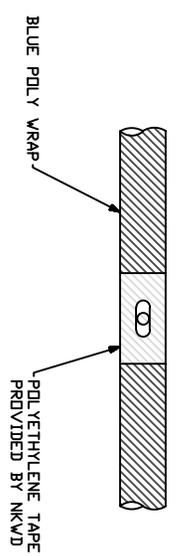
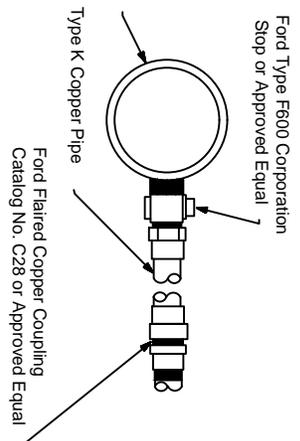


Note: Services to be removed & abandoned are to be disconnected at corporation stop. Cap leaks or replace stop.
For relocating existing services provide extension from lead on main to new meter setting location.

Note: If service is installed in sidewalk or pavement area, a heavy duty lid shall be installed.

Notes:

PVC Mains - use single band brass saddle Ford Type 101BS or equal.
D.I.P. Mains 8" or smaller use a double strap brass tapping saddle Ford Type 202B or equal.



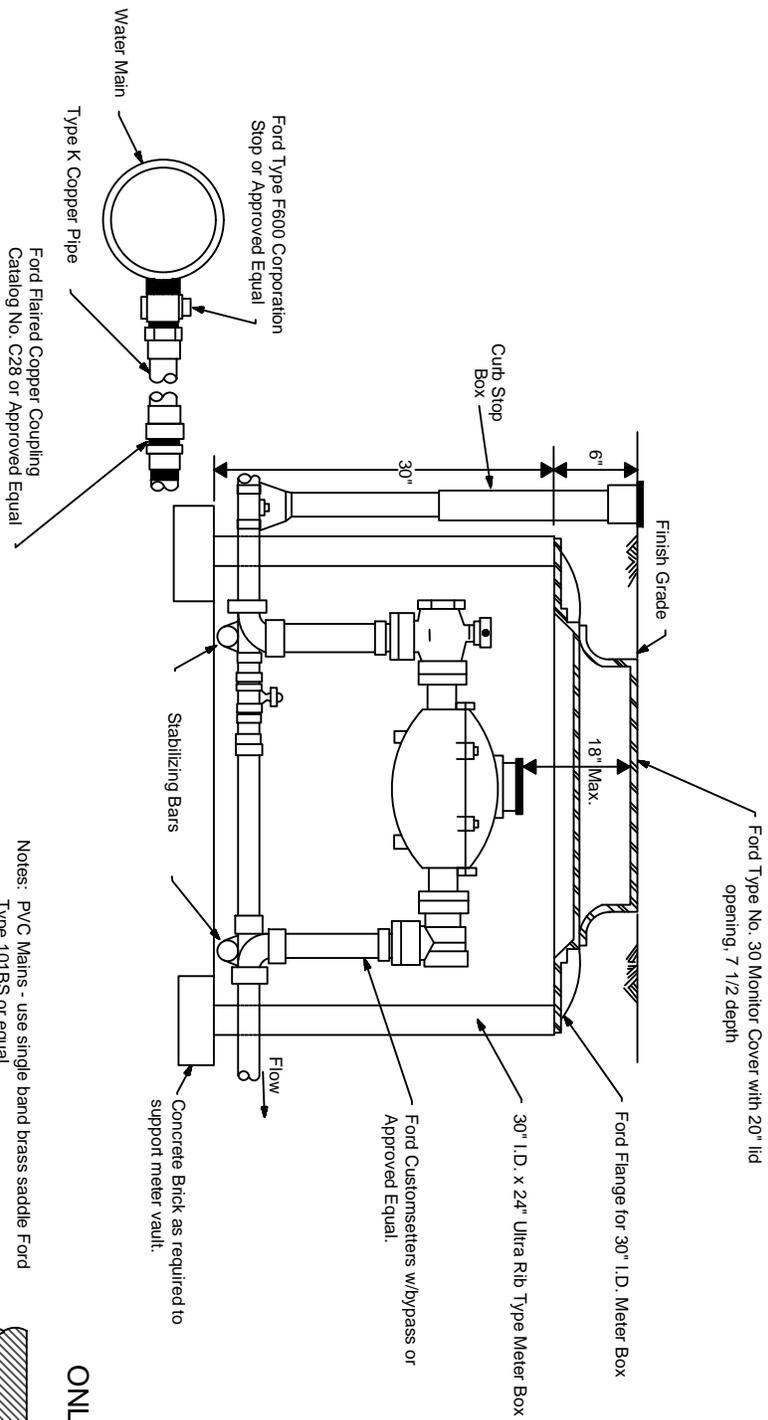
ONLY FOR D.I. PIPE

REVISION	BY	DATE

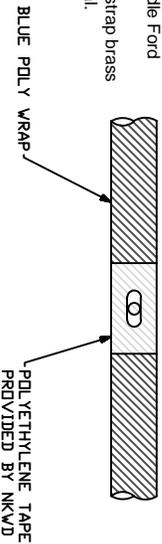
N. KY. WATER DISTRICT	
1-1/2" & 2" METER SETTING	
REQUIRING PRESSURE REGULATOR	
DRAWN BY: SAR	
APPROVED: <i>RH</i>	
DATE: 8/5/2014	
STANDARD DRAWING NO: 108-A	

Note: Services to be removed & abandoned are to be disconnected at corporation stop. Cap corporation stop if required to prevent leaks or replace stop. For relocating existing services provide extension from lead on main to new meter setting location.

Note: If service is installed in sidewalk or pavement area a heavy duty lid shall be installed.



Notes: PVC Mains - use single band brass saddle Ford Type 101BS or equal.
D.I.P. Mains 8" or smaller use a double strap brass tapping saddle Ford Type 202B or equal.

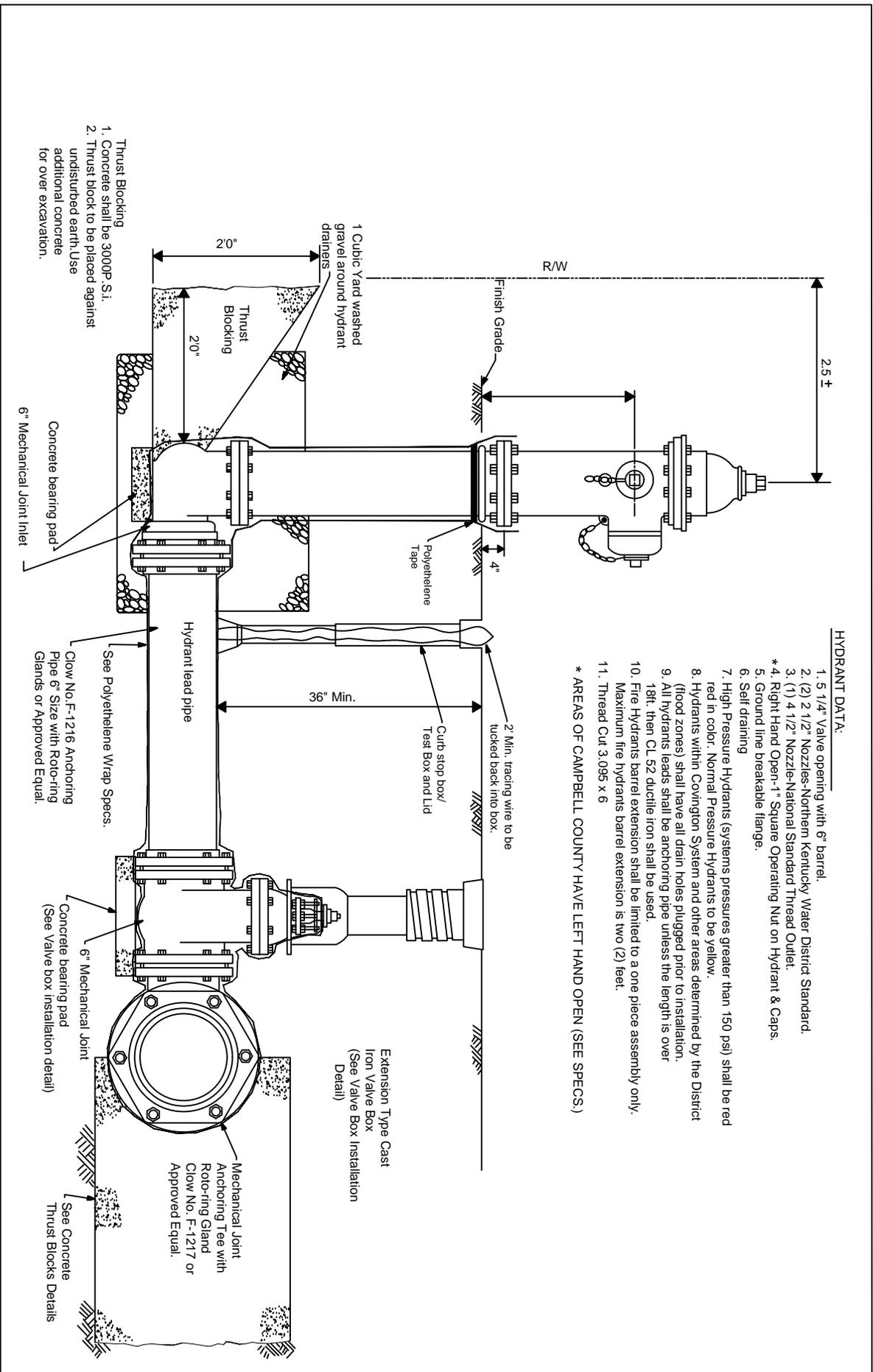


ONLY FOR D.I. PIPE

REVISION	BY	DATE

N. KY. WATER DISTRICT
1-1/2" & 2" METER SETTING

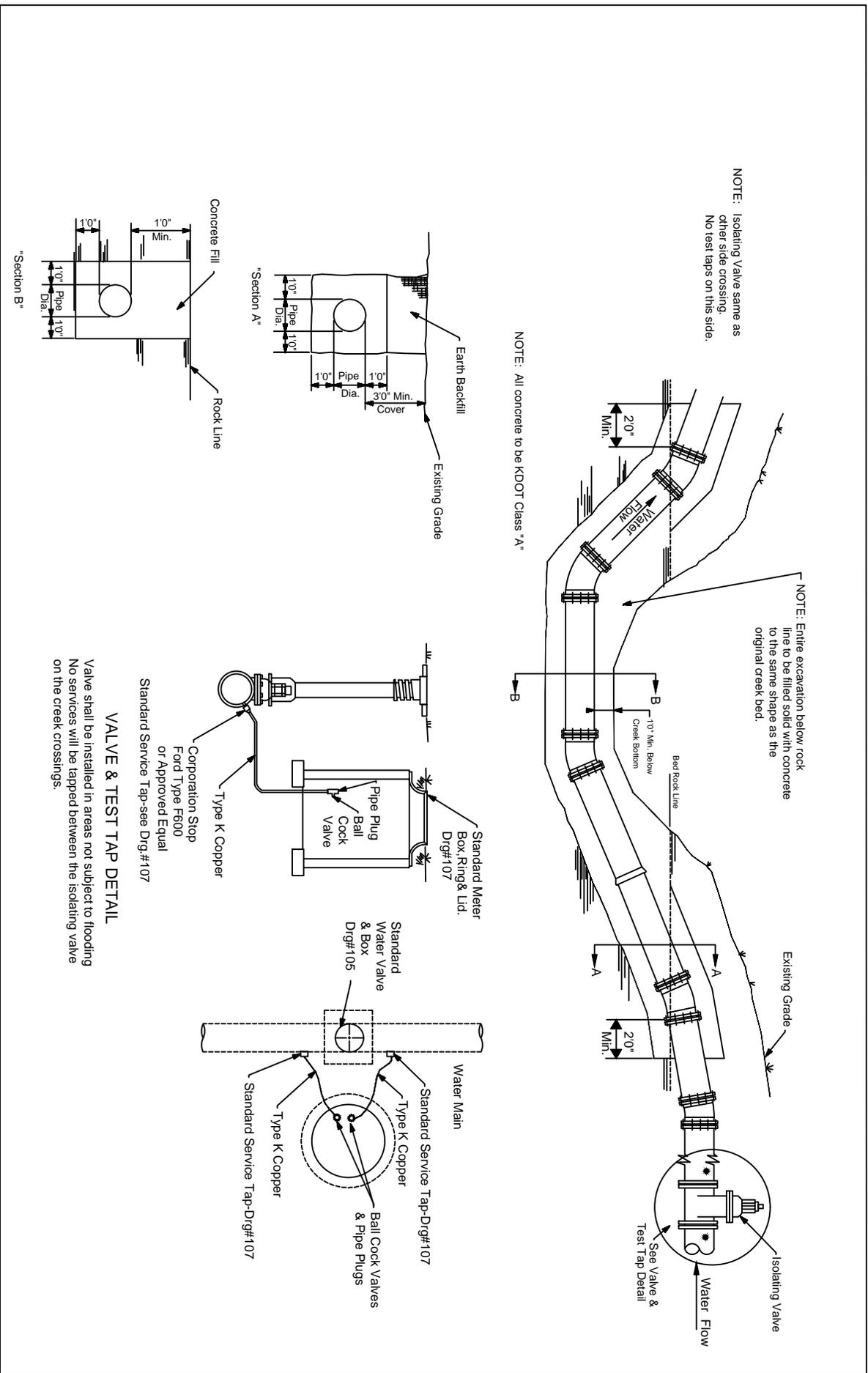
DRAWN BY: SAR
APPROVED: *RH*
DATE: 8/5/2014
STANDARD DRAWING NO. 108



REVISION	BY	DATE
Blocking conc.pads.polywrap	MPS	8/22/93
Extension to barrel	MPS	12/22/93
Blocking inside R/W	MPS	10/25/95

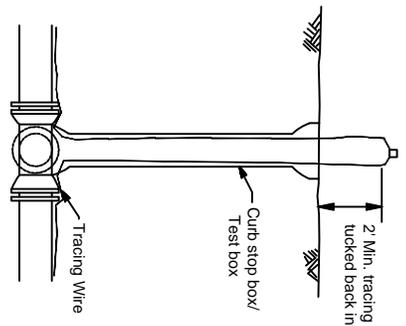
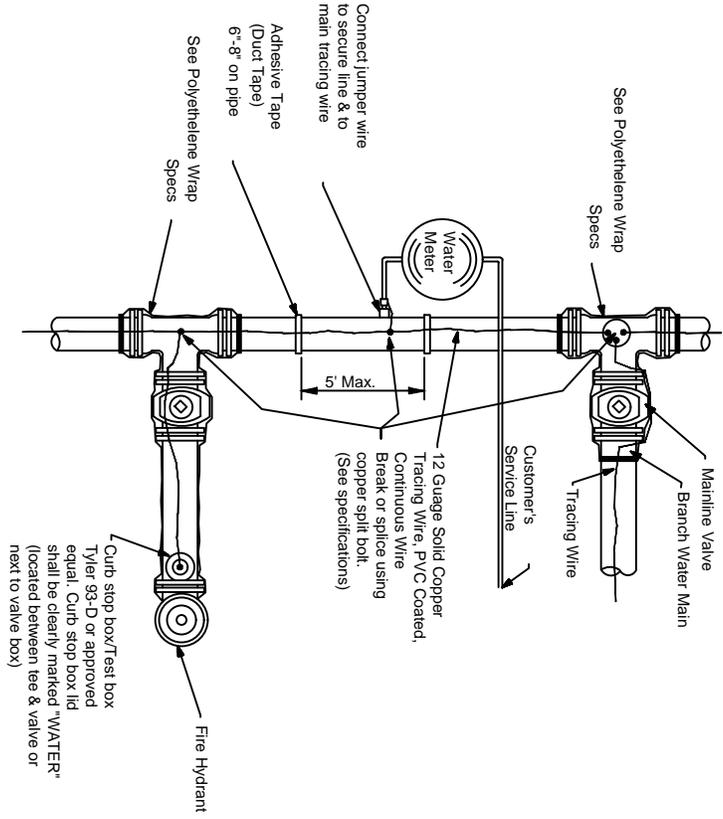
DATE:	8/5/2014
STANDARD DRAWING NO.	109
DRAWN BY:	SAR
APPROVED:	<i>RH</i>

N. KY. WATER DISTRICT	
HYDRANT ASSEMBLY	



REVISION	BY	DATE

N. KY. WATER DISTRICT CONCRETE ENCASUREMENT AT CREEK CROSSING		
DRAWN BY: SAR	DATE: 8/5/2014	STANDARD DRAWING NO. 110
APPROVED: <i>[Signature]</i>		



Connect wires using copper split bolt.

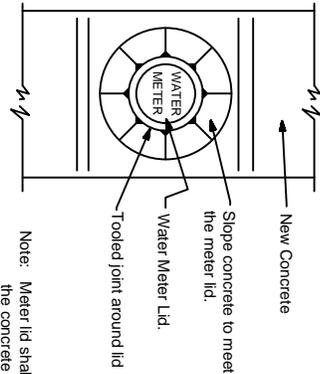
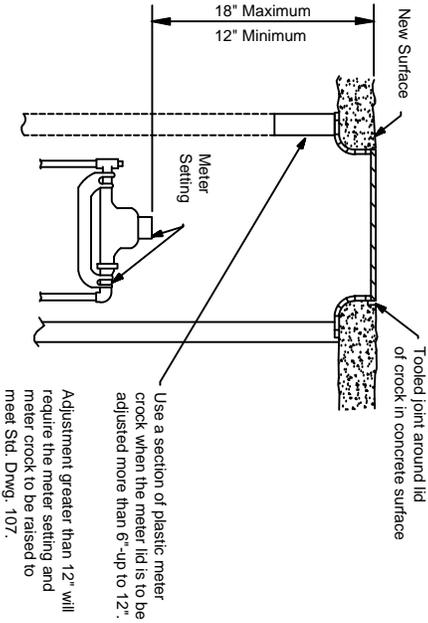
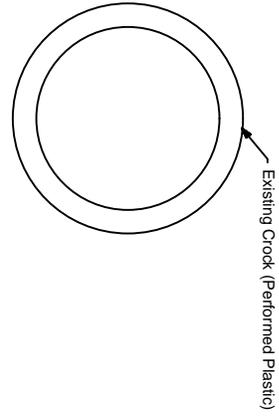
Note: Curb stop box/test box shall not be installed in paved areas.

**DUCTILE IRON AND PVC PIPE
WITH DUCTILE IRON FITTINGS**

Curb stop box/test box Tyler 93-D or approved equal. Curb stop box lid shall be clearly marked "WATER" (located between tee & valve or next to valve box)

REVISION	BY	DATE

N. KY. WATER DISTRICT	
TRACING WIRE INSTALLATION DETAIL	
DRAWN BY: SAR	APPROVED: <i>PH</i>
DATE: 8/5/2014	STANDARD DRAWING NO: 111

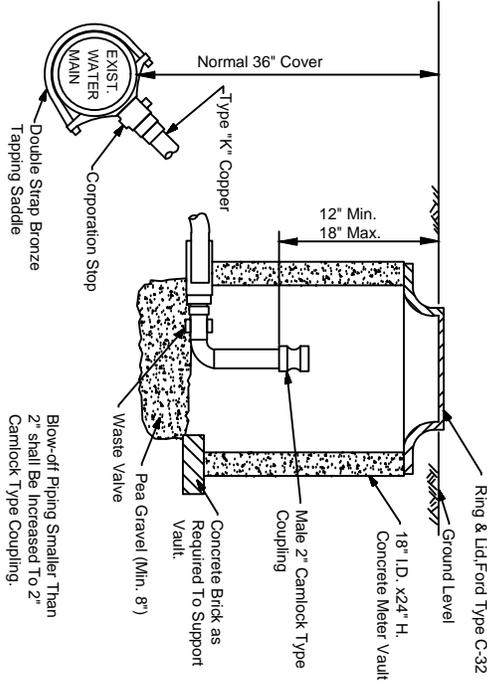


NOTE: SERVICES INSTALLED IN CONCRETE AREAS, NOT SUBJECT TO VEHICLE TRAFFIC, A FORD TYPE A32, OR APPROVED EQUAL, LID AND RING SHALL BE USED. AREAS SUBJECT TO VEHICLE TRAFFIC, A FORD TYPE A32HH, OR APPROVED EQUAL, LID AND RING SHALL BE USED.

PLASTIC (PVC) METER CROCKS shall be raised by use of an adapter with a section of plastic crook cut to achieve final grade.
 At no time shall wood be used to adjust the ring and lid to grade.
 Meter ring and lids shall be reset solidly and shall have no broken edge to allow dirt to enter the crook.
 If the meter box is damaged beyond repair, it shall be replaced. See Standard Drawing 107.
RAISING CURB STOPS OR VALVE BOXES:
 Curb stop boxes and valve boxes shall be raised by turning the upper section to meet grade. If the upper section cannot be raised in this manner it shall be carefully broken off and replaced.
 New upper sections shall be supplied by NKWD

REVISION	BY	DATE

N. KY. WATER DISTRICT	
ADJUSTING RING & LID TO GRADE	
DRAWN BY: SAR	APPROVED: MA
DATE: 8/5/2014	STANDARD DRAWING NO. 112

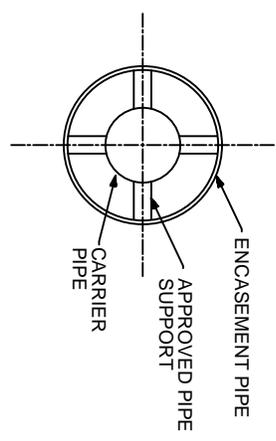
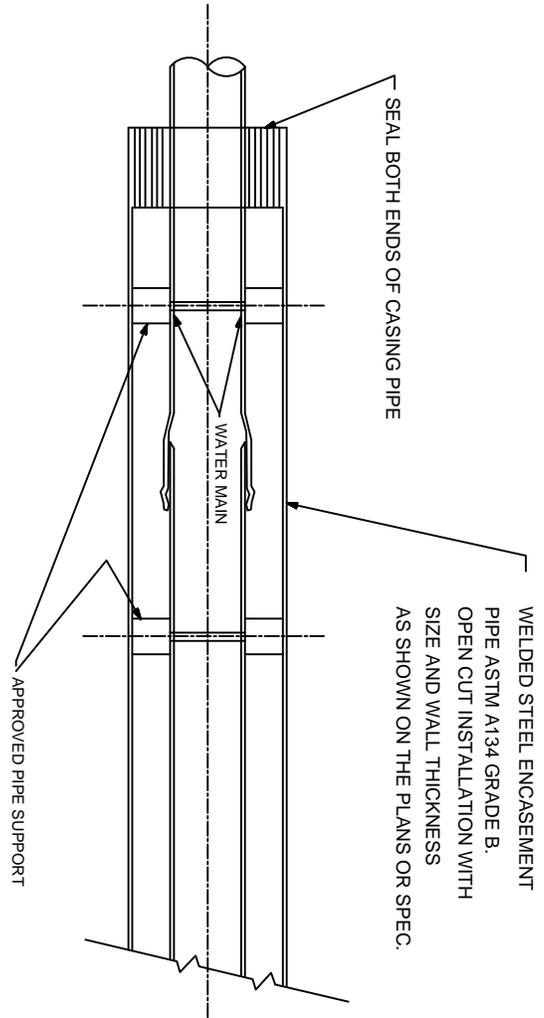


**TYPICAL FLUSHING DEVICE
INSTALLATION**
N.T.S.

Blow-off Piping Smaller Than
2" shall Be Increased To 2"
Camlock Type Coupling.

REVISION	BY	DATE

N. KY. WATER DISTRICT	
TYPICAL FLUSHING DEVICE INSTALLATION	
DRAWN BY: SAR	
APPROVED: <i>[Signature]</i>	
DATE: 8/5/2014	
STANDARD DRAWING NO. 113	



NOTE: CASING PIPE JOINTS SHALL BE SEAM WELDED SO THAT CASING IS WATER TIGHT FROM END TO END.

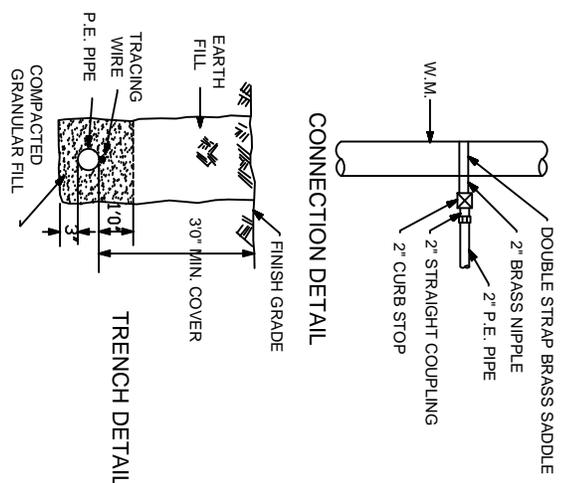
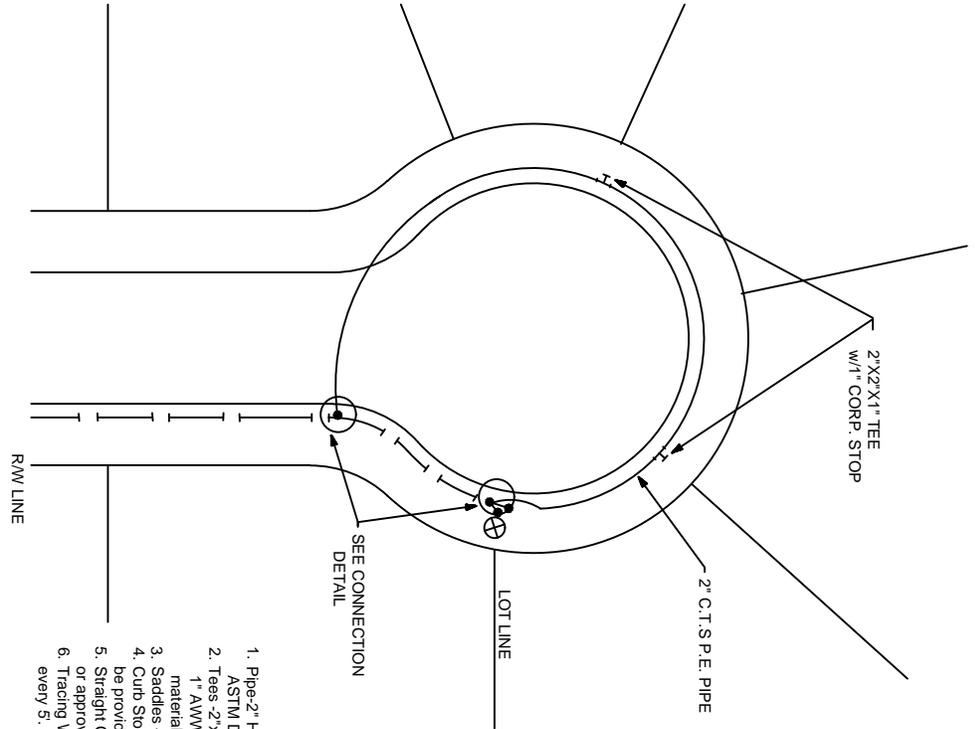
1. All carrier pipe placed in steel casing pipe shall be minimum class 50 ductile iron pipe and conform to the latest edition of AWWA C151.
2. Carrier pipe gaskets shall develop a wedging action between pairs of high-strength stainless steel elements spaced around the gasket (FIELD LOK, FASTGRIP, or approved equal gaskets).

ENCASUREMENT PIPE DETAIL

NO SCALE

REVISION	BY	DATE
1. Remove Granular Fill	JS	2/1/00

N. KY. WATER DISTRICT	
ENCASEMENT PIPE DETAIL	
DRAWN BY: SAR	APPROVED: RA
DATE: 8/5/2014	STANDARD DRAWING NO: 114



- Materials
1. Pipe - 2" High Density Polyethylene Water Service Pipe, Class 200 (SDR-9), C.T.S.-OD, 200psi, ASTM D-2737.
 2. Tees - 2" X 2" X 1" with Pack Joints both ends, side outlet tapped for corp stop. Ford T440-774 1" AWWA Taper Threads with Ford 1" F600 Corporation Stop or approved equal.
 3. Saddles - Ford 202B Double Strap Brass Saddles (IP Threads) or approved equal.
 4. Curb Stops - Ford 2" B11-777 Ball Valves for Iron Pipe or approved equal. A curb stop box shall be provided.
 5. Straight Couplings - Ford 2" C84-77 Male Iron Pipe Thread to Pack Joint type fittings for P.E. Pipe or approved equal.
 6. Tracing Wire - 12 gauge solid copper (P.V.C. coated) tracing wire taped to the top of the pipe every 5'.

GENERAL INFORMATION

1. This detail is not designed to eliminate dead-end water mains. This is an alternate to installing 6" or 8" pipe around a cul-de-sac.
2. Tees for services need to be dropped off on the opposite lot lines of the electric and other utilities.
3. Tees for services will need to be properly installed with some type of above ground markers.
4. P.E. Pipe shall be installed after the curb are installed.
5. The only joints made in the P.E. pipe shall be made at the water service tees.
6. 1" copper tubing will need to be provided for one of the water service tees for flushing purposes.

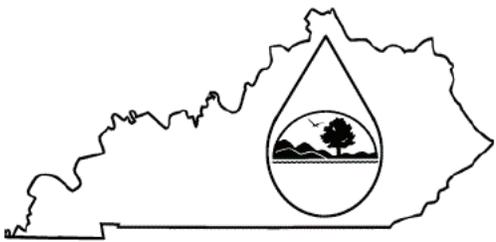
REVISION	BY	DATE

N. KY. WATER DISTRICT	
2" P.E. AROUND CUL-DE-SAC	
DRAWN BY:	SAR
APPROVED:	<i>SA</i>
DATE:	8/5/2014
STANDARD DRAWING NO.	115

CID 20-4407
Kenton County
Highway Safety Improvement Project along KY 17
from MP 4.300 – 2.766
Item No.: 6-9014.01

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

eForm Submittal ID: 155152

	<h2 style="margin: 0;">KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)</h2> <p style="margin: 5px 0;">Notice of Intent (NOI) for coverage of Storm Water Discharge Associated with Construction Activities Under the KPDES Storm Water General Permit KYR100000</p> <p style="margin: 5px 0;">Click here for Instructions (Controls/KPDES_FormKYR10_Instructions.htm)</p> <p style="margin: 5px 0;">Click here to obtain information and a copy of the KPDES General Permit. (http://dep.ky.gov/formslibrary/Documents/KYR10PermitPage.pdf)</p> <p style="margin: 5px 0;">(*) indicates a required field; (✓) indicates a field may be required based on user input or is an optionally required field</p>
-----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Reason for Submittal:(*) <input style="width: 95%;" type="text"/>	Agency Interest ID: <input style="width: 95%;" type="text" value="Agency Interest ID"/>	Permit Number:(✓) <input style="width: 95%;" type="text" value="KPDES Permit Number"/>
----------------------------------------------------------------------	--------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------

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

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

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

SECTION I -- FACILITY OPERATOR INFORMATION (PERMITTEE)

Company Name:(✓) <input style="width: 95%;" type="text" value="Kentucky Transportation Cabinet, District 6"/>	First Name:(✓) <input style="width: 95%;" type="text" value="Bob"/>	M.I.: <input style="width: 95%;" type="text" value="MI"/>	Last Name:(✓) <input style="width: 95%;" type="text" value="Yeager"/>
Mailing Address:(*) <input style="width: 95%;" type="text" value="421 Buttermilk Pike"/>	City:(*) <input style="width: 95%;" type="text" value="Covington"/>	State:(*) <input style="width: 95%;" type="text" value="Kentucky"/>	Zip:(*) <input style="width: 95%;" type="text" value="41017"/>
eMail Address:(*) <input style="width: 95%;" type="text" value="Bob.Yeager@ky.gov"/>	Business Phone:(*) <input style="width: 95%;" type="text" value="859-341-2700"/>	Alternate Phone: <input style="width: 95%;" type="text" value="Phone"/>	

SECTION II -- GENERAL SITE LOCATION INFORMATION

Project Name:(*) <input style="width: 95%;" type="text" value="KYTC Project CID: 204407"/>	Status of Owner/Operator(*) <input style="width: 95%;" type="text" value="State Government"/>	SIC Code(*) <input style="width: 95%;" type="text" value="1611 Highway and Street Const"/>
Company Name:(✓) <input style="width: 95%;" type="text" value="Company Name"/>	First Name:(✓) <input style="width: 95%;" type="text" value="First Name"/>	M.I.: <input style="width: 95%;" type="text" value="MI"/>
Last Name:(✓) <input style="width: 95%;" type="text" value="Last Name"/>		
Site Physical Address:(*) <input style="width: 95%;" type="text" value="KY-17"/>		
City:(*) <input style="width: 95%;" type="text" value="Independence"/>	State:(*) <input style="width: 95%;" type="text" value="Kentucky"/>	Zip:(*) <input style="width: 95%;" type="text" value="41051"/>
County:(*) <input style="width: 95%;" type="text" value="Kenton"/>	Latitude(decimal degrees)(*)DMS to DD Converter (https://www.fcc.gov/media/radio/dms-decimal) <input style="width: 95%;" type="text" value="38.866078"/>	Longitude(decimal degrees)(*) <input style="width: 95%;" type="text" value="-84.539319"/>

SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION

Project Description:(*)

a. For single projects provide the following information

Total Number of Acres in Project:(√) <input type="text" value="3.6"/>	Total Number of Acres Disturbed:(√) <input type="text" value="2.3"/>
Anticipated Start Date:(√) <input type="text"/>	Anticipated Completion Date:(√) <input type="text"/>

b. For common plans of development provide the following information

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

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

+	Company Name

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

Discharge Point(s):

	Unnamed Tributary?	Latitude	Longitude	Receiving Water Name	
1	Yes	38.837421	-84.534842	Cruises Creek	Delete
2	Yes	38.843561	-84.532764	Cruises Creek	Delete
3	Yes	38.886158	-84.535495	Bowman Creek	Delete
4	Yes	38.886366	-84.535525	Bowman Creek	Delete
+					

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

Name of MS4: <input type="text"/>																
Date of application/notification to the MS4 for construction site permit coverage: <input type="text" value="Date"/>	Discharge Point(s):(*) <table border="1" style="width:100%"> <thead> <tr> <th style="width:5%">+</th> <th style="width:20%">Latitude</th> <th style="width:20%">Longitude</th> <th> </th> <th> </th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	+	Latitude	Longitude												
+	Latitude	Longitude														

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

Will the project require construction activities in a water body or the riparian zone?: (*)	<input type="text" value="No"/>
If Yes, describe scope of activity: (√)	<input type="text" value="describe scope of activity"/>
Is a Clean Water Act 404 permit required?:(*)	<input type="text" value="Yes"/>

Is a Clean Water Act 401 Water Quality Certification required?:(*)	Yes ▾
--------------------------------------------------------------------	-------

SECTION VII -- NOI PREPARER INFORMATION				
First Name:(*) First Name	M.I.: MI	Last Name:(*) Last Name	Company Name:(*) Company Name	
Mailing Address:(*) Mailing Address	City:(*) City	State:(*) ▾	Zip:(*) Zip	
eMail Address:(*) eMail Address	Business Phone:(*) Phone		Alternate Phone: Phone	

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

SECTION IX -- CERTIFICATION			
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
Signature:(*) Signature		Title:(*) Title	
First Name:(*) First Name	M.I.: MI	Last Name:(*) Last Name	
eMail Address:(*) eMail Address	Business Phone:(*) Phone	Alternate Phone: Phone	Signature Date:(*) Date

<input type="button" value="Click to Save Values for Future Retrieval"/>	<input type="button" value="Click to Submit to EEC"/>
--------------------------------------------------------------------------	-------------------------------------------------------

KYTC BMP Plan for Project CID 20-4407



Kentucky Transportation Cabinet

Highway District 6

And

_____ **(2), Construction**

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

Groundwater protection plan

For Highway Construction Activities

For

**Highway Safety Improvement Project on KY 17 in
Kenton County**

Project: CID 20-4407

KYTC BMP Plan for Project CID 20-4407

Project information

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

1. Owner – Kentucky Transportation Cabinet, District 6
2. Resident Engineer: (2)
3. Contractor name: (2)
Address: (2)

Phone number: (2)
Contact: (2)
Contractors agent responsible for compliance with the KPDES permit requirements (3):
4. Project Control Number: (2)
5. Route (Address): KY 17
6. Latitude/Longitude (project mid-point): 38° 51' 57.9", -84° 32' 21.5"
7. County (project mid-point): Kenton
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

KYTC BMP Plan for Project CID 20-4407

A. Site description:

1. Nature of Construction Activity (from letting project description): Grade and Drain with Asphalt Surface from 0.32 miles north of the intersection with KY 14 construct two hillside cut areas, and construct the realignment of KY 2042
2. Order of major soil disturbing activities: (2) and (3)
3. Projected volume of material to be moved: 9,622 CY (Cut) & 70 CY (Fill)
4. Estimate of total project area (acres): 3.6 acres
5. Estimate of area to be disturbed (acres): 2.3 acres
6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.
7. Data describing existing soil condition: (1) & (2)
8. Data describing existing discharge water quality (if any): (1) & (2)
9. Receiving water name: Cruises Creek and Bowman Creek
10. TMDLs and Pollutants of Concern in Receiving Waters: *No TDML's were involved on this project.*
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)

KYTC BMP Plan for Project CID 20-4407

B. Sediment and Erosion Control Measures:

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

Projects that do not have DDAs annotated on the erosion control sheets will employ the same concepts for development and managing BMP plans.

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as "Do Not Disturb" until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP's shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA's as the work progresses. All DDA's will have adequate BMP's in place before being disturbed.
3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:
 - Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
 - 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.

KYTC BMP Plan for Project CID 20-4407

- 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 pipes 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 and drop inlets 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. Probable changes include:
 - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.
 - Permanent Seeding and Protection

KYTC BMP Plan for Project CID 20-4407

- 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: *This project does not include storm water BMPs or flow controls for post-construction use.*

C. Other Control Measures

1. No solid materials, including building materials, shall be discharged to waters of the commonwealth, except as authorized by a Section 404 permit.
2. Waste Materials

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

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the Section Engineer if there any hazardous wastes being generated at the project site and how these wastes are being managed. Site personnel will be instructed with regard to proper storage and handling of hazardous wastes when required. The Transportation Cabinet will file for generator, registration when appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

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

- **Good Housekeeping:**

KYTC BMP Plan for Project CID 20-4407

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.

KYTC BMP Plan for Project CID 20-4407

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 contact with a hazardous substance.

KYTC BMP Plan for Project CID 20-4407

- 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) There are no other local (MS4) requirements that are expected to be necessary for this project.*

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. *There are no such BMP's for this project.*

F. Inspections

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

KYTC BMP Plan for Project CID 20-4407

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have successfully completed the KEPSC-RI course as required by Section 213.02.02 of the Standard Specifications for Road and Bridge Construction, current edition.
- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

G. Non – Storm Water discharges

It is expected that non-storm water discharges may occur from the site during the construction period. Examples of non-storm water discharges include:

- Water from water line flushings.
- Water from cleaning concrete trucks and equipment.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).

KYTC BMP Plan for Project CID 20-4407

- 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

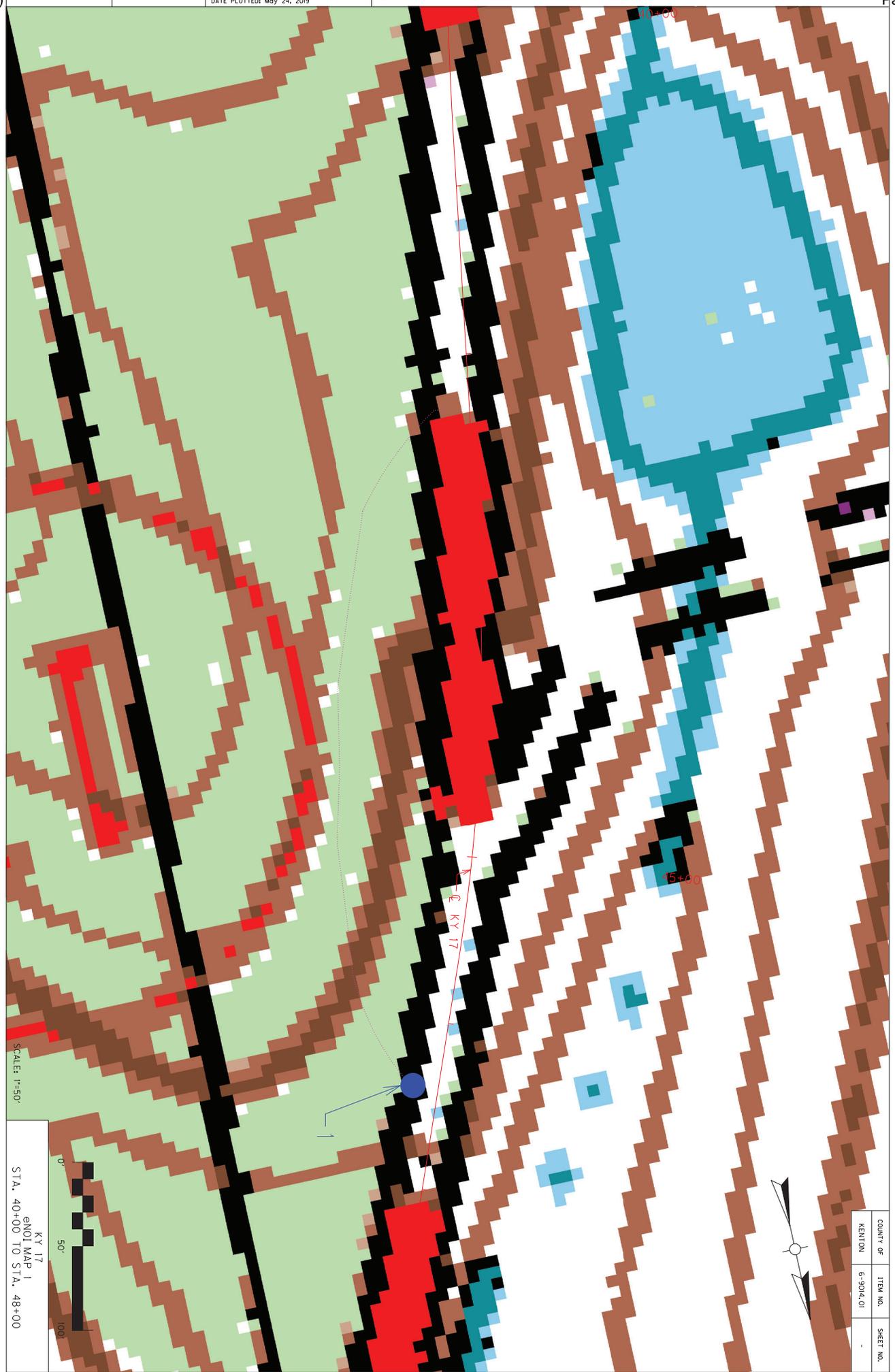
_____ There are no activities for this project as listed in 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan.

KYTC BMP Plan for Project CID 20-4407

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.)



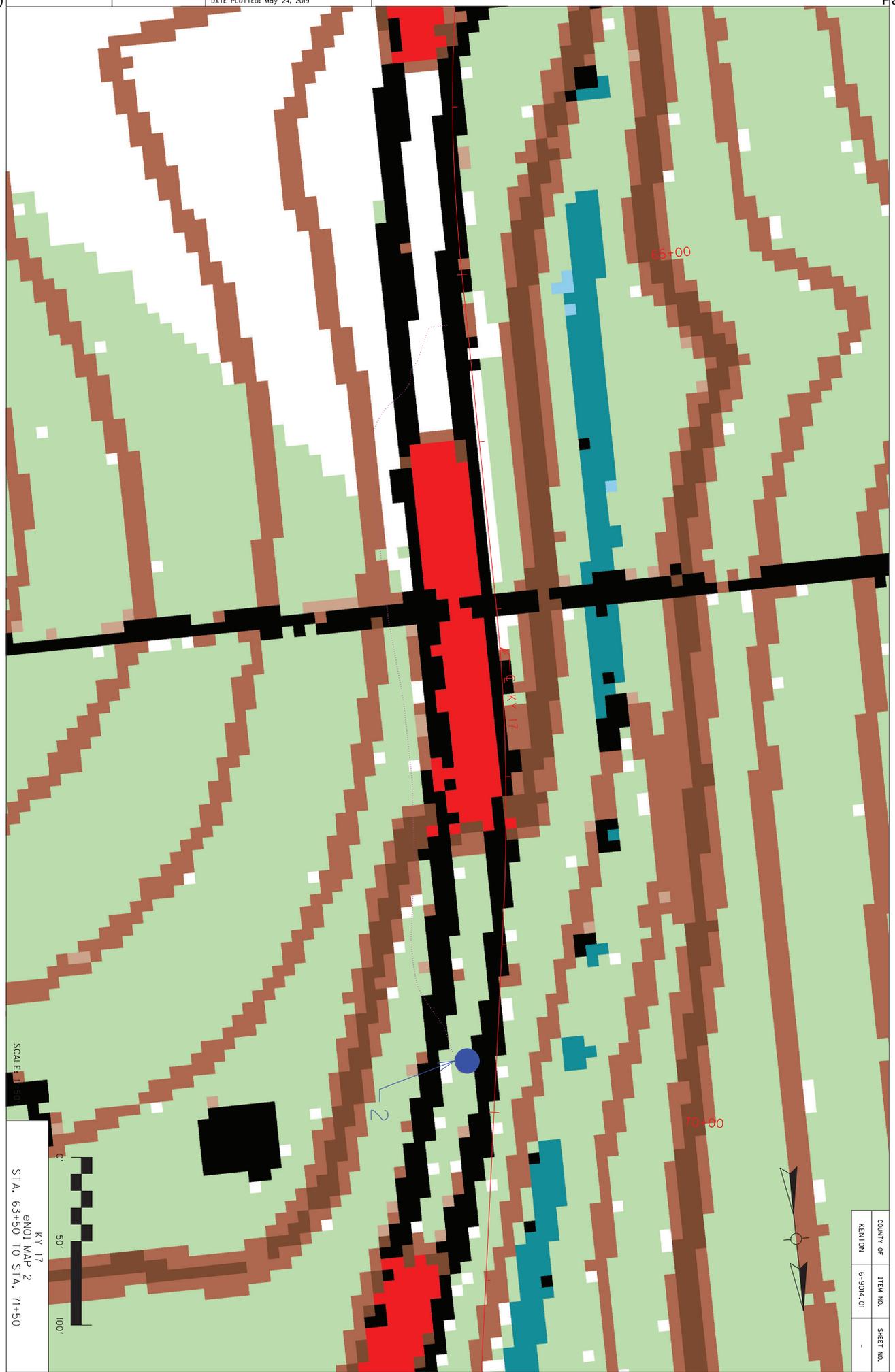
SCALE: 1"=50'

KY 17
EN01 MAP 1
STA. 40+00 TO STA. 48+00



COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-9016.01	-

MicroStation v8.11.9.742 E-SHEET NAME: USER: AWESTCOT DATE PLOTTED: May 24, 2019 FILE NAME: C:\PWORKING\EA\STO\1010613\ENOI-KY 17 PLAN B.DGN



SCALE 1"=50'
0'
50'
100'

KY 17
ENOI MAP 2
STA. 63+50 TO STA. 71+50

COUNT OF	ITEM NO.	SHEET NO.
KENTON	6-9014.01	-

MicroStation v8.11.9.742 E-SHEET NAME: USER: AWESTCOT DATE PLOTTED: May 24, 2019 FILE NAME: C:\PWORKING\EA\ST01\010613\EN01-KY 2042 PLAN.DGN



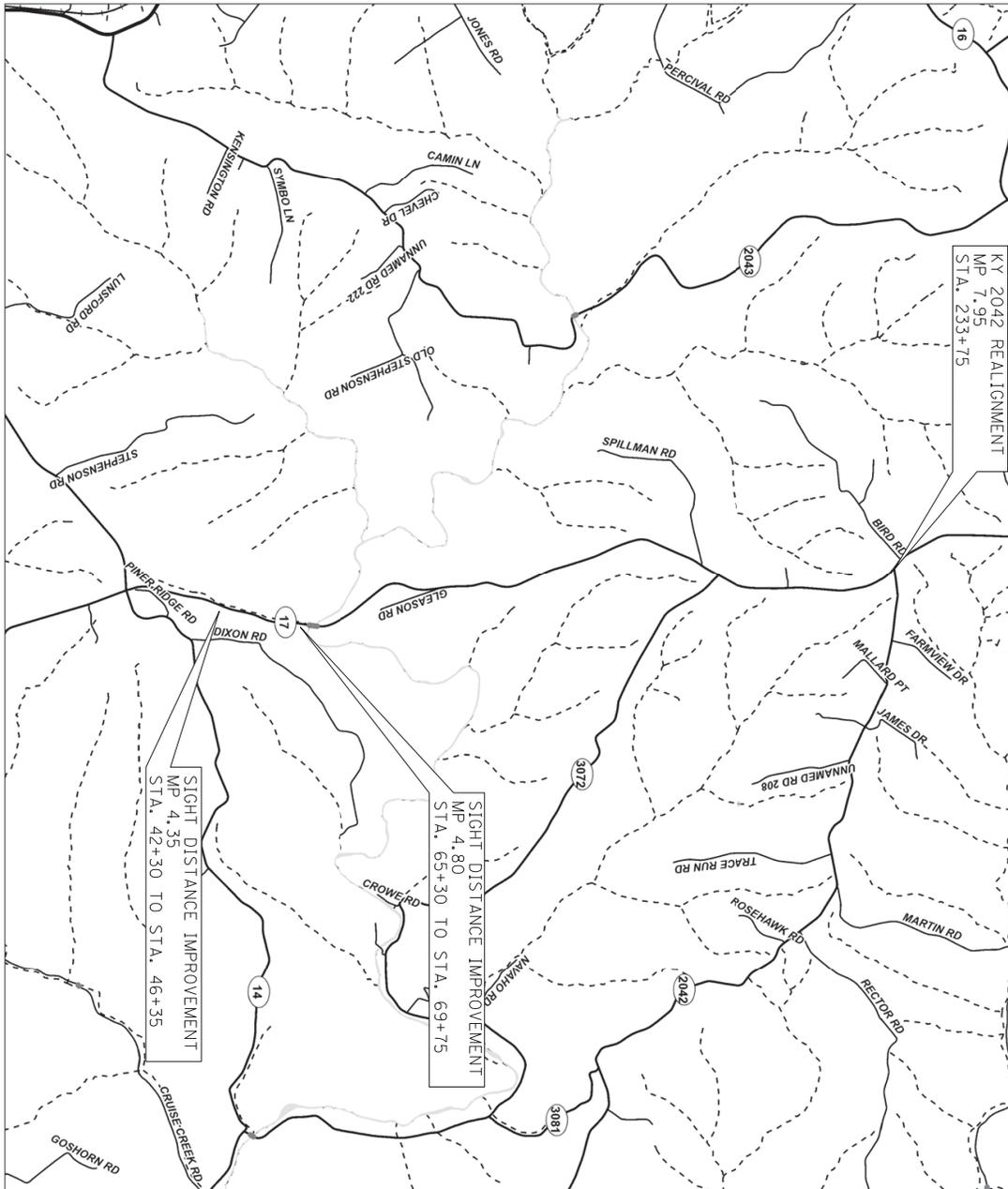
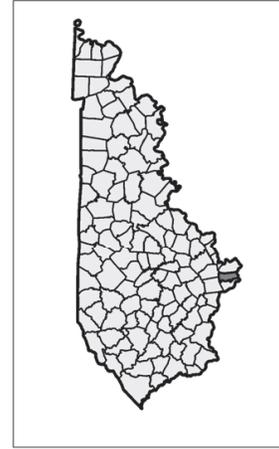
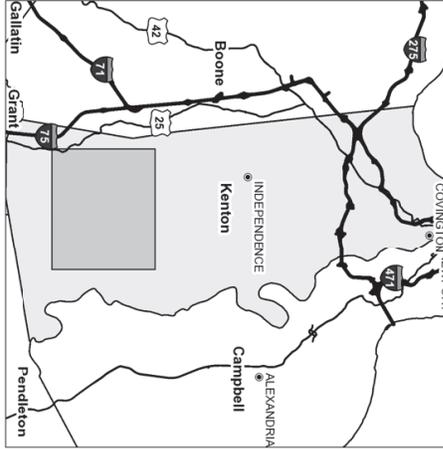
SCALE: 1"=50'

KY 2042
EN01 MAP 3
STA. 100+00 TO STA. 104+89



COUNT OF	ITEM NO.	SHEET NO.
KENTON	6-90/4.01	-

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
 PLANS OF
PROPOSED PROJECT
KY 17 - KENTON COUNTY



COUNTY OF	ITEM NO.
KENTON	6-3014.01



Highway Safety Improvement Program

Item No: 6-9014.01
County: Kenton
Route: KY 17

GENERAL SUMMARY

Item No.	Item	Unit	Quantity
001	Dense Graded Aggregate	TON	1,150
003	Crushed Stone Base	TON	440
100	Asphalt Seal Aggregate	TON	16
103	Asphalt Seal Coat	TON	3
221	CL2 Asphalt Base 0.75D PG64-22	TON	538
301	CL2 Asphalt Surface 0.38D PG64-22	TON	116
356	Asphalt Material for Tack	TON	1
2676	Mobilization for Mill and Text	LS	1
2677	Asphalt Pave Milling and Texturing	TON	13
2014	Barricade - Type III	EA	4
2091	Remove Pavement	SY	775
2159	Temp Ditch	LF	630
2200	Roadway Excavation	CY	9,622
2230	Embankment-In-Place	CY	70
2429	Right of Way Monument Type 1	EA	13
2460	Remove Trees or Stumps	EA	6
2483	Channel Lining Class II	TON	563
2650	Maintain and Control Traffic	LS	1
2671	Portable Changeable Message Signs	EA	4
2696	Shoulder Rumble Strips	LF	895
2701	Temp Silt Fence	LF	630
2704	Silt Trap B	EA	4
2707	Clean Silt Trap B	EA	4
2726	Staking	LS	1
5950	Erosion Control Blanket	SY	424
5953	Temp Seeding and Protection	SY	560
5963	Initial Fertilizer	TON	0.5
5964	20-10-10 Fertilizer	TON	0.7
5985	Seeding and Protection	SY	11,100
5989	Special Seeding Crown Vetch	SY	5,185
5992	Agricultural Limestone	TON	6.9
6406	SBM Alum Sheet Signs .080 IN	SF	84.3
6410	Steel Post Type 1	LF	168
6514	Pavement Striping - Permanent Paint 4"	LF	930
6568	Pave Marking Thermo Stop Bar 24 IN	LF	16
20418ED	Remove and Relocate Signs	EA	1
20430ED	Saw Cut	LF	81
21373ND	Remove Signs	EA	6
24631EC	Barcode Sign Inventory	EA	26
440	Entrance Pipe - 15 IN	LF	56
462	Culvert Pipe - 18 IN	LF	59
24575ES610	Headwall (Sloped and Mitered Concrete - 18 IN)	EA	2



Highway Safety Improvement Program

Item No: 6-9014.01
 County: Kenton
 Route: KY 17

GENERAL SUMMARY

Item No.	Item	Unit	Quantity
2690	Safeloading	CY	6
14020	W Fire Hydrant Relocate	EA	1
14030	W Meter Relocate	EA	1
14037	W Pipe Ductile Iron 08 Inch (Class 50)	LF	450
14074	W Plug Existing Main	EA	1
14090	W Tapping Sleeve and Valve Size 2	EA	1
14095	W Tie-In 8 Inch	EA	1
14106	W Valve 8 Inch	EA	1
14112	W Valve Anchor Existing	EA	1
14144	W Line Marker	EA	1
14145	W Serv Copper Long Side - 1 Inch	EA	1
2569	Demobilization	LS	1



Highway Safety Improvement Program

Item No: 6-9014.01
County: Kenton
Route: KY 17

Signing

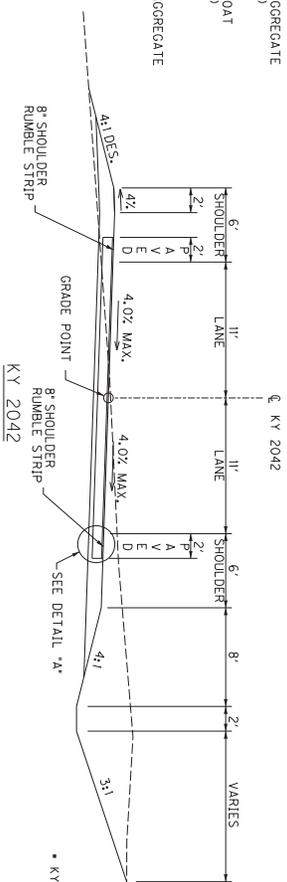
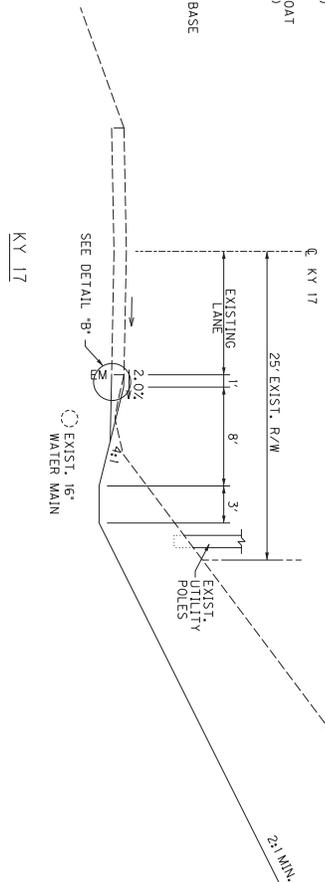
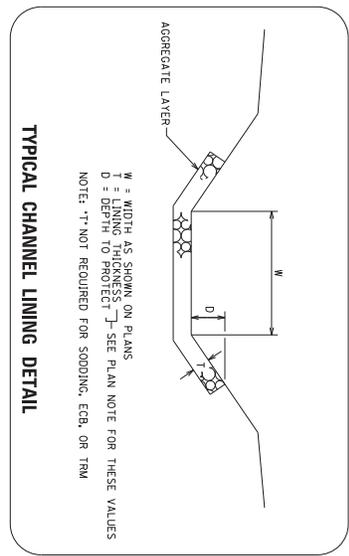
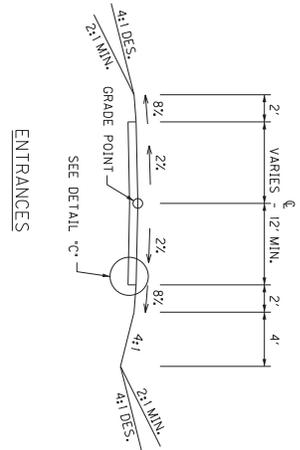
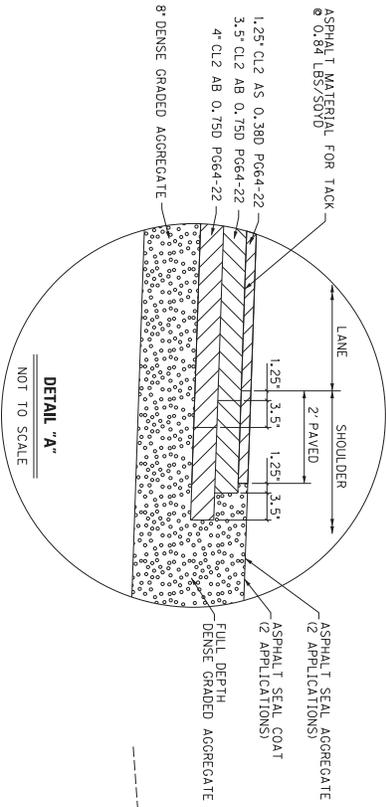
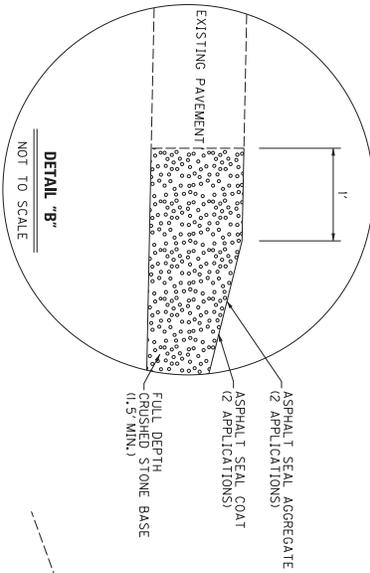
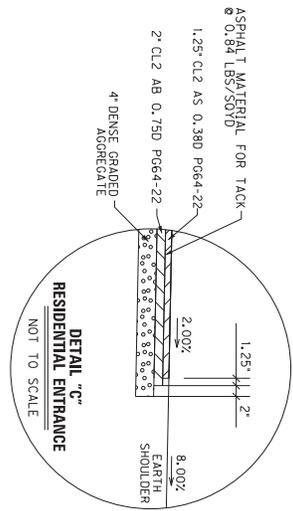
Item No				6406	6410	24631EC		
Dir.	Station	SIGN CODE	TEXT / DESCRIPTION	SIZE-INCHES		SBM Alum Sheet Signs .080 IN (S.F.)	Steel Post TY 1 (LF)	Barcode Sign Inv. (EA)
				W	H			
KY 2042								
WB	100+25	R1-1	STOP	30	30	5.2	14	1
EB	101+70	W1-2R		30	30	6.25	15	1
EB	101+70	W13-1P	35 MPH	18	18	2.25		1
EB	102+85	M3-2	EAST	24	12	2	14	1
EB	102+85	M1-5	2042	30	24	5		1
WB	103+80	M2-1	JCT	21	15	2.2	15	1
WB	103+80	M1-5	17	24	24	4		1
WB	107+08	W3-1A	STOP AHEAD	30	30	6.25	14	1
KY 17								
NB	233+40	M3-2	NORTH	24	12	2	16	1
NB	233+40	M1-5	17	24	24	4		1
NB	233+40	M6-3		21	15	2.2		1
NB	233+40	M3-2	EAST	24	12	2	16	1
NB	233+40	M1-5	2042	30	24	5		1
NB	233+40	M6-1		21	15	2.2		1
WB	233+70	M3-2	SOUTH	24	12	2	16	1
WB	233+70	M1-5	17	24	24	4		1
WB	233+70	M6-1		21	15	2.2		1
WB	233+75	M3-2	NORTH	24	12	2	16	1
WB	233+75	M1-5	17	24	24	4		1
WB	233+75	M6-1		21	15	2.2		1
SB	233+87	M3-2	EAST	24	12	2	16	1
SB	233+87	M1-5	2042	30	24	5		1
SB	233+87	M6-1		21	15	2.2		1
SB	233+87	M3-2	SOUTH	24	12	2	16	1
SB	233+87	M1-5	17	24	24	4		1
SB	233+87	M6-3		21	15	2.2		1
TOTAL						84.3	168	26

SHEETING SIGNS DETAIL SHEET

SIGN/SIGN ASSEMBLY NUMBER	SIZES IN INCHES HORIZ. VERT.	MESSAGES	SPECIFICATION	SIGN LOCATION			COUNT OF KENTON	ITEM NO. 6-9014.01	SHEET NO. 8
				SIDE OF ROAD	FACING TRAFFIC TRAVELING	ON ROAD			
S-1	30	 R1-1	R1-1	LT	WB	KY 2042	100+25		
	18		W1-2R	RT	EB	KY 2042	101+70		
	18		W3-1P	RT	EB	KY 2042	101+70		
S-2	24	 W1-2R							
	12		W3-1P	RT	EB	KY 2042	102+85		
	30		M3-2	RT	EB	KY 2042	102+85		
S-3	24	 M3-2							
	24		M1-5	RT	EB	KY 2042	102+85		
	15		M2-1	LT	WB	KY 2042	103+80		
S-4	24	 M2-1							
	24		M1-5	LT	WB	KY 2042	103+80		
	30		W3-1A	LT	WB	KY 2042	107+08		
S-5	24	 W3-1A							
	24		M3-2	RT	NB	KY 17	233+40		
	24		M1-5	RT	NB	KY 17	233+40		
S-6	21	 M1-5							
	15		M6-3	RT	NB	KY 17	233+40		
	24		M3-2	RT	NB	KY 17	233+40		
S-7	24	 M3-2							
	24		M1-5	RT	NB	KY 17	233+40		
	15		M6-1	RT	NB	KY 17	233+40		
S-8	24	 M3-2							
	24		M1-5	LT	WB	KY 17	233+75		
	15		M6-1	LT	WB	KY 17	233+75		
S-9	24	 M3-2							
	24		M1-5	LT	WB	KY 17	233+75		
	15		M6-1	LT	WB	KY 17	233+75		
S-10	24	 M3-2							
	30		M1-5	LT	SB	KY 17	233+87		
	21		M6-1	LT	SB	KY 17	233+87		
S-11	24	 M3-2							
	24		M1-5	LT	SB	KY 17	233+87		
	15		M6-3	LT	SB	KY 17	233+87		

KY 17 & KY 2042
SIGNING SUMMARY

TYPICAL SECTIONS

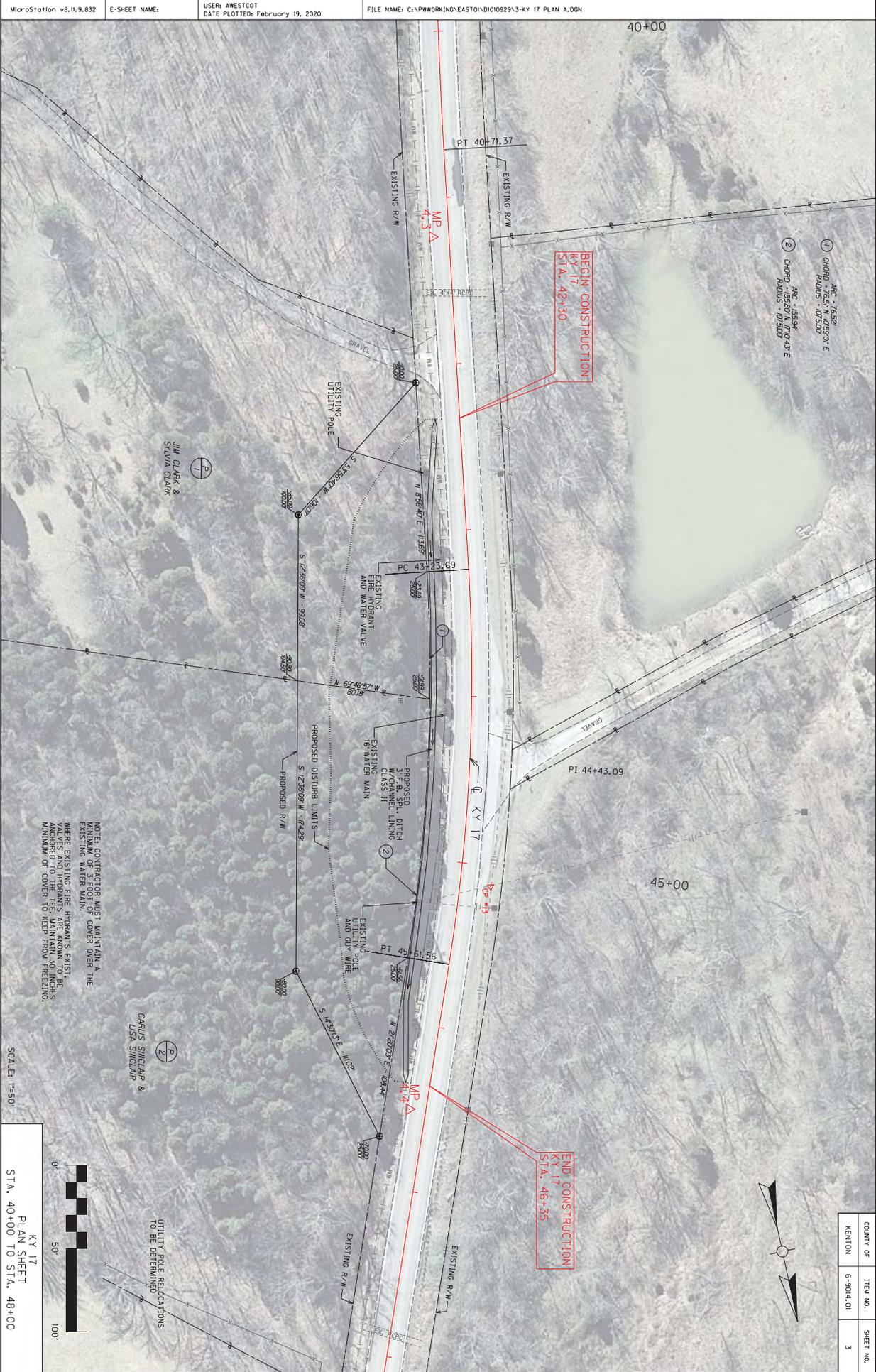


NTS

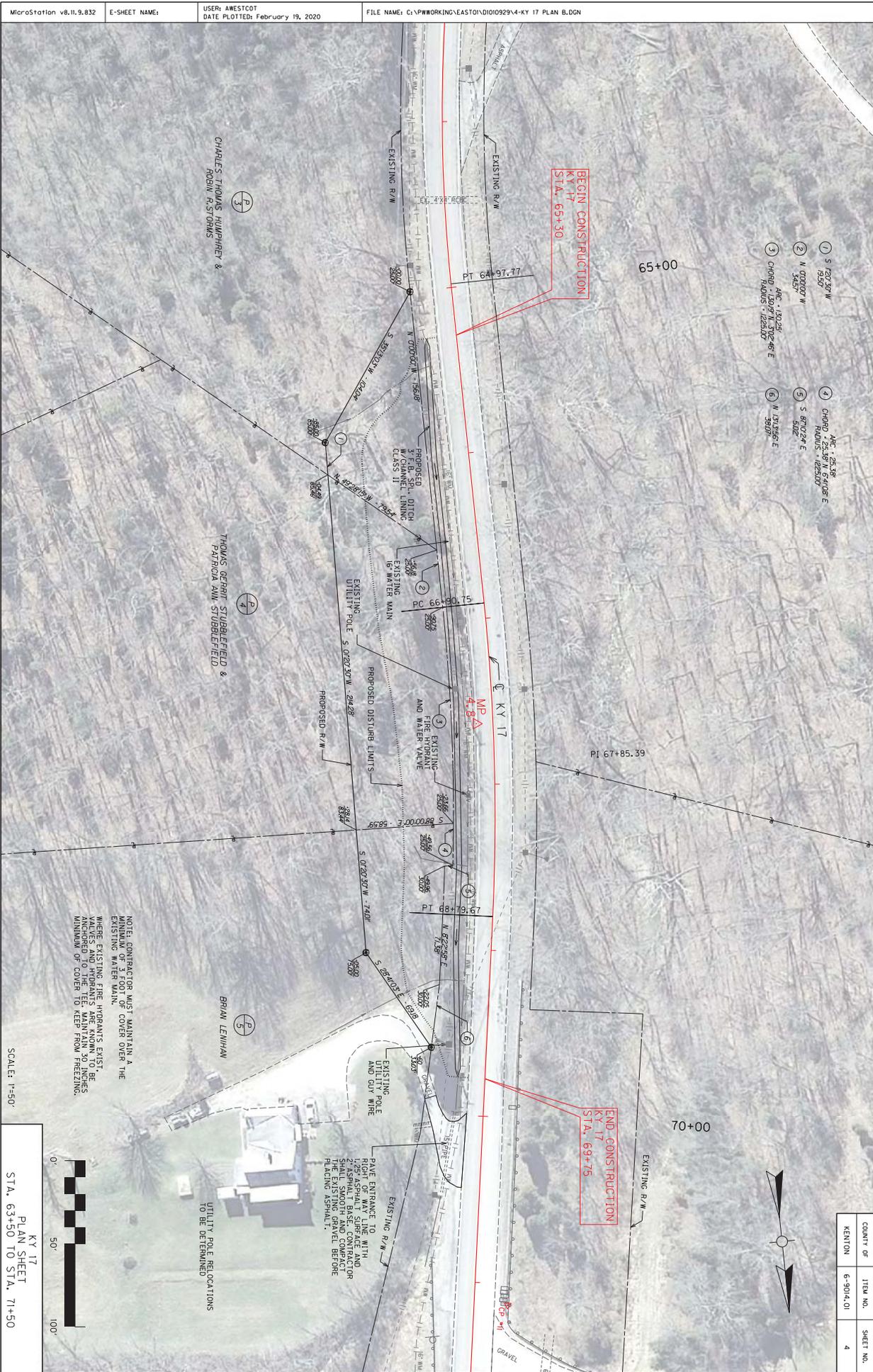
KY 17 / KY 2042
TYPICAL SECTION SHEET

* KY 2042, RURAL MINOR COLLECTOR
1,700 ADT

COUNT OF	ITEM NO.	SHEET NO.
KENTON	6-9014.01	2



COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-904.01	3

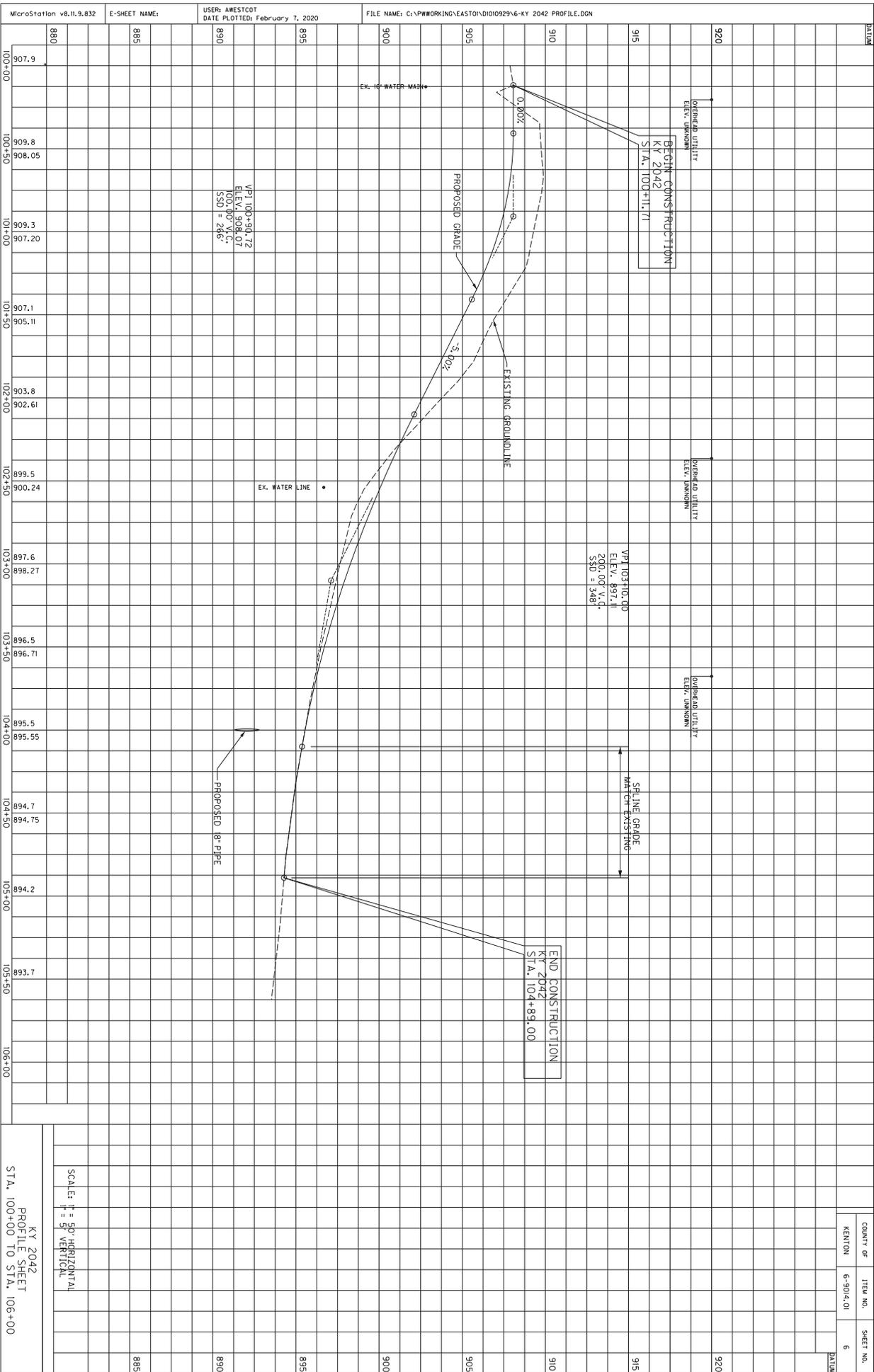


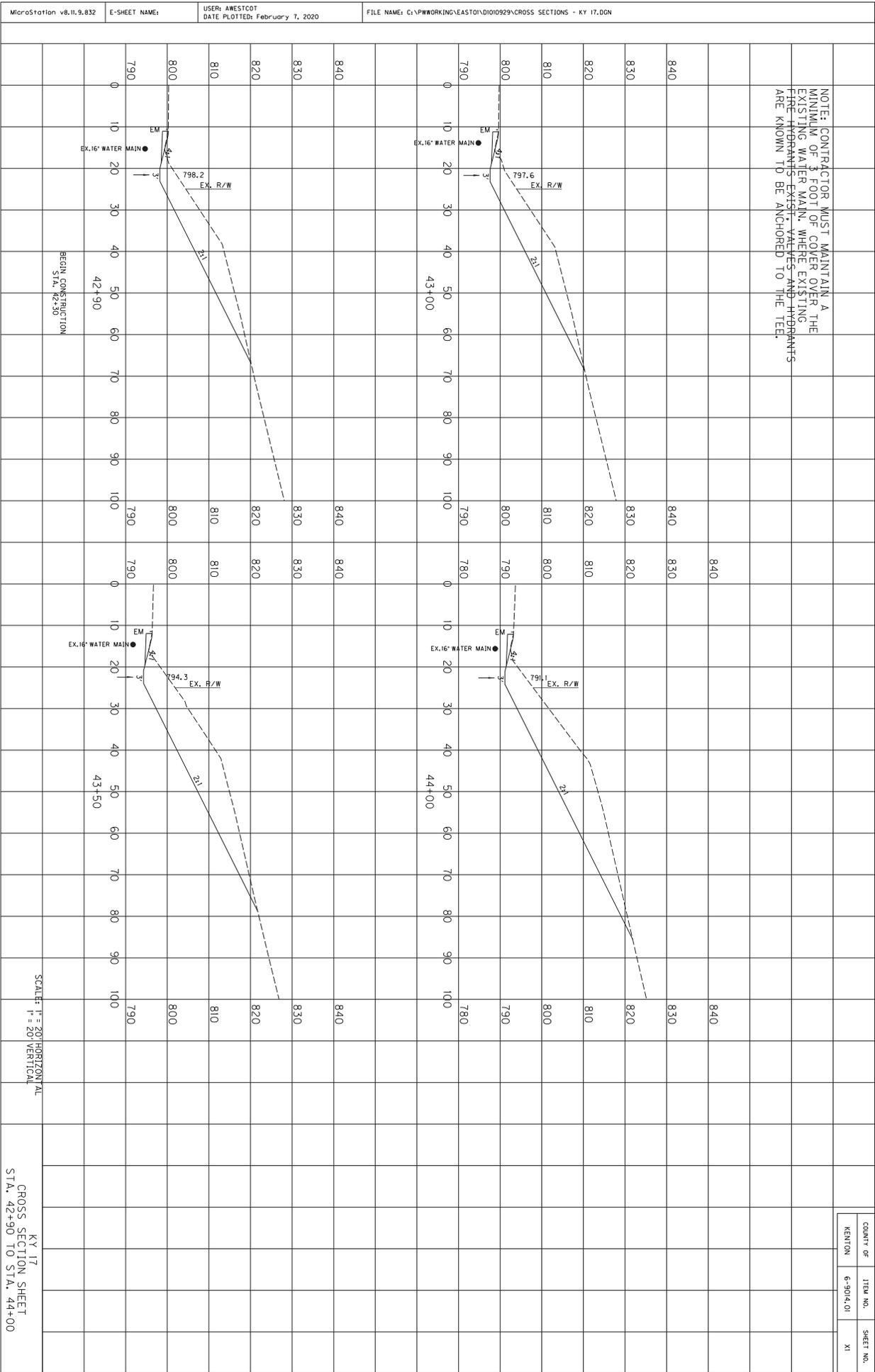
MicroStation v8.11.9.832

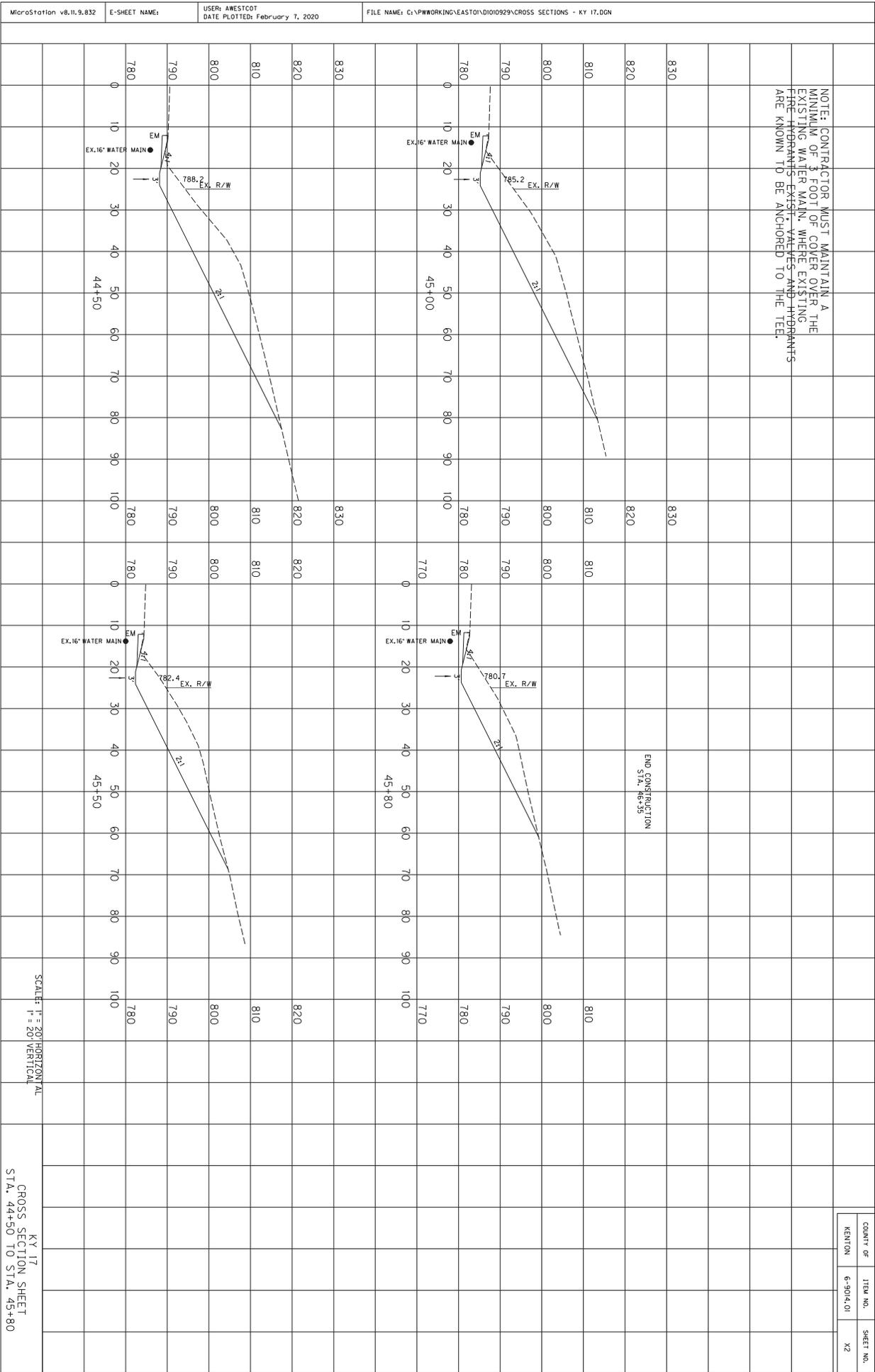
E-SHEET NAME:

USER: ANESTCOT
DATE PLOTTED: February 19, 2020

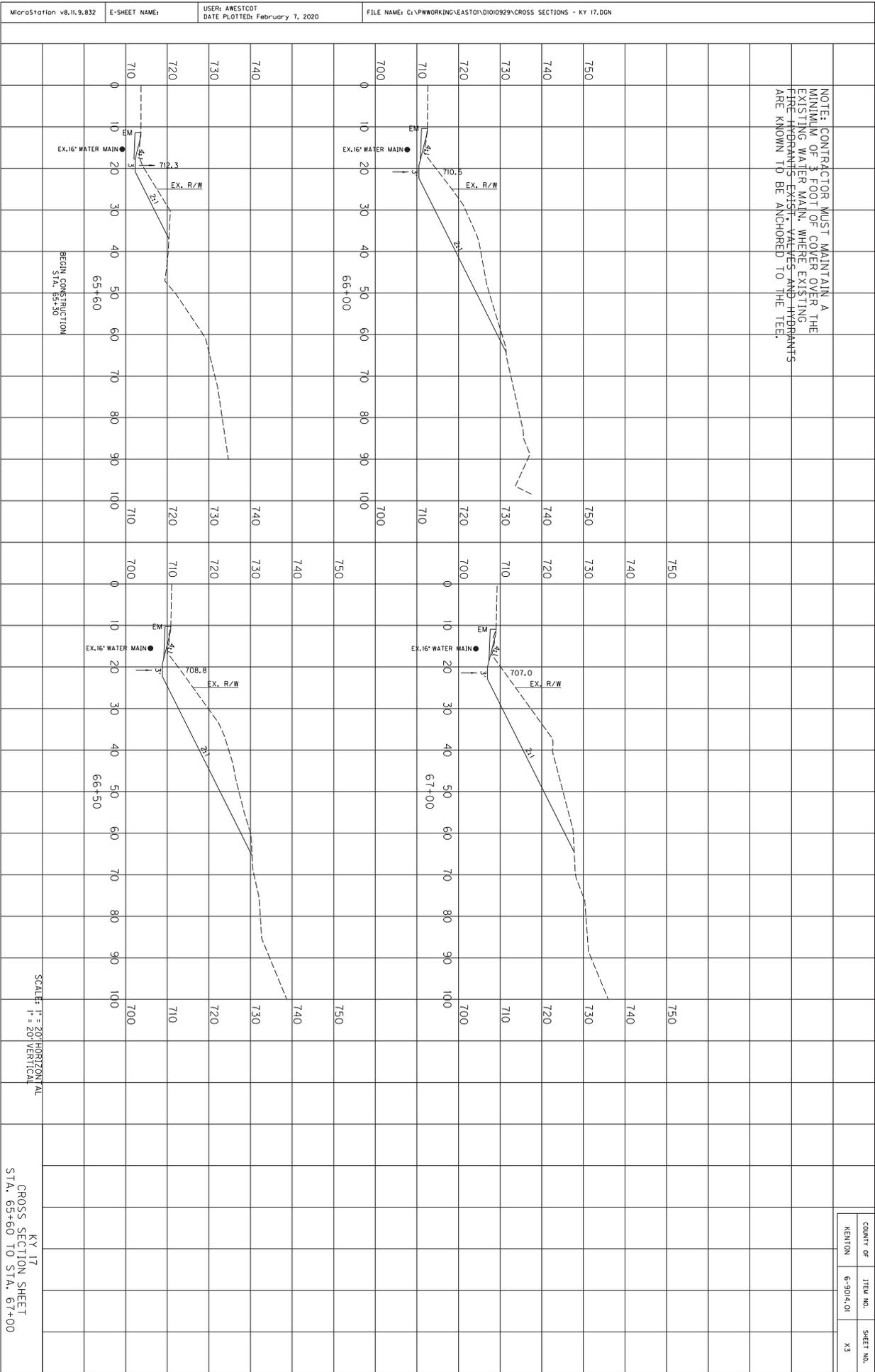
FILE NAME: C:\PWORKING\EASTON\DI010929\4-KY 17 PLAN B.DGN



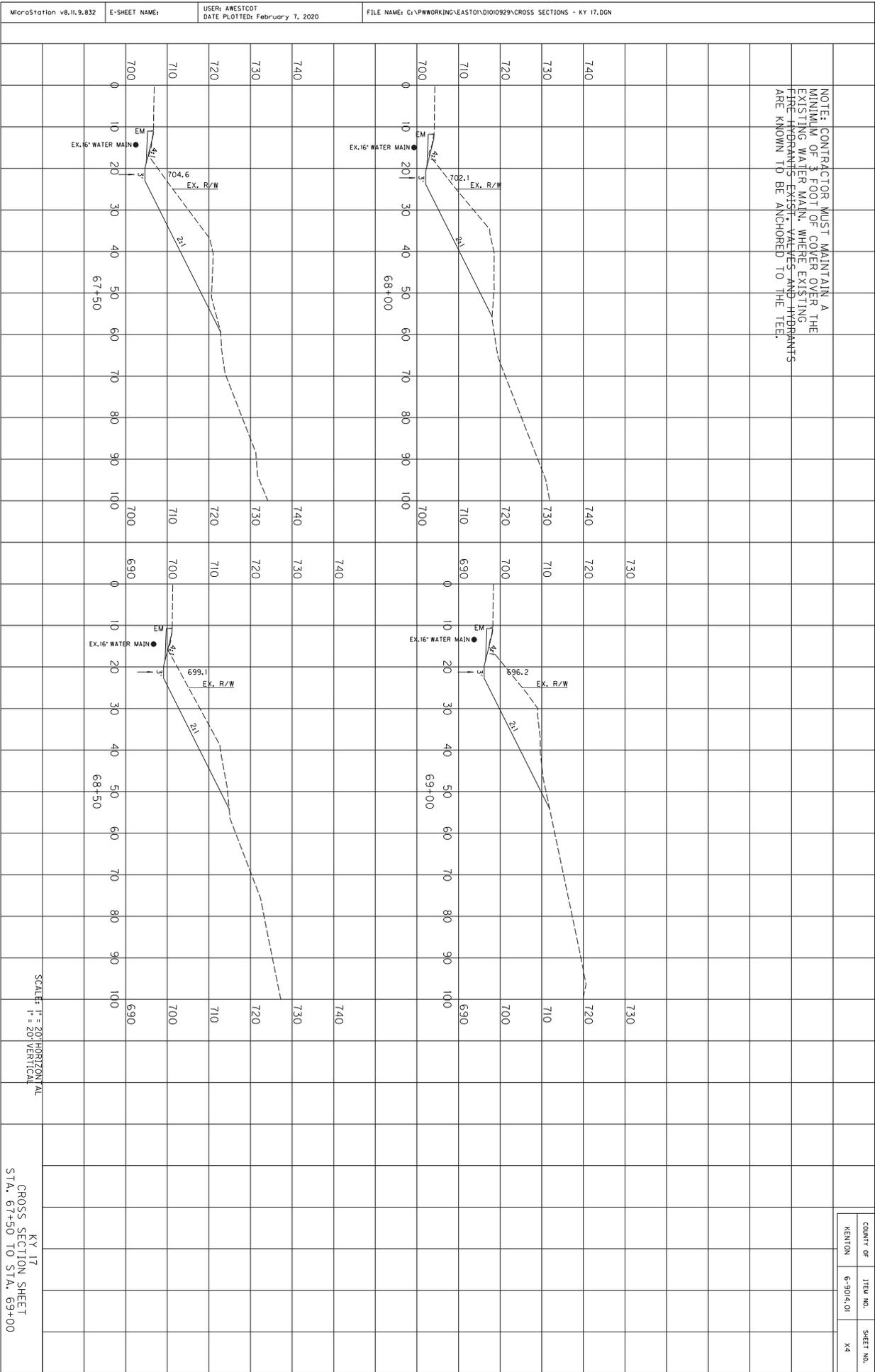




COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-504.01	X2



COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-5004.01	X3

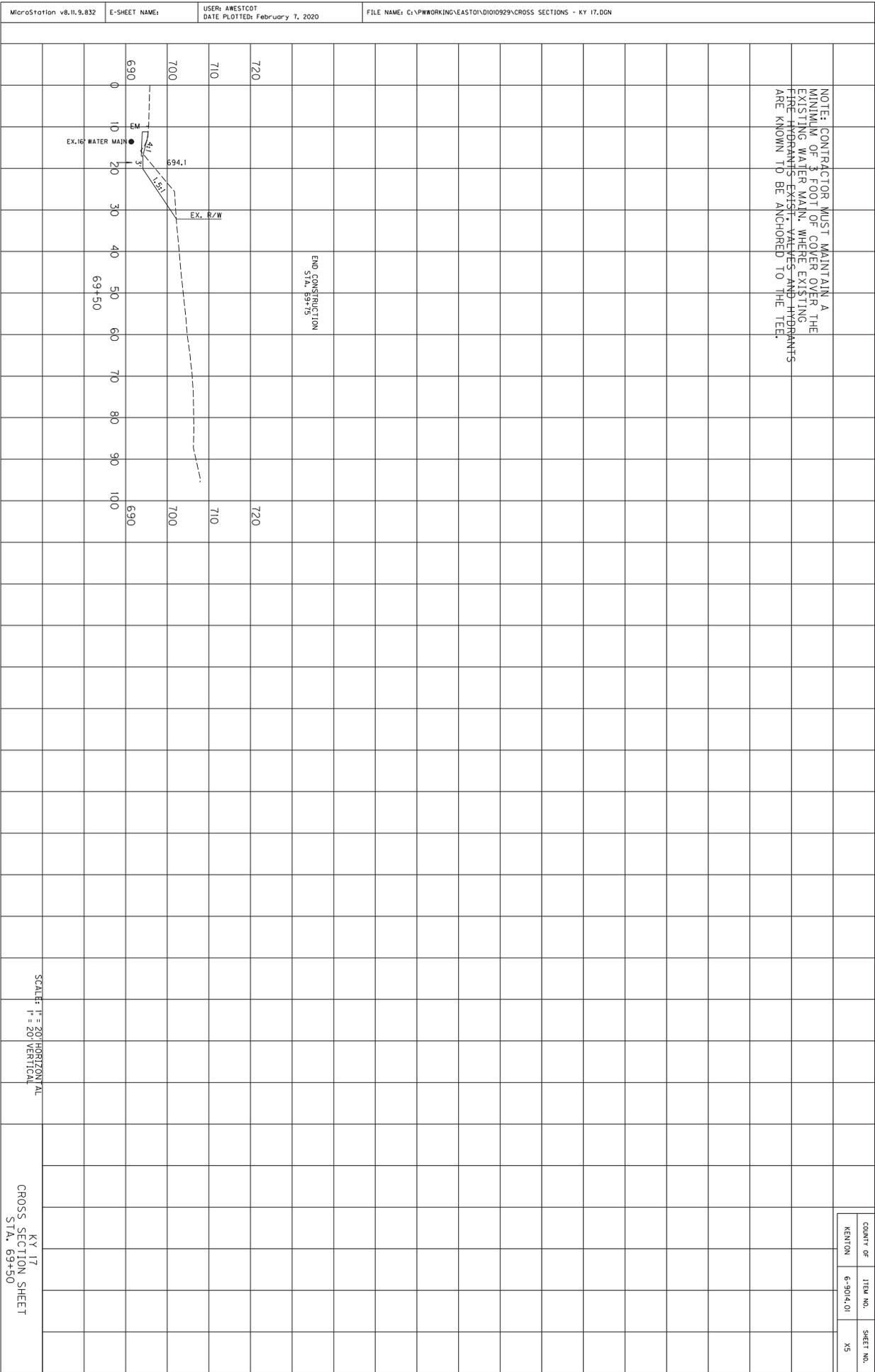


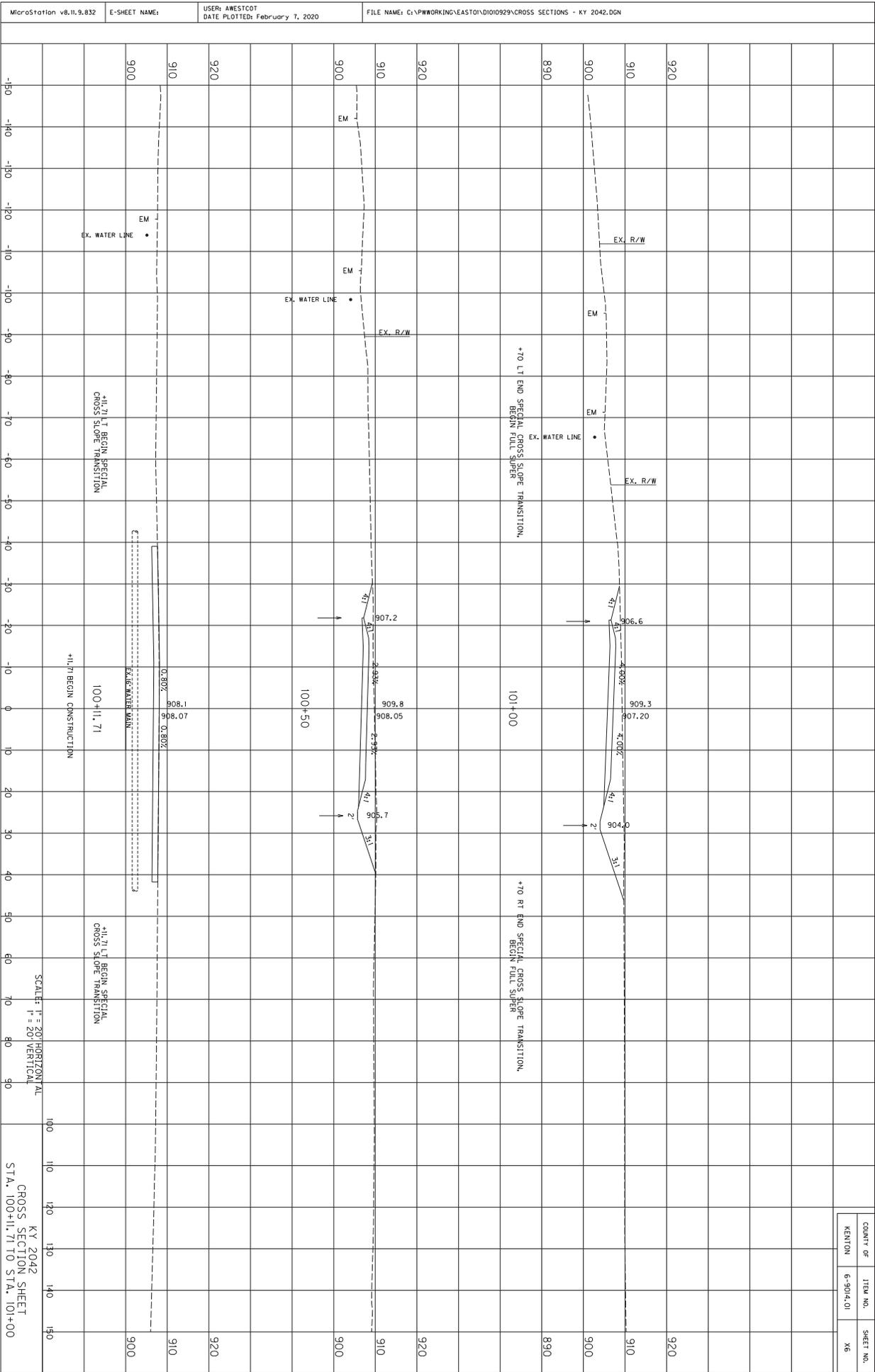
NOTE: CONTRACTOR MUST MAINTAIN A MINIMUM OF 3 FOOT OF COVER OVER THE EXISTING WATER MAIN. WHERE EXISTING FIRE HYDRANTS EXIST, VALVES AND HYDRANTS ARE KNOWN TO BE ANCHORED TO THE TEE.

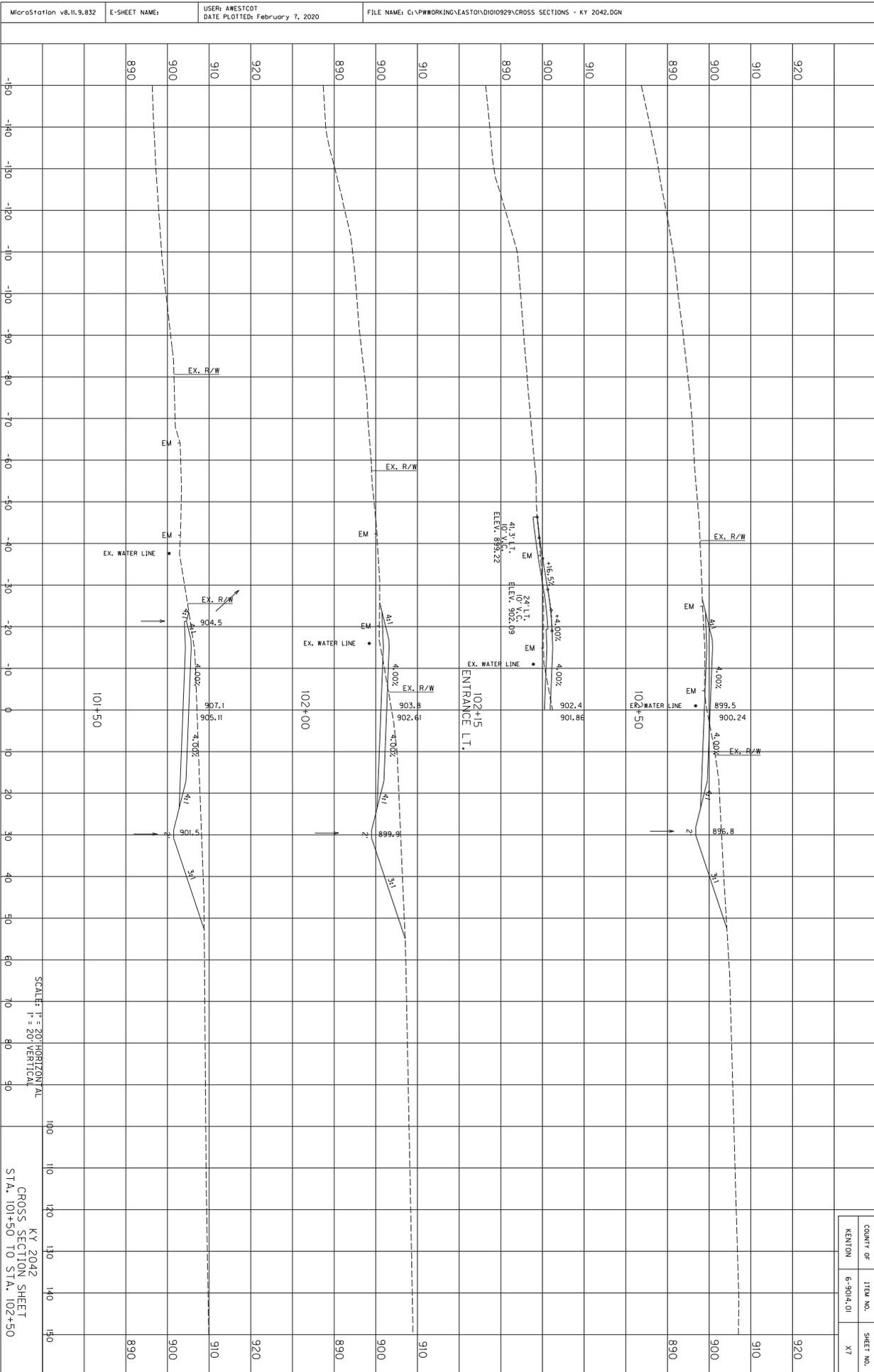
SCALE: H = 20' HORIZONTAL
V = 20' VERTICAL

KY 17
CROSS SECTION SHEET
STA. 67+50 TO STA. 69+00

COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-5004.01	X4



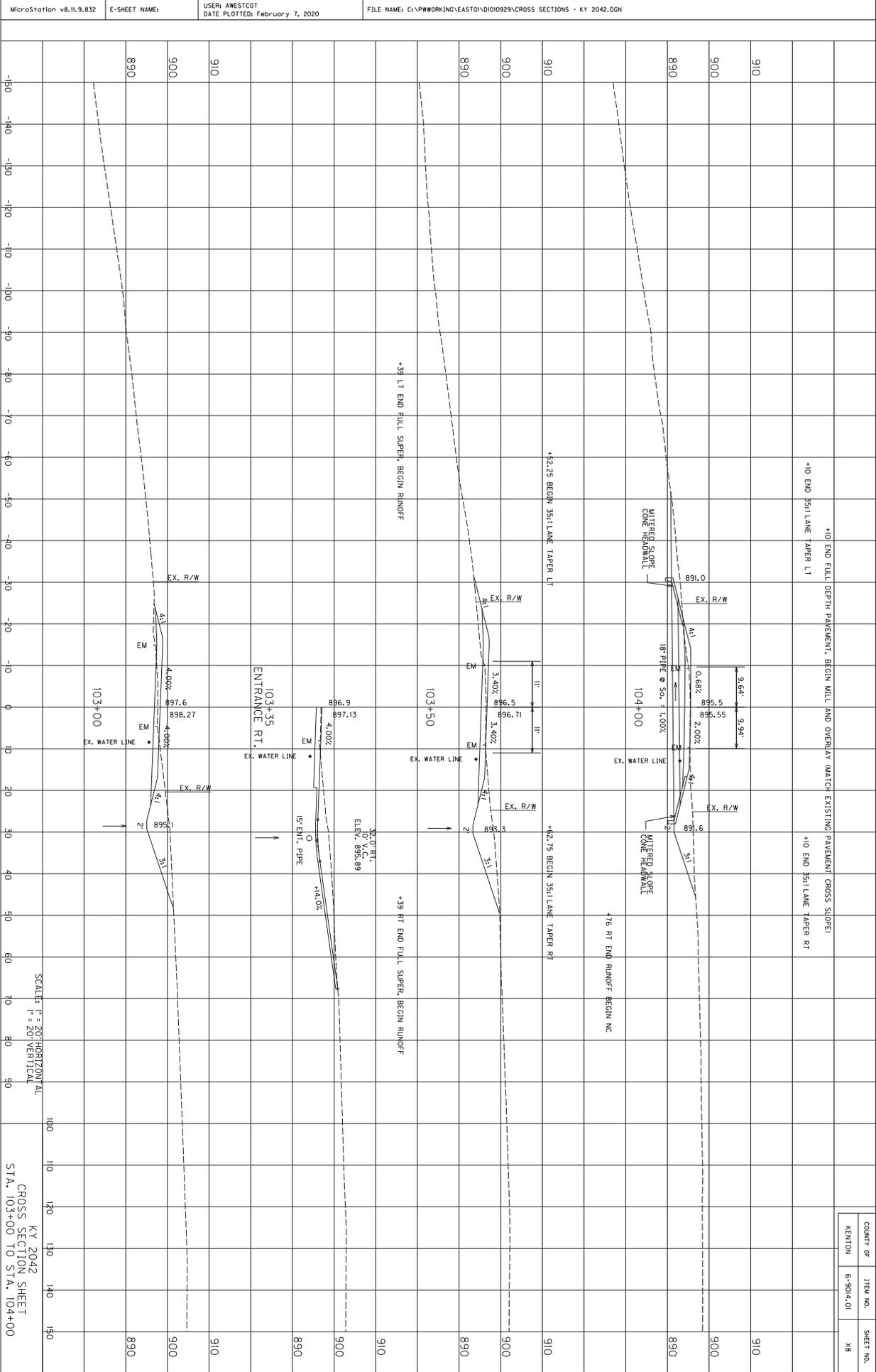




COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-904.01	X7

KY 2042
CROSS SECTION SHEET
STA. 101+50 TO STA. 102+50

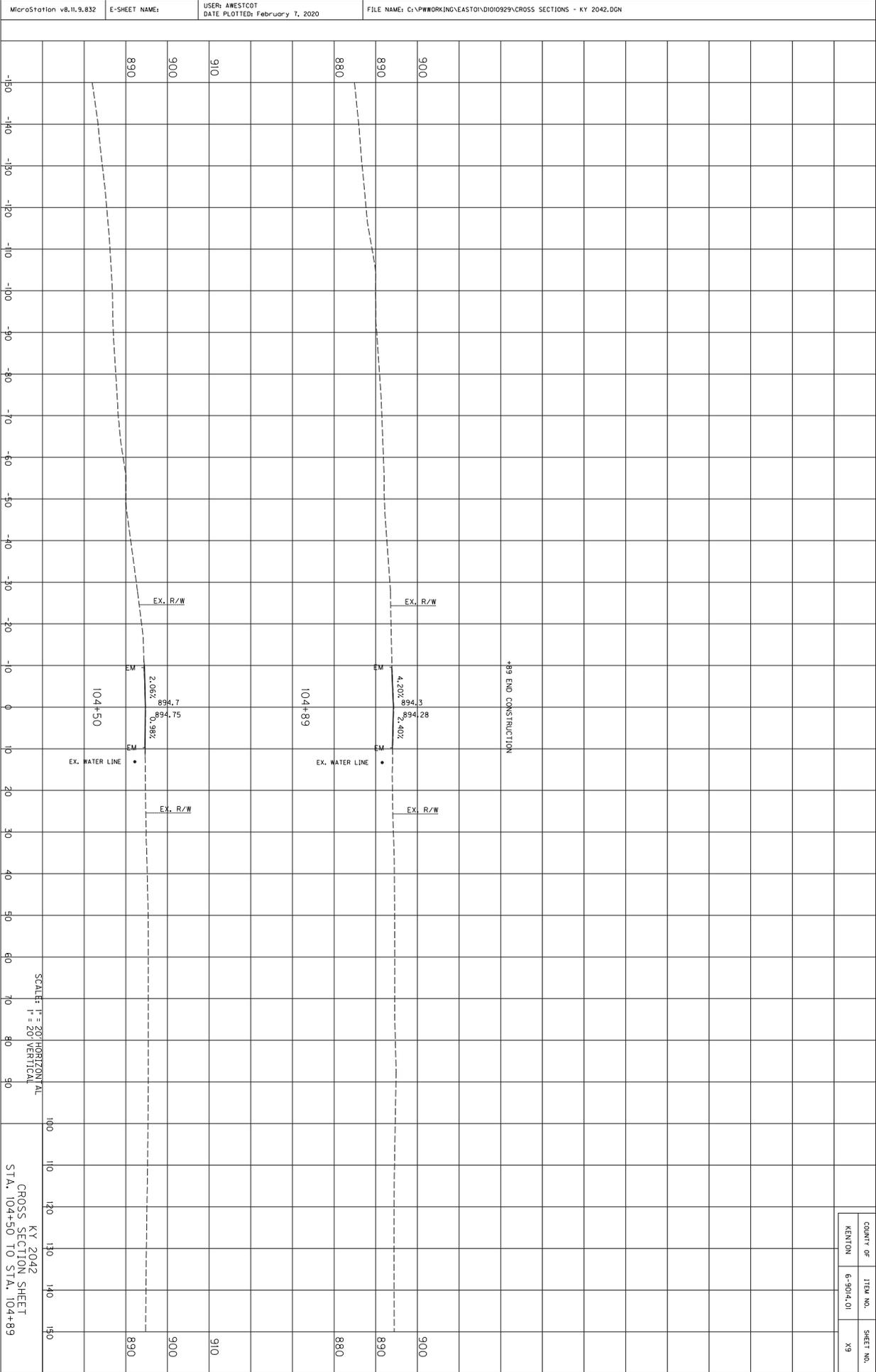
MicroStation v8.11.9.832 E-SHEET NAME: USER: ANESTCOT DATE PLOTTED: February 7, 2020 FILE NAME: C:\PWORKING\EASTON\DI010929\CROSS SECTIONS - KY 2042.DGN



SCALE: H = 20' HORIZONTAL
V = 20' VERTICAL

KY 2042
CROSS SECTION SHEET
STA. 103+00 TO STA. 104+00

COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-904.01	X8



MicroStation v8.11.9.832 E-SHEET NAME: USER: NKWD DATE PLOTTED: June 1, 2019 FILE NAME: C:\P\WORKING\EA5T01\DI00942\BORDER.DWG

KY 2042 WATER MAIN RELOCATION

GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-5014.01	UI

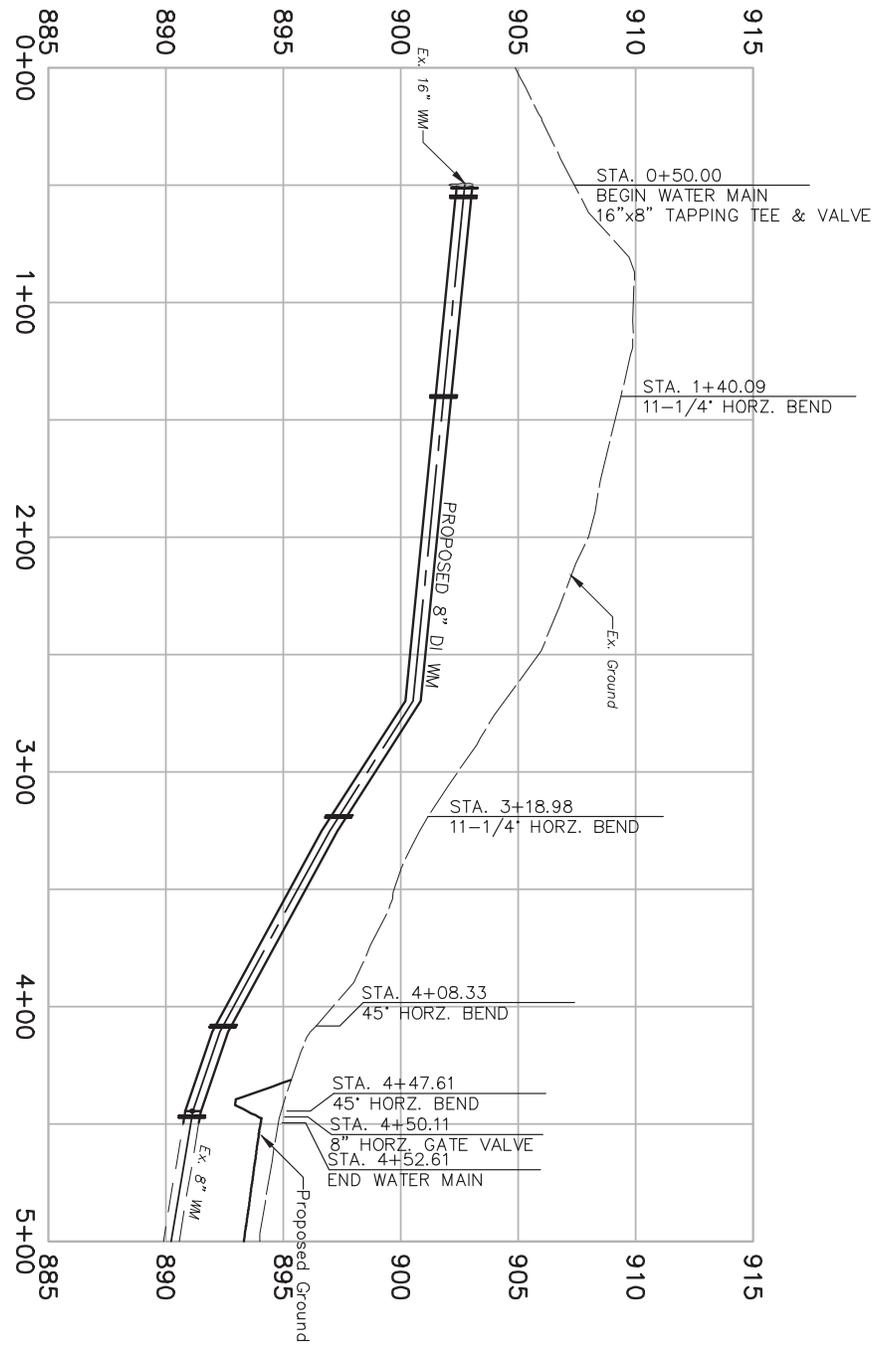
ITEM CODE	ITEM	UNIT	SHEET	TOTAL PROJECT	NOTES
2690	SAFELOADING	CY	6	6	
14020	W FIRE HYDRANT RELOCATE	EA	1	1	
14030	W METER RELOCATE	EA	1	1	
14037	W PIPE DUCTILE IRON 08 INCH (CLASS 50)	LF	450	450	
14074	W PLUG EXISTING MAIN	EA	1	1	
14090	W TAPPING SLEEVE AND VALVE SIZE 2	EA	1	1	
14095	W TE-IN 08 INCH	EA	1	1	
14106	W VALVE 08 INCH	EA	1	1	
14112	W VALVE ANCHOR EXISTING	EA	1	1	
14144	W LINE MARKER	EA	1	1	
14145	W SERV COPPER LONG SIDE - 1 INCH	EA	1	1	

GENERAL NOTES:

1. THE INSTALLATION OF WATER MAINS, SERVICES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH NORTHERN KENTUCKY WATER DISTRICTS' (NKWD) 2014 STANDARD SPECIFICATIONS & DRAWINGS.
2. FOR MATERIAL AND WATER MAIN INSTALLATION SPECIFICATIONS SEE NKWD STANDARD DRAWINGS #100-A THROUGH #100-G.
3. EXISTING UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS HEREON ARE BASED ON AVAILABLE INFORMATION AND ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY THE CONTRACTOR'S FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, THEY SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE THE CONTINUANCE OF SUCCESS.
4. PRIOR TO CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE DEPTH AND LOCATION OF CONNECTION POINTS TO THE EXISTING WATER MAIN, ADJUSTMENT OF PIPE ALIGNMENT AND PROFILE AND ADDITIONAL HORIZONTAL AND VERTICAL BENDS AND FITTINGS MAY BE REQUIRED TO ACCOMMODATE THE AINS.
5. ALL WORK AND SCHEDULED SHUT-DOWNS FOR TIES SHALL BE COORDINATED WITH AND APPROVED BY NKWD.
6. ALL BENDS OVER FIVE (5) DEGREES SHALL BE SECURELY BLOCKED AGAINST MOVEMENT WITH CONCRETE THRUST BLOCKS PLACED AGAINST UNDISTURBED EARTH IN ACCORDANCE WITH STANDARD DRAWINGS #104 AND #104A.
7. A SEPARATE BID ITEM HAS NOT BEEN ESTABLISHED FOR FITTINGS. THE FITTINGS INCLUDED BUT NOT LIMITED TO ARE: TEES, BENDS, PLUGS, REDUCERS, CROSSES, COUPLINGS, ETC. CONTRACTORS SHALL INCLUDE THE COST OF THESE ITEMS IN THE BID PRICE FOR THE PIPE.
8. ALL DUCTILE IRON PIPE, FITTINGS, VALVES AND FIRE HYDRANT LEADS SHALL BE POLYETHYLENE WRAPPED, INSTALLED IN ACCORDANCE WITH AMWA C105.
9. EXISTING FIRE HYDRANTS ON MAINS TO BE ABANDONED OR FIRE HYDRANTS TO BE REMOVED SHALL BE CLOSED, IF THE VALVE BOX IS IN A GRASSY AREA OR AREA THAT WILL BE DUG UP OR DISTURBED THE VALVE BOX SHALL BE REMOVED. IF THE VALVE BOX IS IN AN AREA THAT WILL NOT BE RESTORED, THE LD SHALL BE REMOVED AND THE VALVE BOX SHALL BE FILLED WITH CONCRETE. IF THE VALVE IS REMOVED, THE CONNECTION POINTS TO THE WATER MAIN SHALL BE PLUGGED.
11. ALL EXCAVATION IS UNCLASSIFIED. COMPENSATION FOR ALL EXCAVATION SHALL BE INCLUDED IN THE UNIT PRICE.
12. DISINFECTION AND PRESSURE TESTING OF NEWLY INSTAL WATER MAINS AND SERVICES SHALL BE PER ARTICLES 3.21 AND 3.22 ON NKWD STANDARD DRAWING #100-G. THE COST OF TESTING THE MAIN, TEMPORARY FLUSHING DEVICES, TEMPORARY PLUG AND BLOCKS AND ABANDONING THE EXISTING WATER MAIN SHALL BE INCIDENTAL TO THE PROJECT.
13. WHERE THE NEW WATER MAIN IS INSTALLED A DISTANCE FIVE (5) FEET OR LESS FROM THE EXISTING WATER MAIN, NO MORE THAN TWENTY (20) FEET OF WATER MAIN TRENCH SHALL BE EXCAVATED AND REMAIN OPEN NEXT TO THE EXISTING WATER MAIN. THE NEW WATER MAIN SHALL BE INSTALLED WITHIN TWENTY (20) FEET TRENCH AND BACKFILLED BEFORE PROCEEDING WITH FURTHER TRENCH EXCAVATION. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO STABILZE AND MAINTAIN THE EXISTING WATER MAIN DURING CONSTRUCTION.
14. WHERE THE NEW WATER MAIN IS INSTALLED OUTSIDE THE ROADWAY A DISTANCE OF THREE (3) FEET OR LESS FROM THE WATER MAIN CENTERLINE TO THE EDGE OF PAVEMENT OF PUBLIC ROADWAYS, TRENCH BACKFILL SHALL BE FLOWABLE FILL IN ACCORDANCE WITH NKWD AND KYTC STANDARD SPECIFICATIONS.

WATER MAIN RELOCATION
GENERAL SUMMARY SHEET

MicroStation v8.11.9.832 E-SHEET NAME: USER: WQUAM DATE PLOTTED: June 1, 2019 FILE NAME: C:\PW\WORKING\EAST01\DI00942\10043346-C3D.DWG



WATER MAIN RELOCATION
 FILE SHEET

COUNTY OF	ITEM NO.	SHEET NO.
KENTON	6-304.01	U3

MicroStation v8.11.9.832 E-SHEET NAME USER: N. KY. WATER DISTRICT DATE PLOTTED: June 1, 2019 FILE NAME: C:\P\WORKING\EAST01\DI009427\STANDARD DETAILS.DWG

EARTH CUTS TRENCH DETAIL

PVC PIPE

WATER MAIN PARALLELING SEWER MAIN

ROCK CUTS & UNSTABLE SUBGRADE TRENCH DETAIL

SUBDIVISION CONSTRUCTION

WATER MAIN CROSSING SEWER

ALTERNATE TO BE USED ONLY ON APPROVAL

UNLESS OTHERWISE NOTED

REVISION	BY	DATE
1		

N. KY. WATER DISTRICT
CONCRETE THRUST BLOCK DETAIL

DATE: 6/1/2019
DRAWN BY: JH
APPROVED: JH

45° BEND

90° BEND

11 1/4° & 22 1/2° BEND

ELEVATION

TEE (GRADE END ON THE HYDRAULIC SIDE)

150 PSI/250 PSI

PIPE SIZE	A	B	C	D	E
6"	27 1/2"	19 1/2"	27 1/2"	19 1/2"	19 1/2"
8"	27 1/2"	27 1/2"	27 1/2"	27 1/2"	19 1/2"
10"	27 1/2"	27 1/2"	27 1/2"	27 1/2"	19 1/2"
12"	27 1/2"	27 1/2"	27 1/2"	27 1/2"	19 1/2"
14"	27 1/2"	27 1/2"	27 1/2"	27 1/2"	19 1/2"
16"	27 1/2"	27 1/2"	27 1/2"	27 1/2"	19 1/2"
18"	27 1/2"	27 1/2"	27 1/2"	27 1/2"	19 1/2"
20"	27 1/2"	27 1/2"	27 1/2"	27 1/2"	19 1/2"

CONCRETE BACKING FOR VERTICAL BENDS

SECTION A-A

SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
1/2"	11.18	22.12	45	100	100	100
3/4"	12.24	24.27	50.26	100	100	110
1"	13.30	26.42	55.52	100	100	120
1 1/4"	15.48	30.57	66.78	100	100	130
1 1/2"	16.54	32.72	72.04	100	100	140
2"	19.70	38.88	88.10	100	100	160
3"	25.92	50.04	114.16	100	100	180
4"	32.14	61.20	140.22	100	100	200
6"	44.38	81.60	188.40	100	100	240
8"	56.62	102.00	236.58	100	100	280
10"	68.86	122.40	284.76	100	100	320
12"	81.10	142.80	332.94	100	100	360
14"	93.34	163.20	381.12	100	100	400
16"	105.58	183.60	429.30	100	100	440
18"	117.82	204.00	477.48	100	100	480
20"	130.06	224.40	525.66	100	100	520

NOTE: DIMENSIONS GIVEN IN DECIMAL FEET

UNDER ASPHALT CONCRETE PAVEMENT

UNDER CONCRETE PAVEMENT

UNDER STATE MAINTAINED STREET ALL CONSTRUCTION

UNDER SHOULDER OF STATE MAINTAINED STREET

TEMPORARY STREET RESTORATION

PDD= Standard Proctor Dry Density - ASTM D598

REVISION	BY	DATE
1		

N. KY. WATER DISTRICT
CONCRETE THRUST BLOCKING FOR VERTICAL BENDS

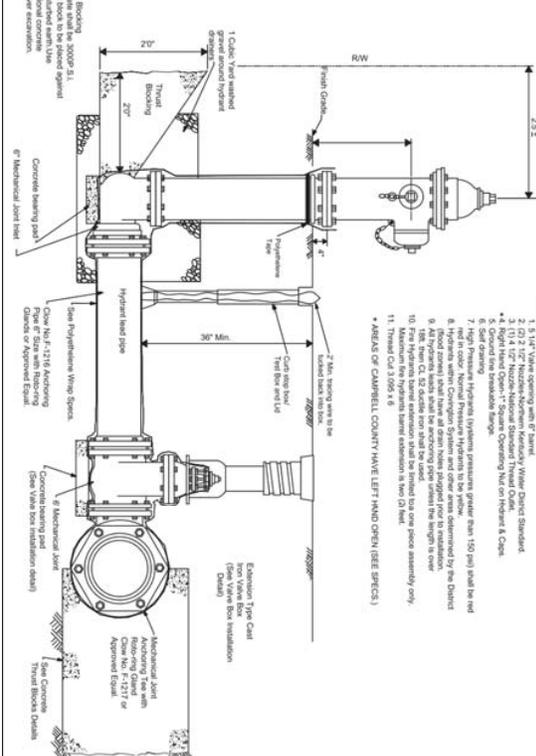
DATE: 6/1/2019
DRAWN BY: JH
APPROVED: JH

WATER MAIN RELOCATION STANDARD DETAILS

1 OF 2

COUNTY OF: KENTON
ITEM NO.: 6-30/4.01
SHEET NO.: U4

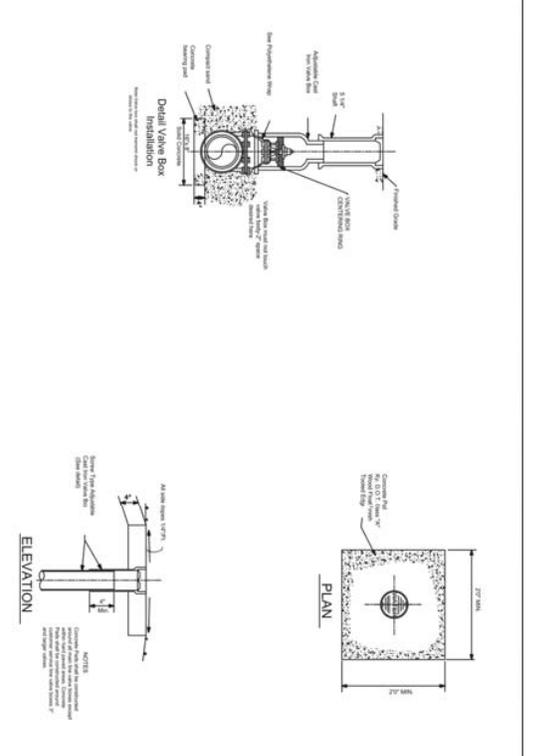
MicroStation v8.11.9.832 E-SHEET NAME: USER: NQUM DATE PLOTTED: June 1, 2019 FILE NAME: C:\PWORKING\EAST01\DI00942\STANDARD DETAILS.DWG



HYDRANT DETAIL

1. 1 1/2" Valve opening with 1" handle.
2. 1 1/2" NPSN National Standard Thread Outlet.
3. 1 1/4" NPSN National Standard Thread Outlet.
4. 1 1/2" NPSN National Standard Thread Outlet.
5. 1 1/2" NPSN National Standard Thread Outlet.
6. 2" Galvneal.
7. 1 1/2" NPSN National Standard Thread Outlet.
8. Hydrants with Convergion System and other areas determined by the District.
9. All hydrants shall be installed per the District.
10. All hydrants shall be installed per the District.
11. Material for hydrants shall be as per District.

* ALL AREAS OF CAMPBELL COUNTY HAVE LEFT HAND OPEN (SEE SPECS.)



VALVE BOX AND VALVE PAD DETAIL

30" Square Concrete Pad
6" Thick with (2) 4" Rebar
Beneath each side
Finished Grade

36" Min.

24" Max.
16" Min.

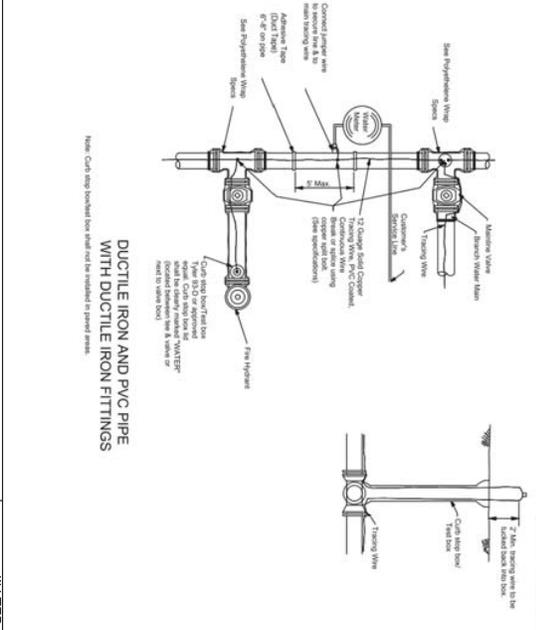
18" ID x 24" High Iron Box Type
Air Release Valve
Soil & Operating Pressure
Specifications

Grade "X" Red Brass Threaded Pipe
Concrete Block as required to support box
6" Deep Pad Gravel

NOTE: Air Release Valve to be certified
over water valve.
Air Release Valve must be 1" case
1/2" Foot Type NPT 24 &
Extension Ring E-22 or approved equal.

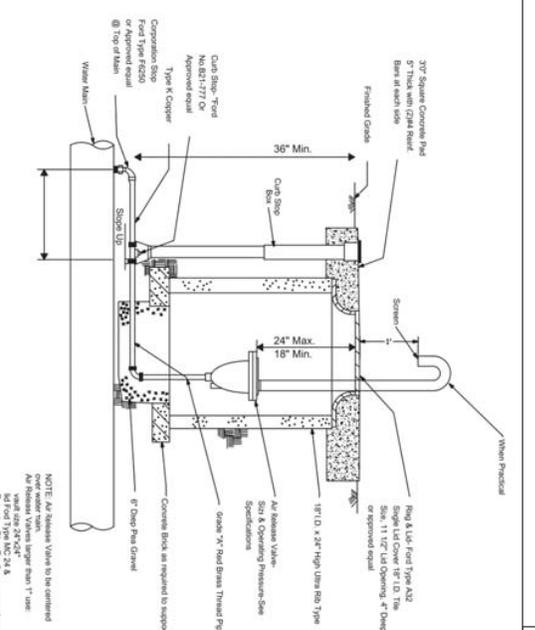
REVISION	BY	DATE

DATE: 6/1/2014	DRAWN BY: NQUM	CHECKED BY: NQUM	APPROVED BY: NQUM	DATE: 6/1/2014
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DUCTILE IRON AND PVC PIPE WITH DUCTILE IRON FITTINGS

NOTE: Cast iron backhoe pad shall not be installed in ground areas.



TRACING WIRE INSTALLATION DETAIL

2" Max. Spacing wire to be installed beneath valve.

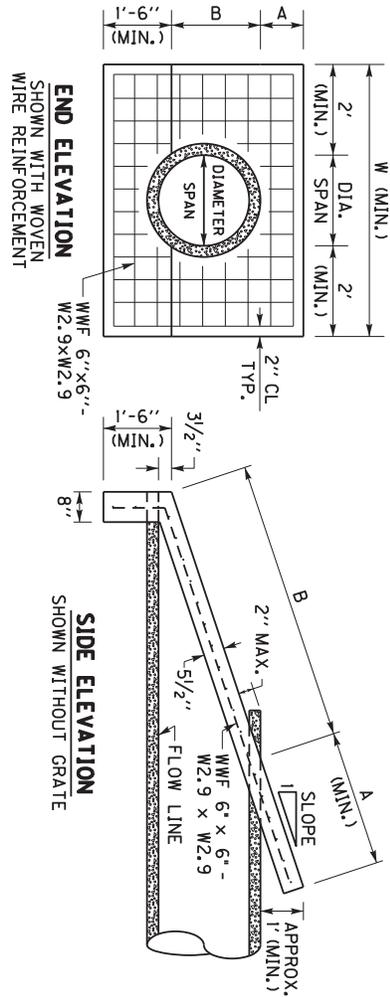
REVISION	BY	DATE

DATE: 6/1/2014	DRAWN BY: NQUM	CHECKED BY: NQUM	APPROVED BY: NQUM	DATE: 6/1/2014
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DATE: 6/1/2014	DRAWN BY: NQUM	CHECKED BY: NQUM	APPROVED BY: NQUM	DATE: 6/1/2014
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COUNTY OF	KENTON
ITEM NO.	6-304.01
SHEET NO.	115

WATER MAIN RELOCATION
STANDARD DETAILS
2 OF 2



ISOMETRIC VIEW
SHOWN WITH WOVEN WIRE REINFORCEMENT AND WEDGE ANCHORS

PLAN VIEW
SHOWN WHEN THE PIPE IS ON A SKEW

DIMENSIONS AND CONCRETE QUANTITIES (FOR PIPE WITH SKEW = 0°)

PIPE SIZE	3:1 SLOPE			4:1 SLOPE			6:1 SLOPE		
	A	B	W	A	B	W	A	B	W
15"	3'	3'-7 1/2"	5'-3"	4'	4'-8 3/4"	5'-3"	6'	6'-11 3/4"	5'-3"
18"	3'	4'-5 3/4"	5'-6"	4'	5'-10"	5'-6"	6'	8'-7 1/4"	5'-6"
24"	3'	6'-2 1/2"	6'-0"	4'	8'-1"	6'-0"	6'	11'-11"	6'-0"
30"	3'	7'-10 3/4"	6'-6"	4'	10'-3 3/4"	6'-6"	6'	15'-2 1/2"	6'-6"
			CU. YDS. CONCRETE			CU. YDS. CONCRETE			CU. YDS. CONCRETE
			0.74			0.93			1.29
			0.85			1.05			1.48
			1.05			1.32			1.87
			1.43			1.80			2.28

BID ITEM AND UNIT TO BID: 24575ESS60 HEADWALL (SLOPED & MITERED CONCRETE-FOR 1/2 INCH PIPE) - EACH

••DIMENSIONS AND CONCRETE QUANTITIES ARE APPROXIMATE AND LISTED FOR INFORMATIONAL PURPOSES ONLY••

NOTES

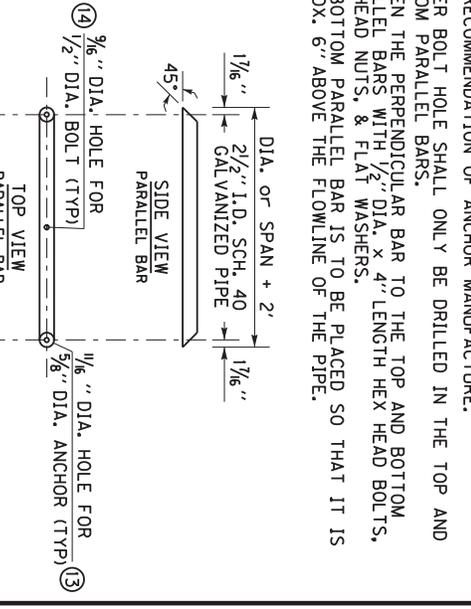
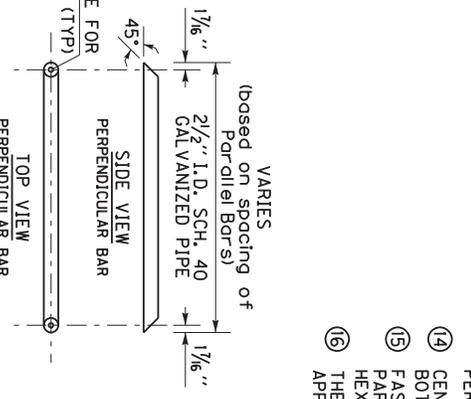
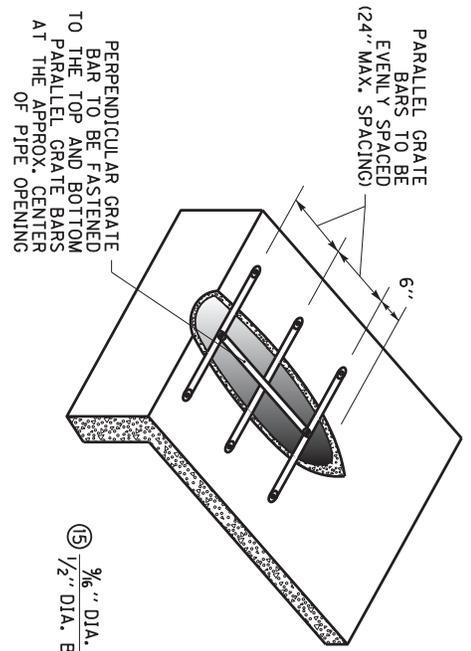
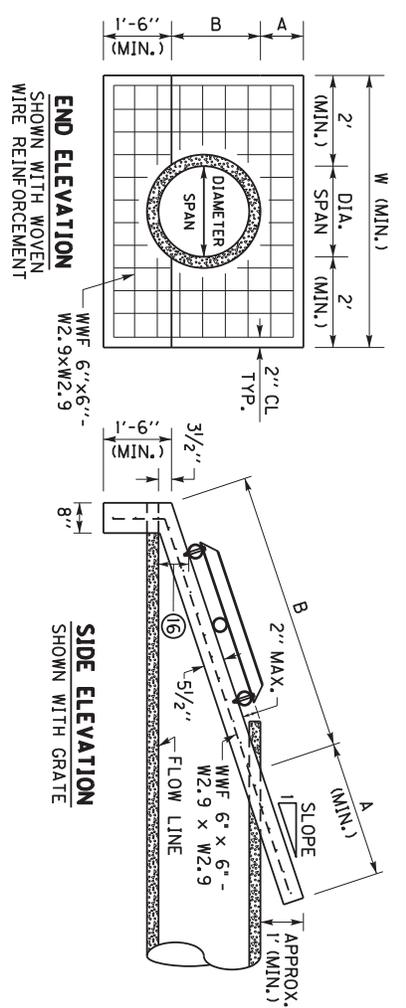
- FOR PIPES THAT RECEIVE THE SLOPED & MITERED CONCRETE HEADWALL, THE PIPE LENGTH SHALL BE MEASURED TO THE FURTHEST POINT ALONG THE MITERED END OF THE PIPE.
- THE EMBANKMENT FILL MATERIAL IS TO BE PLACED, COMPACTED, AND GRABED AROUND THE PIPE BEFORE THE CONCRETE SLOPE PAVING IS PLACED. THE INTENT IS FOR THE SLOPED & MITERED HEADWALL TO MATCH THE FINAL EMBANKMENT SLOPE.
- THE PIPE SHALL BE MITERED AFTER THE CONCRETE SLOPE PAVING HAS BEEN PLACED AND SUFFICIENTLY CURED. THE PIPE SHOULD BE MITERED AS CLOSE TO FLUSH WITH THE CONCRETE PAVING AS POSSIBLE, AND NO HIGHER THAN 2" ABOVE THE SLOPE PAVING. HAND FINISHING AND/OR CUTTING MAY BE NECESSARY.
- WHEN THE PIPE IS ON A SKEW, INSTALL THE HEADWALL AND MITER THE PIPE SO THAT THE CONCRETE SLOPE PAVING IS PERPENDICULAR TO THE ROADWAY. FOR HEADWALLS ON SKEWED PIPES, THE HEADWALL WIDTH, 'W', SHALL BE WIDENED, AS NEEDED, SO THAT THE OUTSIDE EDGE OF THE CONCRETE SLOPE PAVING IS A MINIMUM OF 2" FROM THE OUTER MOST EDGE OF THE PIPE.
- THE DIMENSION 'A' IS BASED ON THE FINAL GRADED SLOPE. THE DIMENSION 'B' IS BASED ON CIRCULAR REINFORCED CONCRETE PIPE AT 0° SKEW FOR THE LISTED SLOPE. THE DIMENSION 'W' IS BASED ON THE DIAMETER, OR SPAN, OF THE PIPE. THE FINAL HEADWALL DIMENSIONS AND CONCRETE QUANTITIES MAY VARY BASED ON THE FINAL GRADED SLOPE, PIPE SKEW, AND/OR PIPE TYPE.
- WOVEN WIRE REINFORCEMENT (WWF 6"x6" - W2.9xW2.9) IS REQUIRED FOR THE SLOPE PAVING AND TOE WALL. UTILIZE 2" CLEARANCE FROM ALL EDGES.
- DIMENSIONS AND CONCRETE QUANTITIES SHOWN ARE FOR ONE (1) HEADWALL, INSTALLED ON A PIPE WITH SKEW = 0°.
- AFTER THE PIPE HAS BEEN MITERED, ANCHOR THE PIPE TO THE CONCRETE SLOPE PAVING BY CORE DRILLING AND INSTALLING 1/2" DIAMETER x 7" LENGTH STEEL WEDGE ANCHORS (3" MINIMUM EMBEDMENT) ON 18" CENTERS ALONG THE SIDES OF THE PIPE. HOLE SIZE & DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURER. NOTE: STEEL WEDGE ANCHORS ARE NOT REQUIRED FOR REINFORCED CONCRETE PIPE.
- THE FOLLOWING SITUATIONS REQUIRE A HEADWALL WITH A GRATE - 24" DIAMETER PIPE ON GREATER THAN 30° SKEW - 30" DIAMETER PIPE ON GREATER THAN 15° SKEW - PIPE WITH GREATER THAN 30" DIAMETER, - ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER - SEE SHEET 2 FOR GRATE DETAILS
- ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT: ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

COUNTY OF	ITEM NO.	SHEET NO.
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NOT TO SCALE

KENTUCKY
DEPARTMENT OF HIGHWAYS
SLOPED & MITERED CONCRETE HEADWALL (SHEET 1 OF 2)

SEE SHEET 2 FOR DIMENSIONS OF HEADWALLS FOR PIPE OVER 30" DIAMETER



- ~ NOTES ~
- SEE SHEET 1 FOR NOTES 1 THRU 8
- 24" DIAMETER PIPE ON GREATER THAN 30° SKEW
 - 30" DIAMETER PIPE ON GREATER THAN 15° SKEW
 - PIPE WITH GREATER THAN 30" DIAMETER
 - ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER
 - ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT; ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
 - THE PIPE USED TO CONSTRUCT THE GRATE SHALL BE STEEL, SCHEDULE 40, CONFORMING TO ASTM A53, AND GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AFTER FABRICATION.
 - ANY RAW METAL EXPOSED BY FIELD CUTTING AND/OR DRILLING SHALL BE TREATED WITH A COLD GALVANIZING COMPOUND.
 - FASTEN PARALLEL BARS TO HEADWALL WITH 3/8" DIA. x 4 1/2" LENGTH STEEL WEDGE ANCHORS, MINIMUM EMBEDMENT = 2 3/4" HOLE SIZE AND DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURE.
 - CENTER BOLT HOLE SHALL ONLY BE DRILLED IN THE TOP AND BOTTOM PARALLEL BARS.
 - FASTEN THE PERPENDICULAR BAR TO THE TOP AND BOTTOM PARALLEL BARS WITH 1/2" DIA. x 4" LENGTH HEX HEAD BOLTS, HEX HEAD NUTS, & FLAT WASHERS.
 - THE BOTTOM PARALLEL BAR IS TO BE PLACED SO THAT IT IS APPROX. 6" ABOVE THE FLOWLINE OF THE PIPE.

DIMENSIONS AND CONCRETE QUANTITIES (FOR PIPE WITH SKEW = 0°) (4)

PIPE SIZE	3:1 SLOPE			4:1 SLOPE			6:1 SLOPE			GRATE REQUIRED		
	A	B	W	A	B	W	A	B	W			
36"	9'-7 1/2"	7'-0"	1.51	4'	12'-6 1/2"	7'-0"	1.91	6'	18'-6"	7'-0"	2.42	YES
42"	11'-4"	7'-6"	1.76	4'	14'-9 1/4"	7'-6"	2.23	6'	21'-9 1/2"	7'-6"	3.19	YES

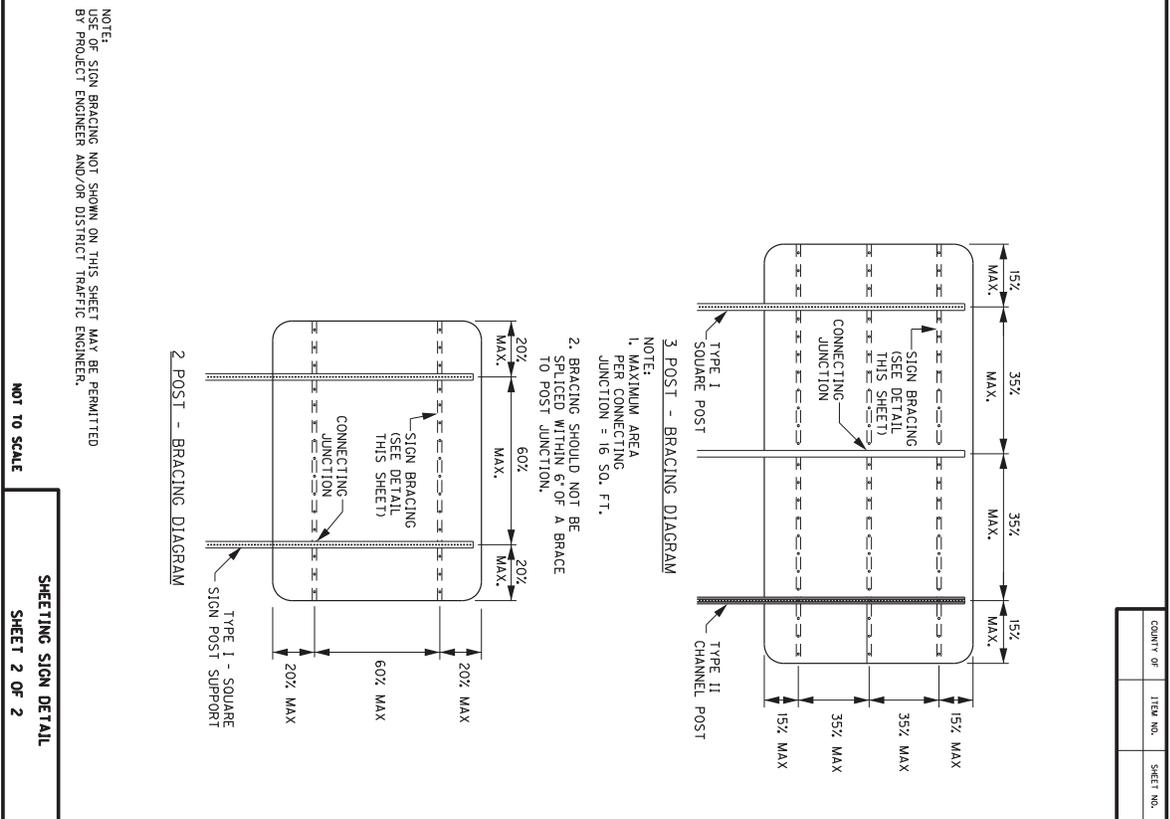
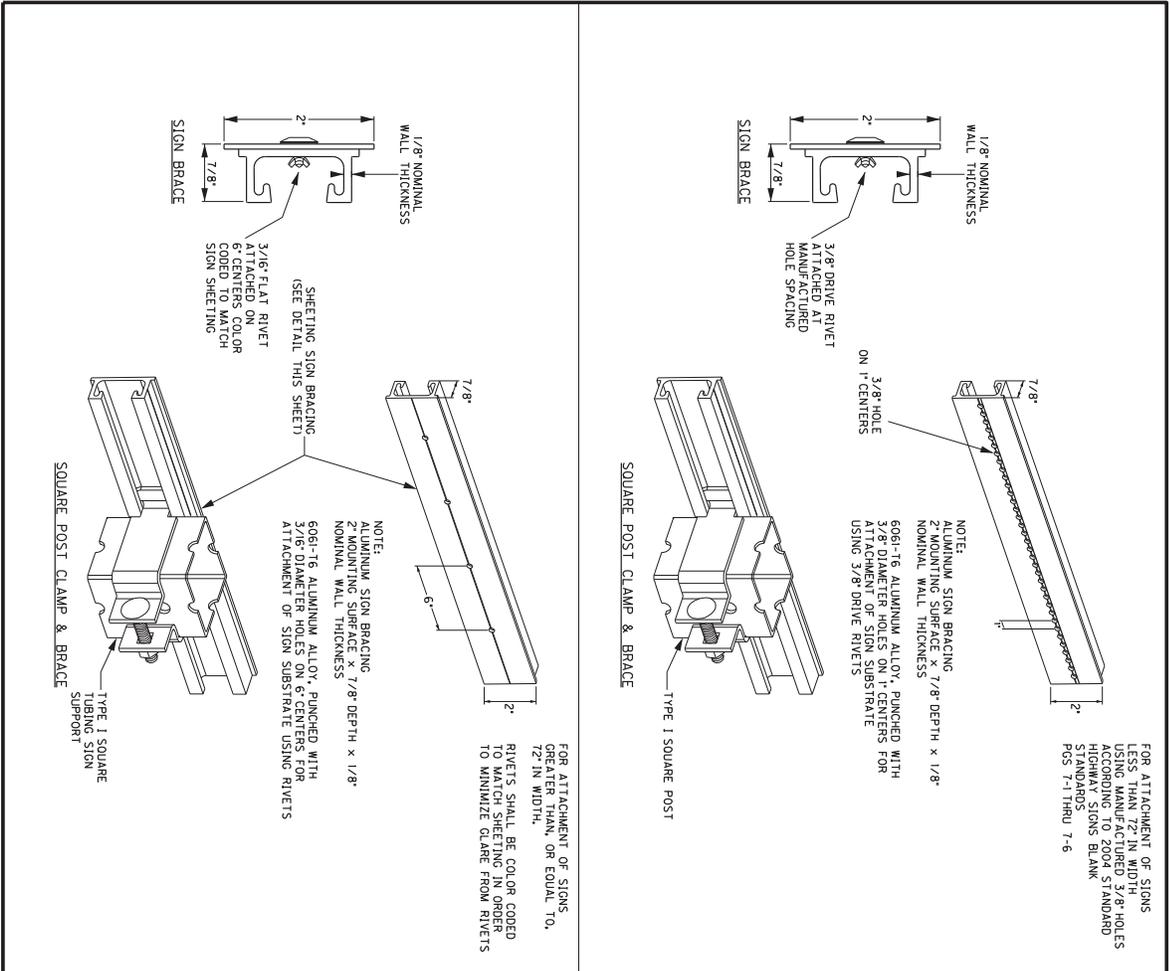
CU. YDS. CONCRETE

NOT TO SCALE

DEPARTMENT OF HIGHWAYS	KENTUCKY
SLOPED & MITERED CONCRETE HEADWALL (SHEET 2 OF 2)	

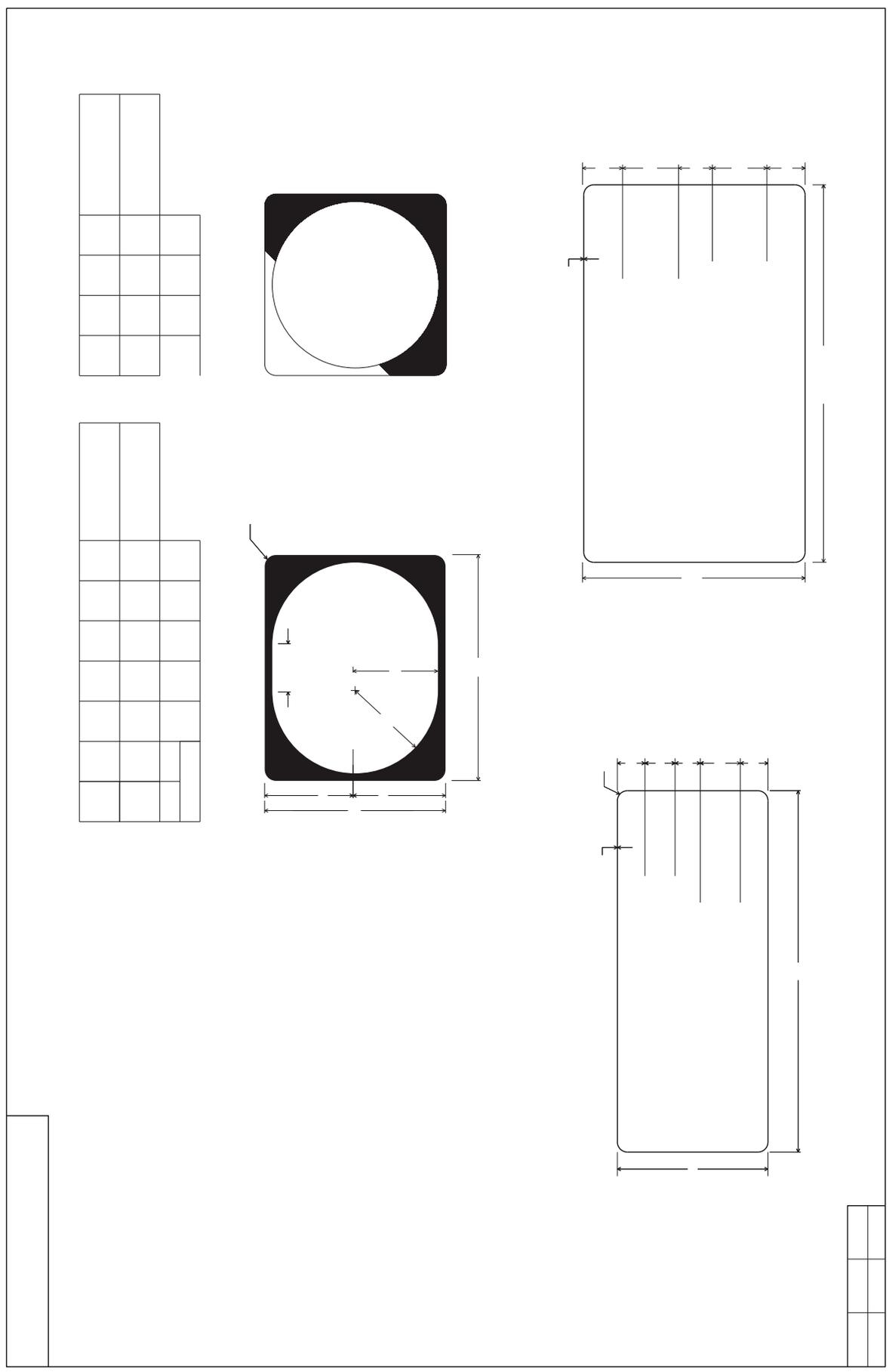
BID ITEM AND UNIT TO BID: 24575ESS610 HEADWALL (SLOPED & MITERED CONCRETE-FOR 1/2 INCH PIPE) - EACH

SEE SHEET 1 FOR DIMENSIONS OF HEADWALLS FOR PIPE 30" DIAMETER & LESS



SHEETING SIGN DETAIL
SHEET 2 OF 2

COUNTY OF	ITEM NO.	SHEET NO.
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PART II
SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2019* and *Standard Drawings, Edition of 2020*.

SUPPLEMENTAL SPECIFICATIONS

The contractor shall use the Supplemental Specifications that are effective at the time of letting.
The Supplemental Specifications can be found at the following link:

<http://transportation.ky.gov/Construction/Pages/Kentucky-Standard-Specifications.aspx>

SPECIAL NOTE FOR BARCODE LABEL ON PERMANENT SIGNS

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

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

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

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

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

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

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

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

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

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

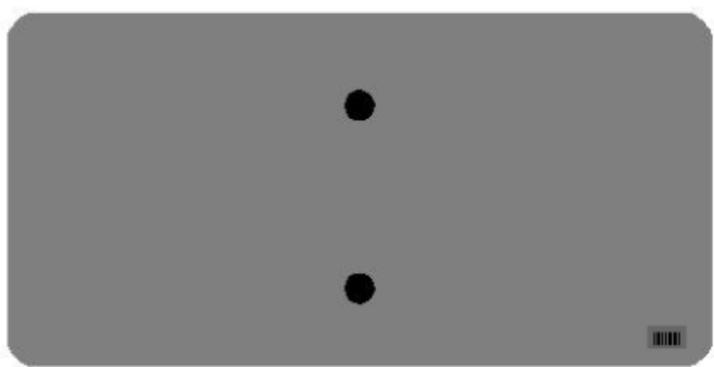
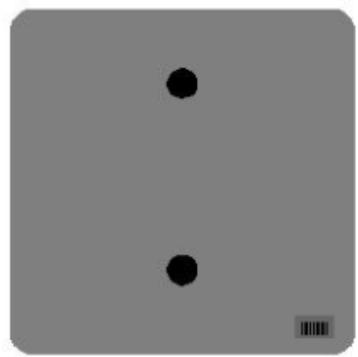
<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24631EC	Barcode Sign Inventory	Each

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

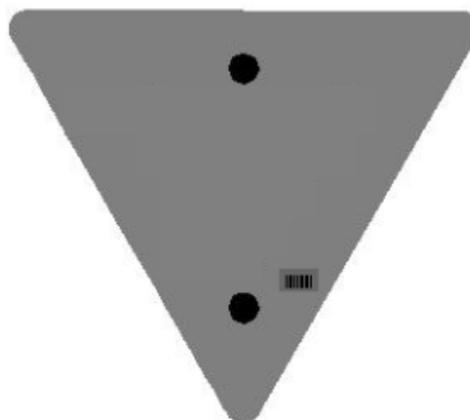
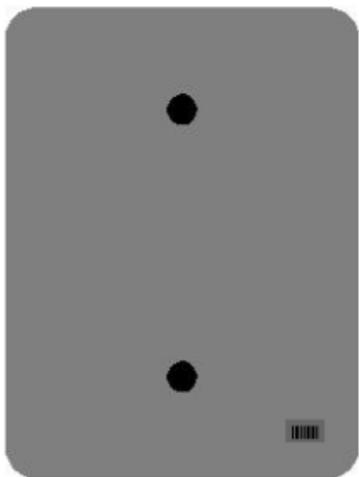
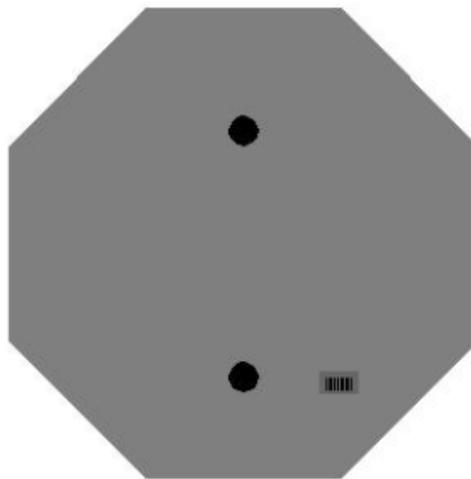
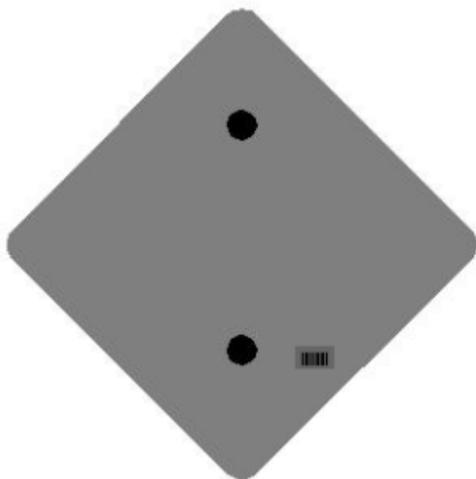
One Sign Post



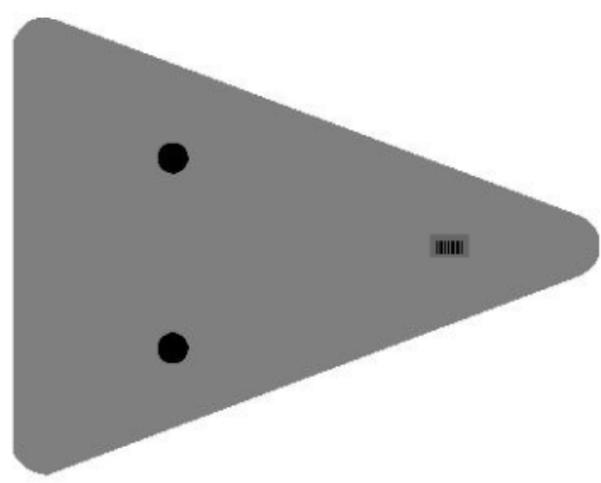
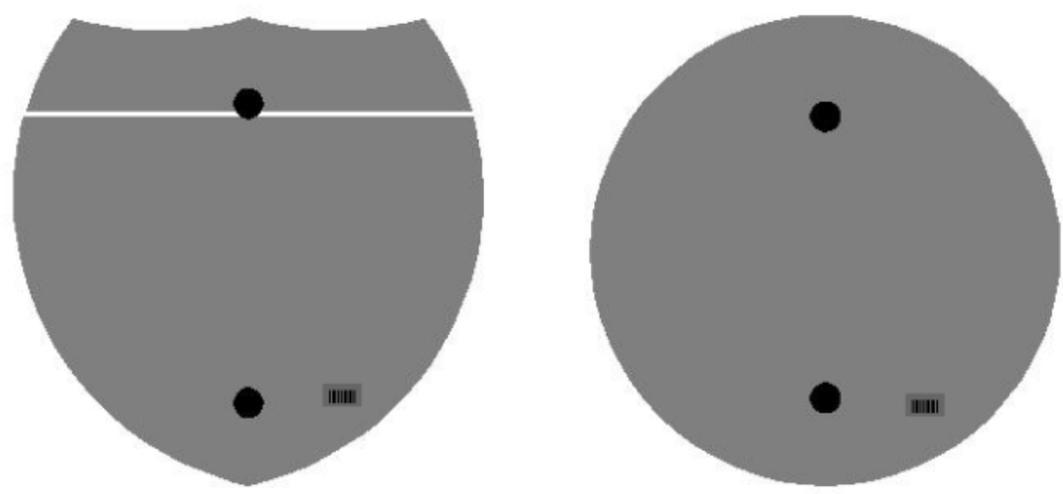
↑
2" Wide Post



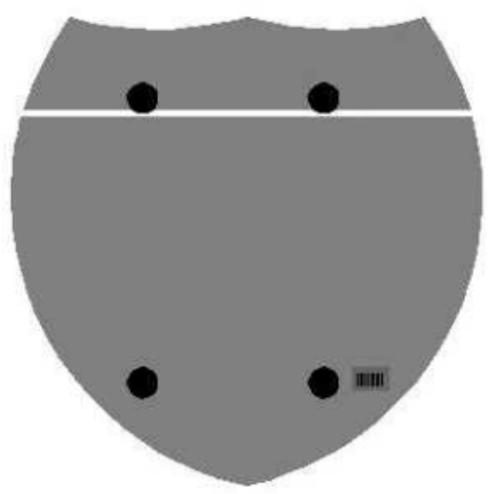
One Sign Post



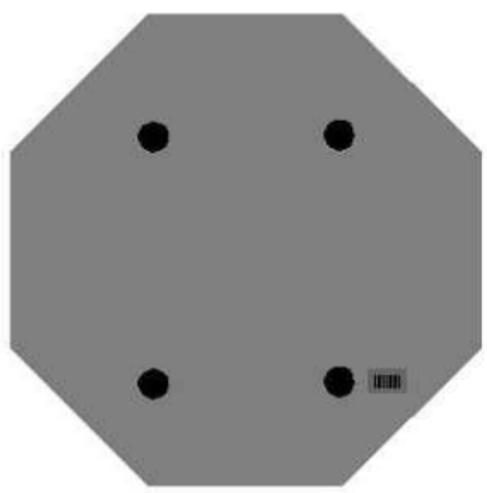
One Sign Post



Double Sign Post



Interstate
Shield

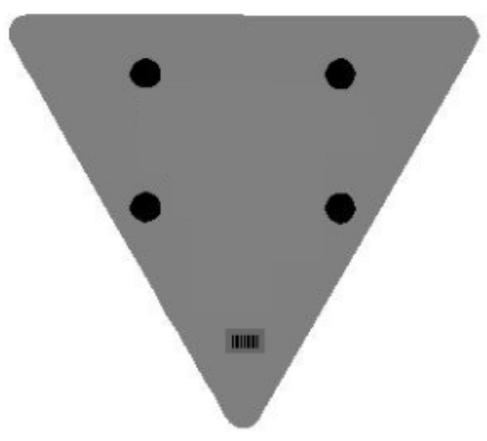


48" Stop

2 Post Signs



↑
2" Wide Post



2020 STANDARD DRAWINGS THAT APPLY

ROADWAY

~ DRAINAGE ~

TYPICAL DRAINAGE INSTALLATIONS

CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (12" – 24" PIPE)	RDI-001-10
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER PIPE	RDI-020-10
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER, REINFORCED CONC. PIPE	RDI-021-01
PIPE BEDDING, TRENCH CONDITION	RDI-025-06
PIPE BEDDING, TRENCH CONDITION, REINFORCED CONC. PIPE	RDI-026-01
EROSION CONTROL BLANKET CHANNEL INSTALLATION	RDI-041-01

MISCELLANEOUS DRAINAGE

TEMPORARY SILT FENCE	RDX-210-03
SILT TRAP - TYPE B	RDX-225-01

~ GENERAL ~

CURVE WIDENING AND SUPERELEVATION

CURVE WIDENING AND SUPERELEVATION TRANSITIONS	RGS-001-07
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MISCELLANEOUS STANDARDS

RIGHT OF WAY MONUMENTS	RGX-005-06
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~ PAVEMENT ~

MEDIANS, CURBS, APPROACHES, ENTRANCES, ETC.

APPROACHES, ENTRANCES, AND MAIL BOX TURNOUT	RPM-110-07
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TRAFFIC

~ PERMANENT ~

RUMBLE STRIPS

SHOULDER & EDGELINE RUMBLE STRIPS PLACEMENT DETAILS	TPR-115
SHOULDER RUMBLE STRIP DETAILS TWO LANE ROADWAYS	TPR-125

~ TEMPORARY ~

TRAFFIC CONTROL

LANE CLOSURE TWO-LANE HIGHWAY	TTC-100-05
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PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 -- Revised May 1, 2012

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

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

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

ATTACHMENTS

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

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

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

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

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

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

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

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

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

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (ii) The classification is utilized in the area by the construction industry; and
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

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

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

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

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

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

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

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

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

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

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

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

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

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

b. Trainees (programs of the USDOL).

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

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

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

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

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

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

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

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

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

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

VII. SAFETY: ACCIDENT PREVENTION

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

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

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

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

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

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

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

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

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

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

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

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

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS**

**EMPLOYMENT REQUIREMENTS
RELATING TO
NONDISCRIMINATION OF EMPLOYEES
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)**

**AN ACT OF THE KENTUCKY GENERAL ASSEMBLY
TO PREVENT DISCRIMINATION IN EMPLOYMENT**

**KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972**

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (forty and above); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age forty (40) and over. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, except that such a notice or advertisement may indicate a preference, limitation, or specification based on religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, when religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age forty (40) and over, in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

Revised: January 25, 2017

Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*)

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

No present or former public servant shall, within six (6) months following termination of his office or employment, accept employment, compensation, or other economic benefit from any person or business that contracts or does business with, or is regulated by, the state in matters in which he was directly involved during the last thirty-six (36) months of his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, or for which he received, prior to his state employment, a professional degree or license, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his tenure in state government. This subsection shall not prohibit the performance of ministerial functions, including but not limited to filing tax returns, filing applications for permits or licenses, or filing incorporation papers, nor shall it prohibit the former officer or public servant from receiving public funds disbursed through entitlement programs.

KRS 11A.040 (9) states:

A former public servant shall not represent a person or business before a state agency in a matter in which the former public servant was directly involved during the last thirty-six (36) months of his tenure, for a period of one (1) year after the latter of:

- a) The date of leaving office or termination of employment; or
- b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, 3 Fountain Place, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: January 27, 2017

"General Decision Number: KY20200039 08/14/2020

Superseded General Decision Number: KY20190039

State: Kentucky

Construction Type: Highway

Counties: Boone, Campbell, Kenton and Pendleton Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020
1	08/14/2020

BRKY0002-005 06/01/2017

	Rates	Fringes
BRICKLAYER.....	\$ 27.81	13.01

BROH0001-005 06/01/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.75	8.60

CARP0698-001 05/01/2014

BOONE, CAMPBELL, KENTON & PENDLETON COUNTIES:

	Rates	Fringes
Carpenter & Piledrivermen.....	\$ 27.27	14.59
Diver.....	\$ 40.58	9.69

 ELEC0212-007 06/03/2019

	Rates	Fringes
ELECTRICIAN.....	\$ 30.18	18.89

 ELEC0212-013 11/26/2018

	Rates	Fringes
Sound & Communication Technician.....	\$ 24.35	10.99

 ENGI0018-013 05/01/2019

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 37.39	14.95
GROUP 2.....	\$ 37.27	14.95
GROUP 3.....	\$ 36.23	14.95
GROUP 4.....	\$ 35.05	14.95
GROUP 5.....	\$ 29.59	14.95
GROUP 6.....	\$ 37.64	14.95
GROUP 7.....	\$ 37.89	14.95

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System); Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24" wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; & Wheel Excavator

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48"; Bulldozer; Endloader; Hydro Milling Machine; Horizontal Directional Drill (over 500,000 ft. lbs. thrust); Kolman-type Loader (production type-Dirt);

Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24" wide & under); & Vermeer type Concrete Saw

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer; Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4" & over discharge); Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); & Welding Machines

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway) except Masonry; Finishing Machine; Fireperson, Floating Equipment (all types); Fork Lift (highway); Form Trencher; Hydro Hammer; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); & Vibratory Compactor with Integral Power

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt); Generator; Masonry Fork Lift; Inboard-Outboard Motor Boat Launch; Masonry Fork Lift; Oil Heater (asphalt plant); Oiler; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4" discharge); Signalperson; Tire Repairperson; & VAC/ALLS

GROUP 6 - Master Mechanic & Boom from 150 to 180

GROUP 7 - Boom from 180 and over

* IRON0044-008 06/01/2020

	Rates	Fringes
Ironworkers:		
Fence Erector.....	\$ 28.95	21.20
Structural.....	\$ 30.47	21.20

* IRON0044-018 06/01/2020

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 30.47	21.20

LABO0189-004 07/01/2018

PENDLETON COUNTY:

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 23.07	14.21
GROUP 2.....	\$ 23.32	14.21
GROUP 3.....	\$ 23.37	14.21
GROUP 4.....	\$ 23.97	14.21

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Driller (All Types); Powderman & Blaster; Troxler & Concrete Tester if Laborer is Utilized

LABO0265-009 05/01/2018

BOONE, CAMPBELL & KENTON COUNTIES:

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 30.62	10.95
GROUP 2.....	\$ 30.79	10.95
GROUP 3.....	\$ 31.12	10.95
GROUP 4.....	\$ 31.57	10.95

LABORER CLASSIFICATIONS

GROUP 1 - Asphalt Laborer; Carpenter Tender; Concrete Curing Applicator; Dump Man (Batch Truck); Guardrail and Fence Installer; Joint Setter; Laborer (Construction); Landscape Laborer; Highway Lighting Worker; Signalization Worker; Mesh Handlers & Placer; Right-of-way Laborer; Riprap Laborer & Grouter; Scaffold Erector; Seal Coating; Surface Treatment or Road Mix Laborer; Sign Installer; Slurry Seal; Utility Man; Bridge Man; Handyman; Waterproofing Laborer; Flagperson; Hazardous Waste (level D); Diver Tender; Zone Person & Traffic Control

GROUP 2 - Skid Steer; Asphalt Raker; Concrete Puddler; Kettle Man (Pipeline); Machine Driven Tools (Gas, Electric, Air); Mason Tender; Brick Paver; Mortar Mixer; Power Buggy or Power Wheelbarrow; Sheeting & Shoring Man; Surface Grinder Man; Plastic Fusing Machine Operator; Pug Mill Operator; & Vacuum Devices (wet or dry); Rodding Machine Operator; Diver; Screwman or Paver; Screed Person; Water Blast, Hand Held Wand; Pumps 4" & Under (Gas, Air or Electric) & Hazardous Waste (level C); Air Track and Wagon Drill; Bottom Person; Cofferdam (below 25 ft. deep); Concrete Saw Person; Cutting with Burning Torch; Form Setter; Hand Spiker (Railroad); Pipelayer; Tunnel Laborer (without air) & Caisson; Underground Person (working in Sewer and Waterline, Cleaning, Repairing & Reconditioning); Sandblaster Nozzle Person; & Hazardous Waste (level B)

GROUP 3 - Blaster; Mucker; Powder Person; Top Lander; Wrencher (Mechanical Joints & Utility Pipeline); Yarnier; Hazardous Waste (level A); Concrete Specialist; Concrete Crew in Tunnels (With Air-pressurized - \$1.00 premium); Curb Setter & Cutter; Grade Checker; Utility Pipeline Tapper; Waterline; and Caulker

GROUP 4 - Miner; & Gunite Nozzle Person

TUNNEL LABORER WITH AIR-PRESSURIZED ADD \$1.00 TO BASE RATE

SIGNAL PERSON WILL RECEIVE THE RATE EQUAL TO THE RATE PAID THE LABORER CLASSIFICATION FOR WHICH HE OR SHE IS SIGNALING.

 PAIN0012-016 05/01/2015

	Rates	Fringes
PAINTER		
Bridge.....	\$ 24.39	9.06
Bridge Equipment Tender and Containment Builder.....	\$ 20.73	9.06
Brush & Roller.....	\$ 23.39	9.06
Sandblasting & Water Blasting.....	\$ 24.14	9.06
Spray.....	\$ 23.89	9.06

 PLUM0392-008 06/01/2018

	Rates	Fringes
PLUMBER.....	\$ 32.01	19.67

 SUKY2010-161 02/05/1996

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 15.85	4.60
GROUP 2.....	\$ 16.29	4.60

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Driver

GROUP 2 - Euclid Wagon; End Dump; Lowboy; Heavy Duty
Equipment; Tractor-Trailer Combination; & Drag

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination. The classifications are listed in alphabetical
order of ""identifiers"" that indicate whether the particular
rate is a union rate (current union negotiated rate for local),
a survey rate (weighted average rate) or a union average rate
(weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed
in dotted lines beginning with characters other than ""SU"" or
""UAVG"" denotes that the union classification and rate were
prevailing for that classification in the survey. Example:
PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of

the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

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

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

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

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

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

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

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

OVERTIME:

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

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

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

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

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
11.0%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4, 3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. The notification shall be mailed to:

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

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

PART IV
INSURANCE

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

PART V
BID ITEMS

PROPOSAL BID ITEMS

204407

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Report Date 8/28/20

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	1,150.00	TON		\$	
0020	00003		CRUSHED STONE BASE	440.00	TON		\$	
0030	00100		ASPHALT SEAL AGGREGATE	16.00	TON		\$	
0040	00103		ASPHALT SEAL COAT	3.00	TON		\$	
0050	00221		CL2 ASPH BASE 0.75D PG64-22	538.00	TON		\$	
0060	00301		CL2 ASPH SURF 0.38D PG64-22	116.00	TON		\$	
0070	00356		ASPHALT MATERIAL FOR TACK	1.30	TON		\$	
0080	02676		MOBILIZATION FOR MILL & TEXT (KENTON KY 17 HSIP)	1.00	LS		\$	
0090	02677		ASPHALT PAVE MILLING & TEXTURING	13.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0100	02014		BARRICADE-TYPE III	4.00	EACH		\$	
0110	02091		REMOVE PAVEMENT	775.00	SQYD		\$	
0120	02159		TEMP DITCH	630.00	LF		\$	
0130	02200		ROADWAY EXCAVATION	9,622.00	CUYD		\$	
0140	02230		EMBANKMENT IN PLACE	70.00	CUYD		\$	
0150	02429		RIGHT-OF-WAY MONUMENT TYPE 1	13.00	EACH		\$	
0160	02460		REMOVE TREES OR STUMPS	6.00	EACH		\$	
0170	02483		CHANNEL LINING CLASS II	563.00	TON		\$	
0180	02650		MAINTAIN & CONTROL TRAFFIC (KENTON KY 17 HSIP)	1.00	LS		\$	
0190	02671		PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH		\$	
0200	02696		SHOULDER RUMBLE STRIPS	895.00	LF		\$	
0210	02701		TEMP SILT FENCE	630.00	LF		\$	
0220	02704		SILT TRAP TYPE B	4.00	EACH		\$	
0230	02707		CLEAN SILT TRAP TYPE B	4.00	EACH		\$	
0240	02726		STAKING (KENTON KY 17 HSIP)	1.00	LS		\$	
0250	05950		EROSION CONTROL BLANKET	424.00	SQYD		\$	
0260	05953		TEMP SEEDING AND PROTECTION	560.00	SQYD		\$	
0270	05963		INITIAL FERTILIZER	.50	TON		\$	
0280	05964		MAINTENANCE FERTILIZER	.70	TON		\$	
0290	05985		SEEDING AND PROTECTION	11,100.00	SQYD		\$	
0300	05989		SPECIAL SEEDING CROWN VETCH	5,185.00	SQYD		\$	
0310	05992		AGRICULTURAL LIMESTONE	6.90	TON		\$	
0320	06406		SBM ALUM SHEET SIGNS .080 IN	84.30	SQFT		\$	
0330	06410		STEEL POST TYPE 1	168.00	LF		\$	
0340	06514		PAVE STRIPING-PERM PAINT-4 IN	930.00	LF		\$	
0350	06568		PAVE MARKING-THERMO STOP BAR-24IN	16.00	LF		\$	
0360	20418ED		REMOVE & RELOCATE SIGNS	1.00	EACH		\$	
0370	20430ED		SAW CUT	81.00	LF		\$	
0380	21373ND		REMOVE SIGN	6.00	EACH		\$	
0390	24631EC		BARCODE SIGN INVENTORY	26.00	EACH		\$	

PROPOSAL BID ITEMS

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Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0400	00440		ENTRANCE PIPE-15 IN	56.00	LF		\$	
0410	00462		CULVERT PIPE-18 IN	59.00	LF		\$	
0420	24575ES610		HEADWALL (SLOPED AND MITERED CONCRETE - 18 IN)	2.00	EACH		\$	

Section: 0004 - UTILITY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0430	02690		SAFELOADING	6.00	CUYD		\$	
0440	14020		W FIRE HYDRANT RELOCATE	1.00	EACH		\$	
0450	14030		W METER RELOCATE	1.00	EACH		\$	
0460	14037		W PIPE DUCTILE IRON 08 INCH (CLASS 50)	450.00	LF		\$	
0470	14074		W PLUG EXISTING MAIN	1.00	EACH		\$	
0480	14090		W TAPPING SLEEVE AND VALVE SIZE 2	1.00	EACH		\$	
0490	14095		W TIE-IN 08 INCH	1.00	EACH		\$	
0500	14106		W VALVE 08 INCH	1.00	EACH		\$	
0510	14112		W VALVE ANCHOR EXISTING	1.00	EACH		\$	
0520	14144		W LINE MARKER	1.00	EACH		\$	
0530	14145		W SERV COPPER LONG SIDE 1 IN	1.00	EACH		\$	

Section: 0005 - DEMOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0540	02569		DEMOBILIZATION	1.00	LS		\$	