CALL NO. 104

CONTRACT ID. 141066

JOHNSON COUNTY

FED/STATE PROJECT NUMBER STP 3042(001)

DESCRIPTION COLLEGE STREET(KY-321X)

WORK TYPE JPC PAVEMENT

PRIMARY COMPLETION DATE 8/31/2015

LETTING DATE: November 21,2014

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN STANDARD TIME November 21,2014. Bids will be publicly announced at 10:00 AM EASTERN STANDARD TIME.

PLANS AVAILABLE FOR THIS PROJECT.

DBE CERTIFICATION REQUIRED - 3%

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

TABLE OF CONTENTS

PART I SCOPE OF WORK
- PROJECT(S), COMPLETION DATE(S), & LIQUIDATED DAMAGES
- CONTRACT NOTES
- FEDERAL CONTRACT NOTES
- DGA BASE
- DGA BASE FOR SHOULDERS
- SPECIAL NOTE(S) APPLICABLE TO PROJECT
- RIGHT OF WAY NOTES
- UTILITY CLEARANCE
- UTILITY SPECIFICATIONS

PART II SPECIFICATIONS AND STANDARD DRAWINGS
- SPECIFICATIONS REFERENCE
- SUPPLEMENTAL SPECIFICATION

PART III EMPLOYMENT, WAGE AND RECORD REQUIREMENTS
- FEDERAL-AID CONSTRUCTION CONTRACTS - FHWA 1273
- NONDISCRIMINATION OF EMPLOYEES
- EXECUTIVE BRANCH CODE OF ETHICS
- PROJECT WAGE RATES LOCALITY 2 / FEDERAL (OVER)
- NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EEO JOHNSON

PART IV INSURANCE

PART V BID ITEMS

PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 12

CONTRACT ID - 141066

STP 3042(001)

COUNTY - JOHNSON

PCN - DE058321X1466
STP 3042(001)

COLLEGE STREET(KY-321X) JPC PAVEMENT REPLACEMENT ON KY-321X FROM MP 0.100 TO MP 0.333.JPC PAVEMENT SYP NO. 12-02020.00.

GEOGRAPHIC COORDINATES LATITUDE 37:50:00.00 LONGITUDE 82:50:00.00

COMPLETION DATE(S):

COMPLETED BY 08/31/2015 APPLIES TO ENTIRE CONTRACT

CONTRACT NOTES

PROPOSAL ADDENDA

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

BID SUBMITTAL

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

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

JOINT VENTURE BIDDING

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

UNDERGROUND FACILITY DAMAGE PROTECTION

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

SPECIAL NOTE FOR PIPE INSPECTION

Contrary to Section 701.03.08 of the 2012 Standard Specifications for Road and Bridge Construction and Kentucky Method 64-114, certification by the Kentucky Transportation Center for prequalified Contractors to perform laser/video inspection is not required on this contract. It will continue to be a requirement for the Contractor performing any laser/video pipe inspection to be prequalified for this specialized item with the Kentucky Transportation Cabinet-Division of Construction Procurement.

SPECIAL NOTE FOR COMPOSITE OFFSET BLOCKS

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

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

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

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

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

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

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

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

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website (www.transportation.ky.gov/contract). The answers provided shall be considered part of

this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

HARDWOOD REMOVAL RESTRICTIONS

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

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

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

ACCESS TO RECORDS

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

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

10/29/12

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

Steven L. Beshear
Governor

Lori H. Flanery
Secretary

SECRETARY'S ORDER 11-004

FINANCE AND ADMINISTRATION CABINET

Vendor Document Disclosure

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

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

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

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

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

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

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

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

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

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

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 Capacity Rating 102.10 Delivery of Proposals
102.08 Irregular 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 63-35 DBE, within 10 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 Project Code Number (PCN), 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, the DBE's certificate of insurance, and an affidavit for bidders, offerors, and contractors from the DBE to the Division of Construction Procurement. The affidavit can be found on the Construction Procurement website. If the DBE is a supplier of materials for the project, a signed purchase order and an affidavit for bidders, offerors, and contractors 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 and nine (9) copies of this information must be received in the

office of the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

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

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

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

work requirements of the bid proposal; and

11 Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

FAILURE TO MEET GOOD FAITH REQUIREMENT

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

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

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

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

SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT

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

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

PROMPT PAYMENT

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

CONTRACTOR REPORTING

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to submit certified reports on monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These reports must be submitted within 14 days of payment made to the DBE contractor.

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.

The Prime Contractor should supply the payment information at the time the DBE is compensated for their work. Form to use is located at:
http://transportation.ky.gov/Construction/Pages/Subcontracts.aspx

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 is Melvin Bynes and the telephone number is (502) 564-3601.

Photocopied payments and completed form to be submitted to: Office of Civil Rights and Small Business Development 6th Floor West 200 Mero Street Frankfort, KY 40622

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.

06/20/2014

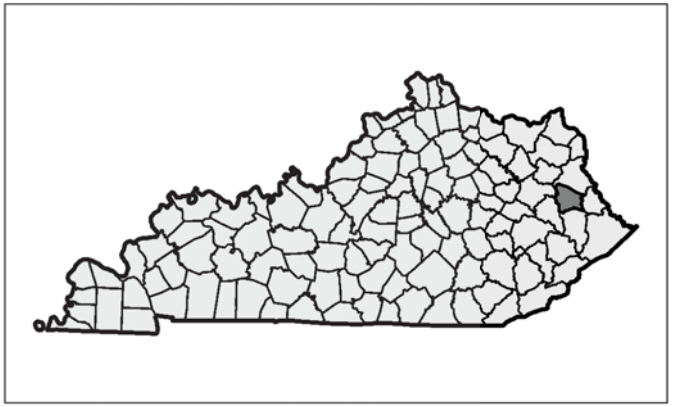
DGA BASE

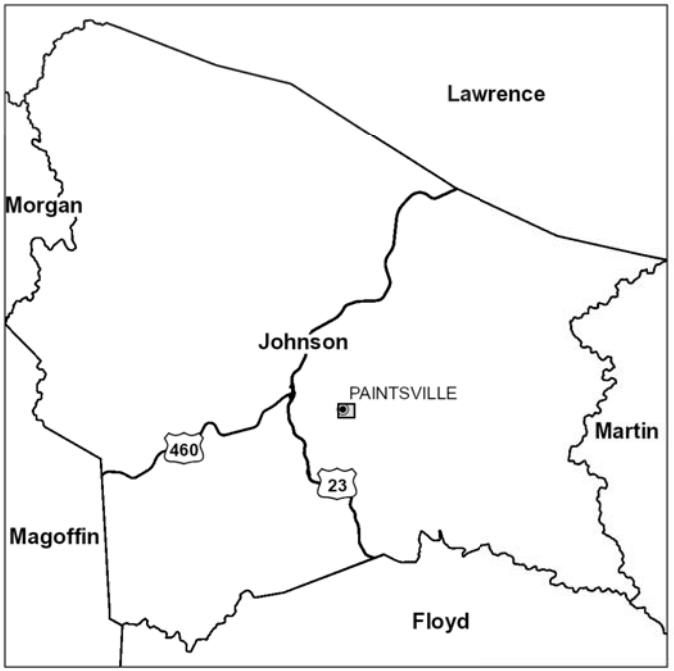
Unless otherwise noted, the Department estimates the rate of application for DGA Base to be 115 lbs/sy per inch of depth.

DGA BASE FOR SHOULDERS

Unless otherwise noted, the Department estimates the rate of application for DGA Base for Shoulders to be 115 lbs/sy per inch of depth. The Department will not measure necessary grading and/or shaping of existing shoulders prior to placing of DGA Base, but shall be incidental to the Contract unit price per ton for DGA Base.

Accept payment at the Contract unit price per ton as full compensation for all labor, materials, equipment, and incidentals for grading and/or shaping of existing shoulders and furnishing, placing, and compacting the DGA Base.





CONSTRUCTION NUMBER: FD52 058 321X 000–001

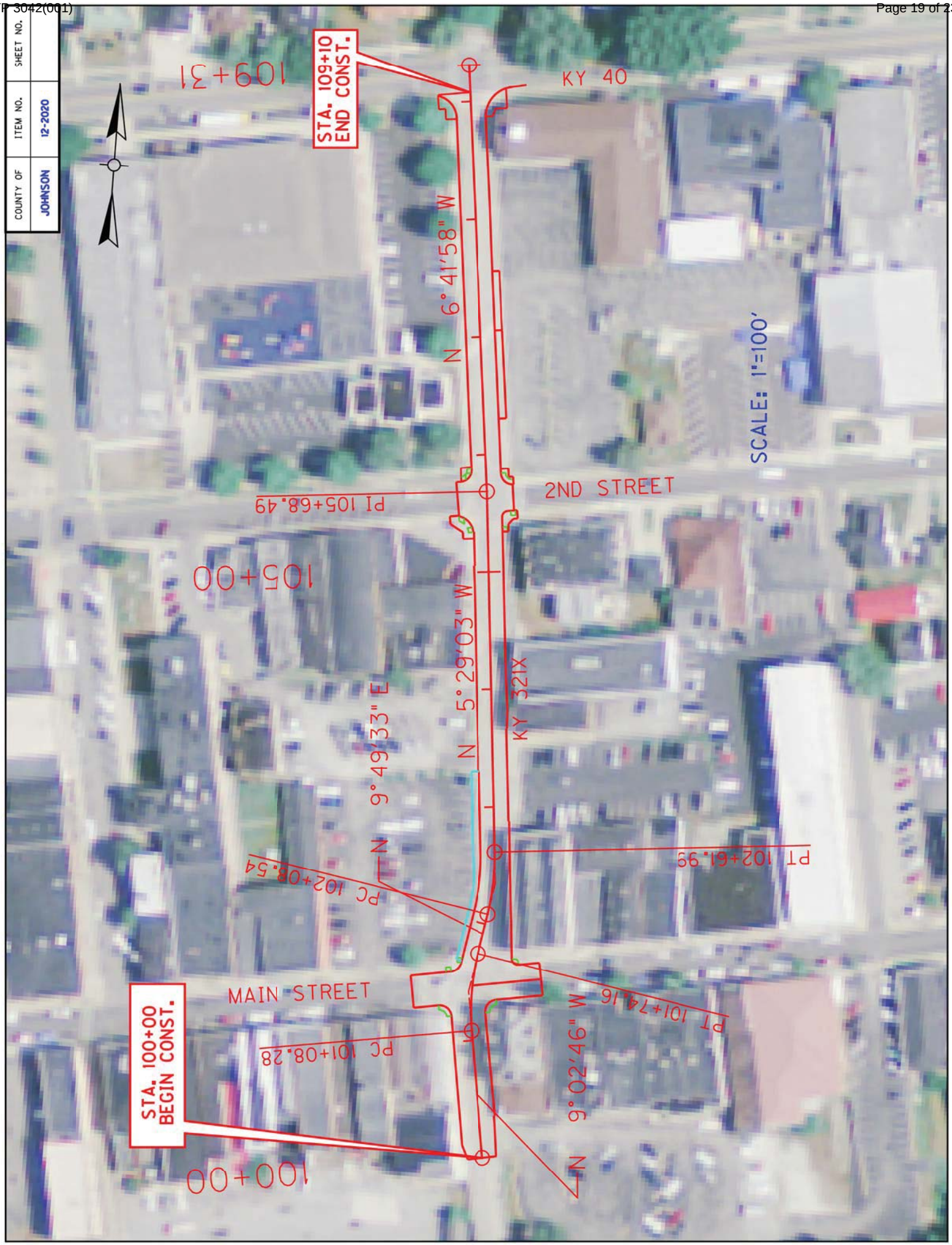
ITEM NUMBER: 12–2020.00 **LETTING DATE:** _____

RECOMMENDED BY: _____ **DATE:** _____
Project Manager

PLAN APPROVED BY: _____ **DATE:** _____
State Highway Engineer

FHWA APPROVED BY: _____ **DATE:** _____

HMB PROFESSIONAL ENGINEERS, INC
3 HMB Circle, U.S. 460
Frankfort, KY 40601
502-692-9800


COUNTY OF
JOHNSON
ITEM NO.
12-2020
SHEET NO.
109+31
STA. 109+10
END CONST.
KY 40
N 6°41'58" W
SCALE: 1"=100'
2ND STREET
PI 105+68.49
105+00
N 5°29'03" W
KY 321X
9°49'33" E
N
PC 102+08.54
PT 102+61.99
MAIN STREET
STA. 100+00
BEGIN CONST.
PC 101+08.28
PT 101+74.16
9°02'46" W
N
100+00

KY Route 321X Resurfacing Project On College & Third Streets

Utilities Involved in the City of Paintsville:

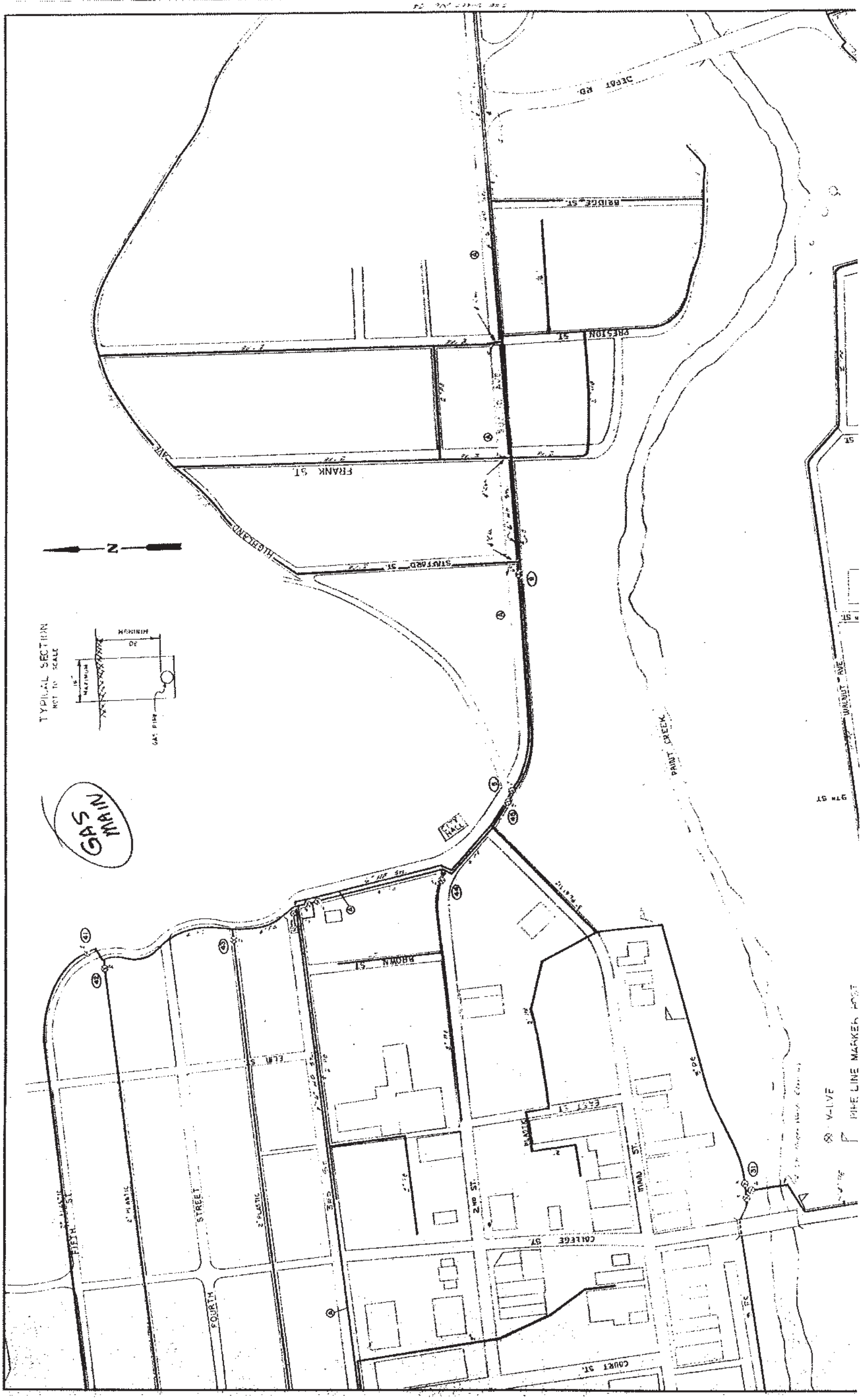
City of Paintsville Utilities – Water – Gas – Sewer
P.O. Box 630
Paintsville, KY 41240
ATTN: Rick Meece (rdmeece@hotmail.com)
Work – 606-789-2630

City of Paintsville – Storm Sewer System
P.O. Box 1588
Paintsville, KY 41240
ATTN: Mayor Bob Porter
Office 606-789-2600

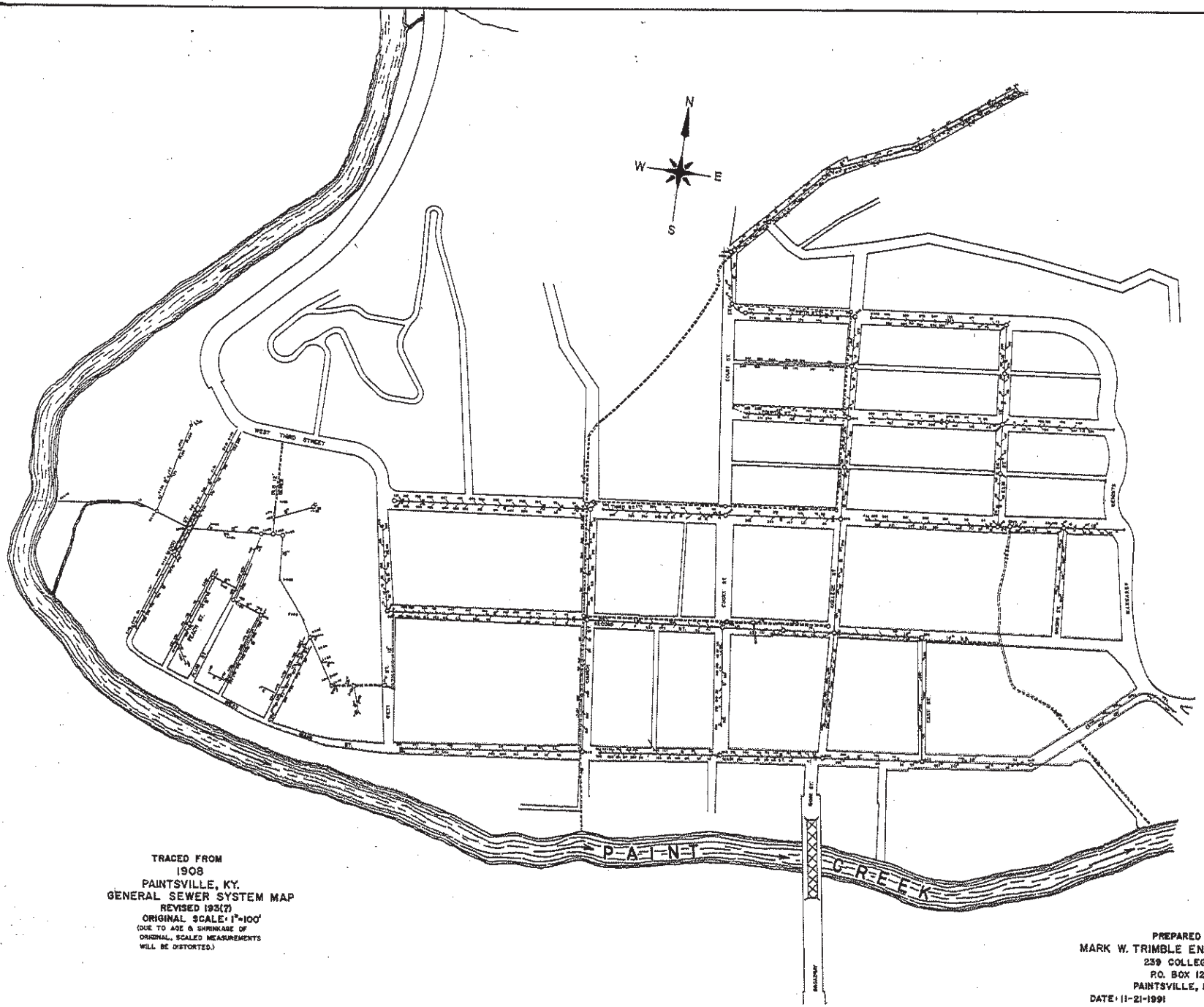
Kentucky Power Company
3249 North Mayo Trail
Pikeville, KY 41501
ATTN: Bill Johnson (wmjohnson@aep.com)
Work – 606-437-3823
Mobile – 606-794-7381

AT&T of KY
29 Willis Branch Rd
Prestonsburg, KY 41653
ATTN: Jack Salyer (jack.salyer@bellsouth.com)
Work – 606-874-2715
Mobile – 606-424-9328

SuddenLink Communications
County Route 5
Mt. Gaye, WV 25637
ATTN: Dave Cyfers (Melvin.cyfers@suddenlink.com)
Mobile – 304-533-9256


GAS MAIN
TYPICAL SECTION
NOT TO SCALE
GAS PIPE
N
PAINT CREEK
WALNUT AVE
9TH ST
DEPOT RD.
BRIDGE ST.
PRESTON ST.
FRANK ST.
STAFFORD ST.
HIGHLAND AVE
CITY HALL
BROWN ST.
ELM ST.
EAST ST.
COLLEGE ST.
COURT ST.
FIFTH ST.
FOURTH STREET
3RD ST.
2ND ST.
MAIN ST.
VALVE
PIPE LINE MARKER POST


"MAYO TANK"
WATER STORAGE RESERVOIR
CAPACITY ---- 500,000 GAL
OVERFLOW ELEV---- 816.10
WATER MAIN
PAINTSVILLE, KY
MAYO VOC. SCHOOL
PAINTSVILLE HIGH SCHOOL
CITY HALL
COUNTY COURT HOUSE
POST OFFICE
1st National Bank
City Parking Lot
FOOT-BRIDGE
CREEK
SCALE
FIFTH ST.
FOURTH ST.
THIRD STREET
SECOND STREET
MAIN STREET
COURT STREET
EAST COLLEGE ST.
WEST MAIN
MILL ST.
BROWN ST.
MARGARET HEIGHTS AVE.
HIGHLAND AVE.
EUCLID AVE.
STAFFORD AVE.
ELM ST.
CHURCH ST.
HAPPY HOLLOW RD.
ALLEY
WALNUT



SEWER MAIN
&
STORM SEWER DRAIN

TRACED FROM
1908
PAINTSVILLE, KY.
GENERAL SEWER SYSTEM MAP
REVISED 1937(?)
ORIGINAL SCALE: 1"=100'
(DUE TO AGE & SHRINKAGE OF ORIGINAL, SCALED MEASUREMENTS WILL BE DISTORTED.)

PREPARED BY
MARK W. TRIMBLE ENGINEERING, INC.
239 COLLEGE ST.
P.O. BOX 1218
PAINTSVILLE, KY. 41240
DATE: 11-21-1991 TRACED BY: JLS.

KENTUCKY TRANSPORTATION CABINET
Department of Highways
DIVISION OF MAINTENANCE

TC 71-14
Rev. 03/2009
Page 1 of 1

CONSENT AND RELEASE

SECTION 1: LOCATION INFORMATION

COUNTY	ROUTE #	MILE POINT		
JOHNSON	KY 321X	0.151 to 0.333		
ROAD NAME	**ADDRESS**	**CITY**	**STATE**	**ZIP**
COLLEGE STREET		PAINTSVILLE	KY	41240

SECTION 2: AGREEMENT

WHEREAS, the Transportation Cabinet, Commonwealth of Kentucky, in order to protect Highway No. 321X finds it necessary to do the following work:

Access property owned by the City of Paintsville by temporary easement to reconstruct sections of KY 321X. This will allow for a safer and more ease of public travel in this area. All disturbed areas will be constructed by the Department Standards. After reconstruction, a portion of KY 321X will remain on the City of Paintsville's property and the Commonwealth of Kentucky will have the right and easement to perpetually maintain the portions of KY 321X than lie on city property.

The work will be done on the land of:

City of Paintsville

NOW, THEREFORE, in consideration of the above and the incidental benefits accruing to the property, I hereby consent and agree that the Transportation Cabinet may come upon the above property and do the work as set out above, and do further agree that I will assert no claim for damages against the Transportation Cabinet by reason of said work, but by these presents shall be forever barred.

DATE 4-4-14

PROPERTY OWNER Bob Porter

Mayor, City of Paintsville
PROPERTY OWNER

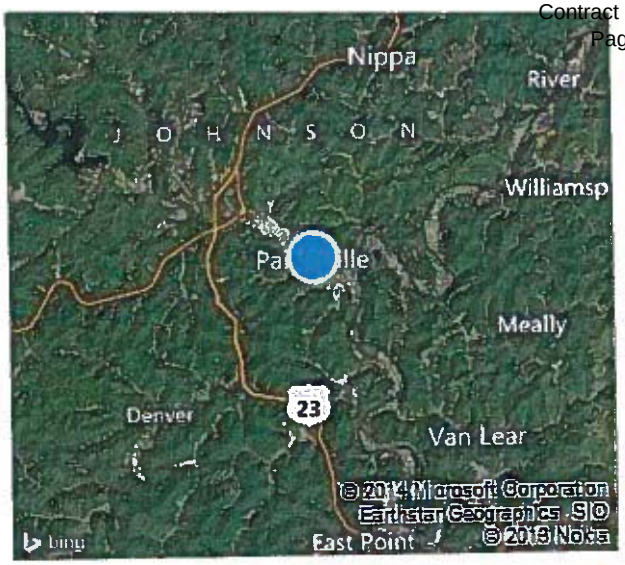
WITNESS (*county superintendent/designated representative*) Jim Spencer

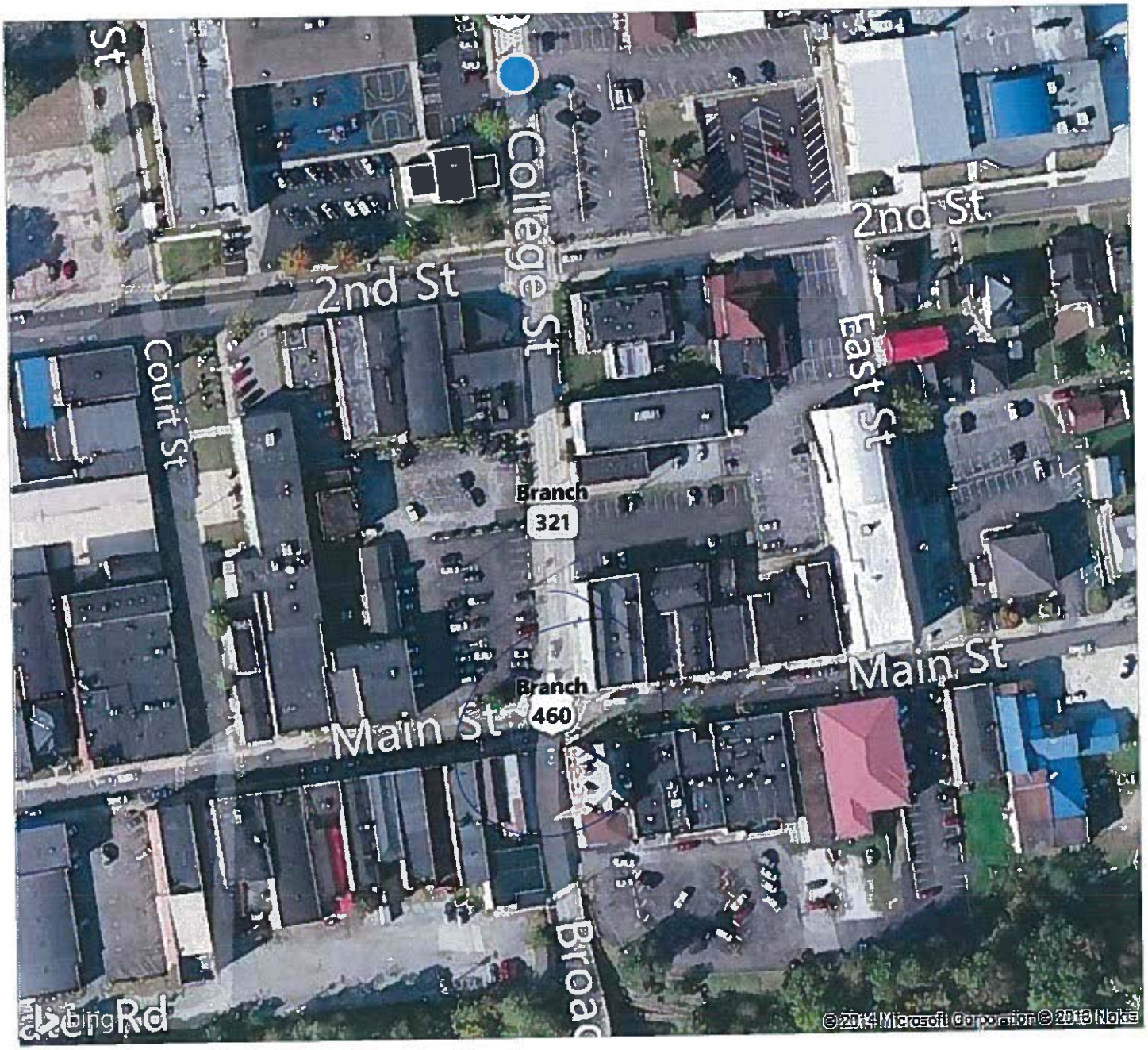
APPROVED (*chief district engineer*) Mary Ann Pack-Hall 4-7-14

Paintsville, KY

My Notes

On the go? Use **m.bing.com** to find maps, directions, businesses, and more





KY 321X
JOHNSON COUNTY
MILEPOST 0.100 TO 0.333
ITEM NO. 12–2020
GENERAL SUMMARY

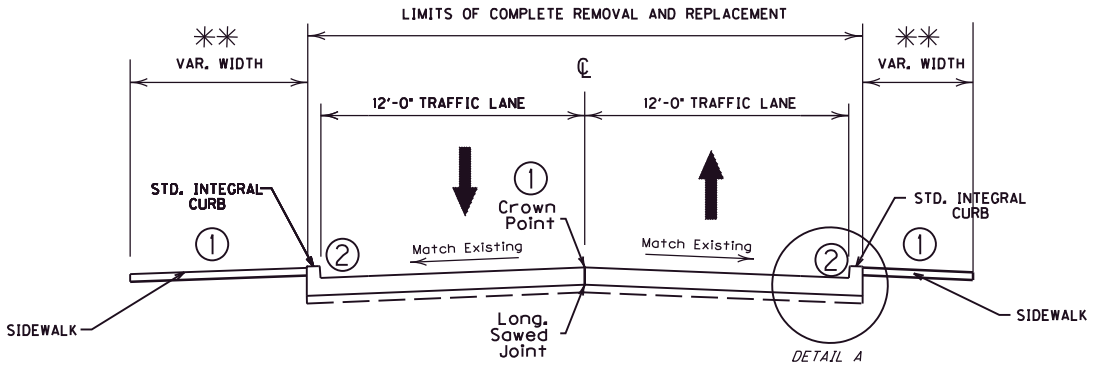
ITEM NUMBER	ITEM	UNIT	QUANTITY
1	DGA BASE	TON	818
2073	JPC PAVEMENT-9 IN	SQ YD	3,020
1830	STANDARD INTEGRAL CURB	LIN FT	2,400
1876	STANDARD HEADER CURB - MOD	LIN FT	164
24110EC	PERM PAINT - BARRIER CURB	LIN FT	2,400
2101	CEM CONC ENTRANCE PAVEMENT	SQ YD	152
23158ES505	DETECTABLE WARNINGS	SQ FT	312
2720	SIDEWALK- 4 IN CONCRETE	SQ YD	445
2721	REMOVE CONCRETE SIDEWALK	SQ YD	296
2058	REMOVE PCC PAVEMENT	SQ YD	3,020
1902	REMOVE INTEGRAL CURB	LIN FT	2,400
3425	ADJUST WATER VALVE	EACH	3
3260	CLEAN ROADWAY DRAINS	EACH	10
24543EC	CLEAN	LIN FT	510
20904ED	RECONSTRUCT CURB BOX INLET	EACH	2
3383	PVC PIPE - 4 IN	LIN FT	12
1720	RECONSTRUCT INLET	EACH	6
0522	STORM SEWER PIPE - 18 IN	LIN FT	100
1204	PIPE CULVERT HEADWALL - 18 IN	EACH	1
2484	CHANNEL LINING CLASS III	TON	40
2555	CONCRETE CLASS B	CU YD	4
23143ED	KPDES PERMIT & TEMPORARY EROSION CONTROL	LP SUM	1
5990	SODDING	SQ YD	40
6551	PAVE STRIPING-TEMP REM TAPE-Y (4 IN)	LIN FT	3,200
6554	PAVE STRIPING-DUR TY I-4 IN W	LIN FT	200
6555	PAVE STRIPING-DUR TY I-4 IN Y	LIN FT	1,604
23269ES717	PAVE MARK TY I TAPE-COMBO ARROW	EACH	6
23270ES717	PAVE MARK TY I TAPE-CURV ARROW	EACH	2
23264ES717	PAVE MARK TY I TAPE X-WALK-12 IN	LIN FT	871
23252ES717	PAVE MARK TY I TAPE STOP BAR-12 IN	LIN FT	108
24133EC	INSTALL WIRELESS SENSOR SYSTEM	EACH	3
4844	CABLE-NO. 14/5C	LIN FT	800
4793	CONDUIT 1 1/4 IN (RS)	LIN FT	125
4793	CONDUIT 2 IN (RS)	LIN FT	250
4811	ELECTRICAL JUNCTION BOX TYPE B	EACH	3
4820	TRENCHING AND BACKFILLING	LIN FT	250
20093NS835	INSTALL PEDESTRIAN HEAD LED	EACH	8
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH	8
23222EC	INSTALL SIGNAL PEDESTAL	EACH	4

KY 321X
JOHNSON COUNTY
MILEPOST 0.100 TO 0.333
ITEM NO. 12–2020
GENERAL SUMMARY

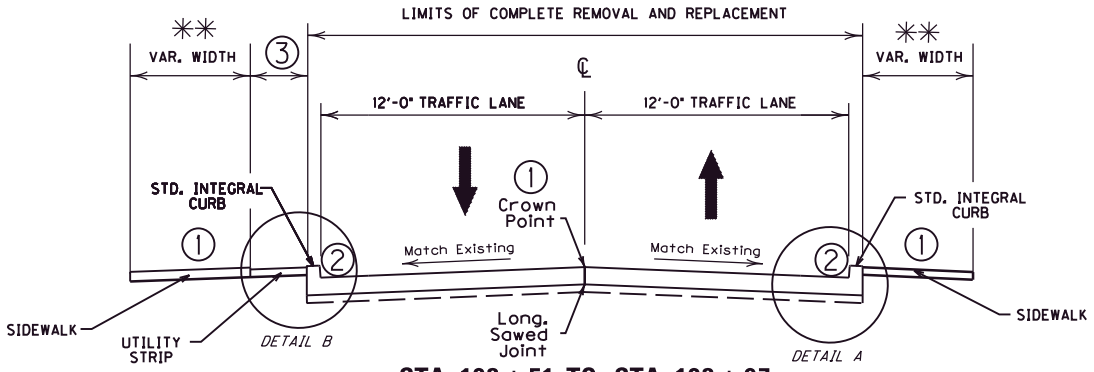
ITEM NUMBER	ITEM	UNIT	QUANTITY
24688EC	REMOVE AND REINSTALL (CLOCK)	LP SUM	1
1792	ADJUST MANHOLE	EACH	1
2726	STAKING	LP SUM	1
2014	BARRICADE TYPE III	EACH	14
2562	TEMPORARY SIGNS	SQ FT	240
2671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2
2650	MAINTAIN AND CONTROL TRAFFIC	LP SUM	1
2568	MOBILIZATION	LP SUM	1
2569	DEMOBILIZATION	LP SUM	1

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	

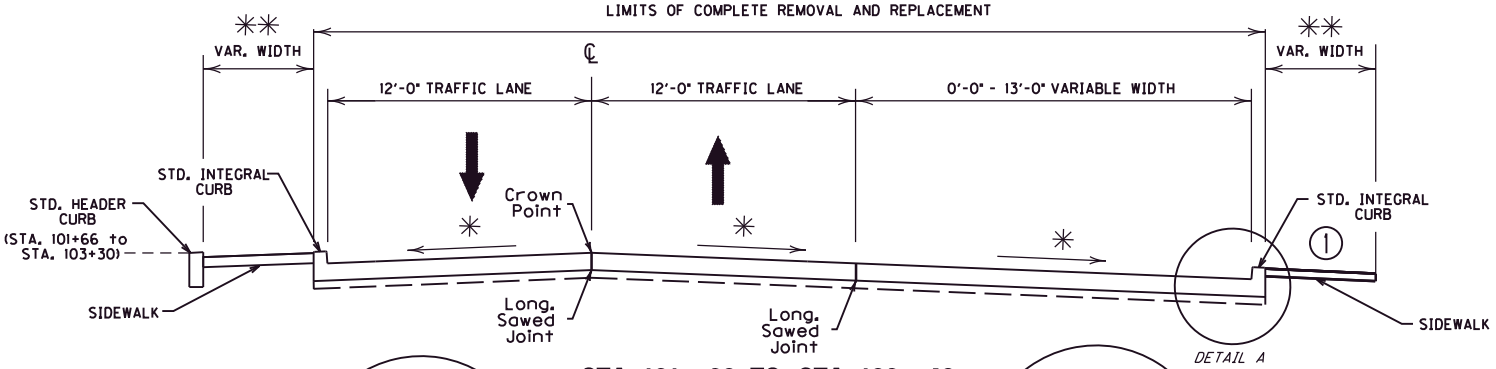
TYPICAL SECTIONS



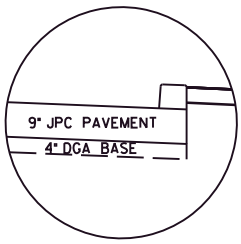
STA. 100 + 00 TO STA. 101 + 20
STA. 102 + 40 TO STA. 103 + 51
STA. 103 + 97 TO STA. 104 + 58
STA. 105 + 04 TO STA. 105 + 96



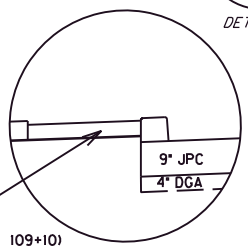
STA. 103 + 51 TO STA. 103 + 97
STA. 104 + 58 TO STA. 105 + 04
STA. 105 + 96 TO STA. 109 + 10



STA. 101 + 20 TO STA. 102 + 40



DETAIL A



GRASS (STA. 105+96 to STA. 109+10)
REPLACE W/SOD (STA. 103+51 to STA. 103+97) AND (STA. 104+58 to STA. 105+04)

DETAIL B

① MATCH EXISTING ELEVATIONS

② MATCH EXISTING GUTTER LINE ELEVATIONS

③ 2' 6" to 3' 0" FROM STA 105+96 TO 109+10
1' 6" FROM STA 103+51 TO 103+97 AND
STA 104+58 TO 105+04.

✳ SEE PAVEMENT DEVELOPMENT SHEET

✳✳ MATCH EXISTING WIDTH OF SIDEWALK EXCEPT FOR LT. STA. 101+20 TO STA. 104+16 SEE PLAN SHEET

SURFACING SCHEDULE

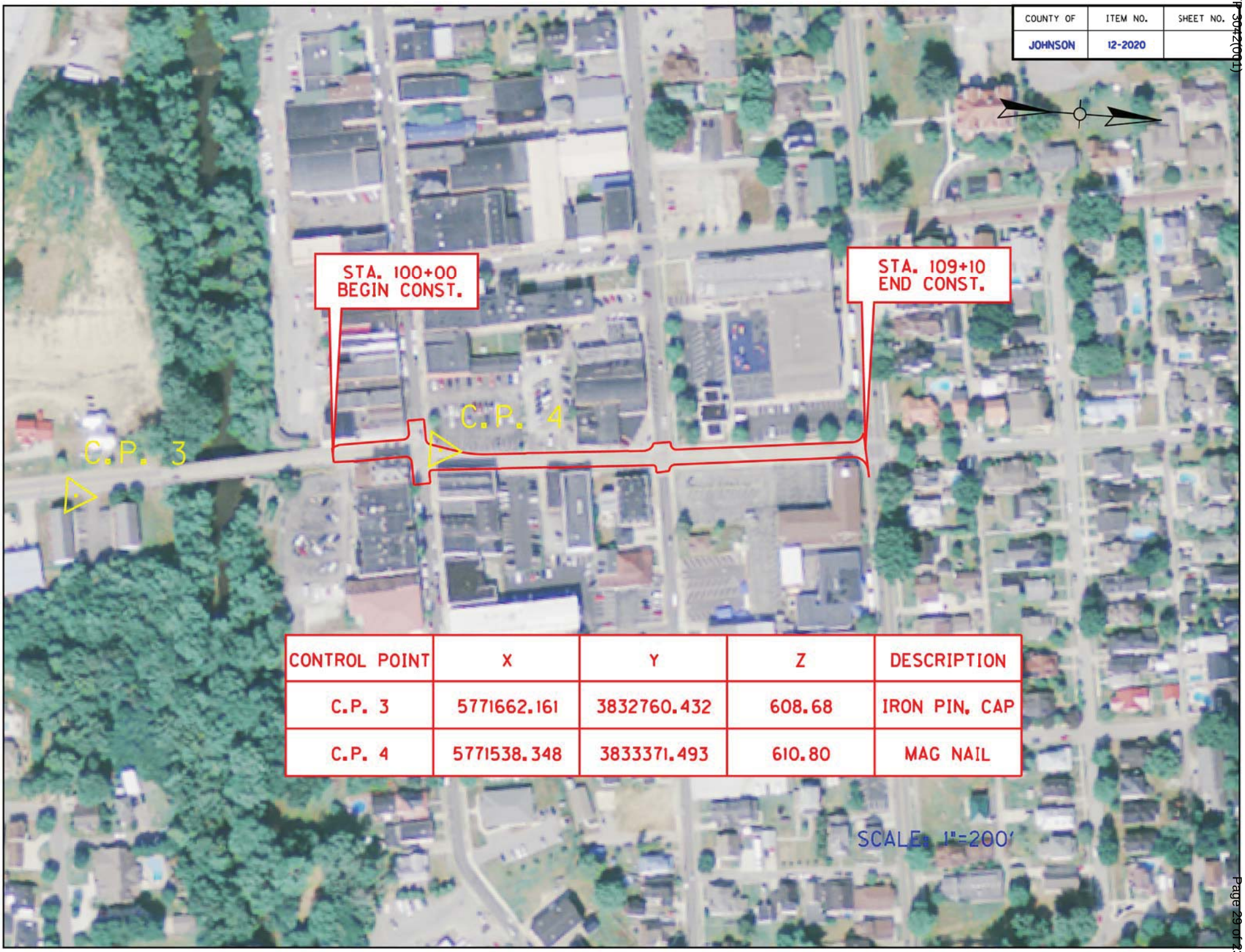
MAINLINE TRAFFIC LANES

JPC PAVEMENT - 9 IN
DGA BASE .....4 IN DEPTH

NOT TO SCALE

TYPICAL SECTIONS

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	



CONTROL POINT	X	Y	Z	DESCRIPTION
C.P. 3	5771662.161	3832760.432	608.68	IRON PIN, CAP
C.P. 4	5771538.348	3833371.493	610.80	MAG NAIL

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	

SIDEWALK RAMP		SQ YDS
LT	STA 101+25	6
LT	STA 101+57	2
LT	STA 101+65	2

CONSTR. SIDEWALK - 4 IN
LOCATION SQ YD
LT STA 100+00 TO 100+65 53

CONSTR. SIDEWALK - 4 IN - TRANS. 4'-6'
LOCATION SQ YD
LT STA 102+29 TO 102+59 17

CONSTR. SIDEWALK - 4 IN - 4'
LOCATION SQ YD
LT STA 101+66 TO 102+29 28

STA. 100+00
BEGIN CONST.

BEGIN PROJECT:
X - 5771560.575
Y - 3833189.972

N 9°02'46" W

N 9°49'33" E

Top=610.61
15" RCP
IE=606.10

100+00

Top=611.49
15" RCP
IE=608.52

101+00

10' R

PI 101+41.52

TOP=610.62

10' R

GRATE
Top=609.81
15" RCP
IE=607.20

CONSTR. CONCRETE ENTRANCE
LOCATION TYPE SQ YD
RT STA 100+18 COM 29

PC 101+08.28

PT 101+74.15

5' R

STA. 101+46.48
MAIN STREET

	X	Y
PC	5771469.18	3834294.14
PT	5771469.62	3834359.71
PI	5771538.32	3833329.73

SIDEWALK RAMP		SQ YDS
RT	STA 101+29	6
RT	STA 101+75	3

RECONSTRUCT INLET

RT	STA 100+08
LT	STA 101+53
LT	STA 103+28

CONSTR. SIDEWALK - 4 IN
LOCATION SQ YD
RT STA 101+71 TO 102+24 46

CONSTR. SIDEWALK - 4 IN
LOCATION SQ YD
LT STA 102+59 TO 103+30 48

CONSTR. SIDEWALK - 4 IN
LOCATION SQ YD
RT STA 102+74 TO 102+88 8

CONSTR. SIDEWALK - 4 IN
LOCATION SQ YD
LT STA 103+50 TO 104+16 45

CONSTR. CONCRETE ENTRANCE
LOCATION TYPE SQ YD
LT STA 103+40 COM 13

DBOX
Top=607.89
12"RCP
IE=607.89

CONSTR. CONCRETE ENTRANCE
LOCATION TYPE SQ YD
RT STA 103+27 COM 65

PC 102+08.54

PT 102+61.99

102+00

103+00

104+00

C.P. 4

PI 102+35.42

N 5°29'03" W

6"PVC
IE=609.12

	X	Y
PC	5771475.49	3834393.59
PT	5771477.51	3834446.84
PI	5771554.45	3833422.85

MATCHLINE STA 105+00

SCALE: 1" = 50'

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	

JOHNSON COUNTY
STP 3042(001)

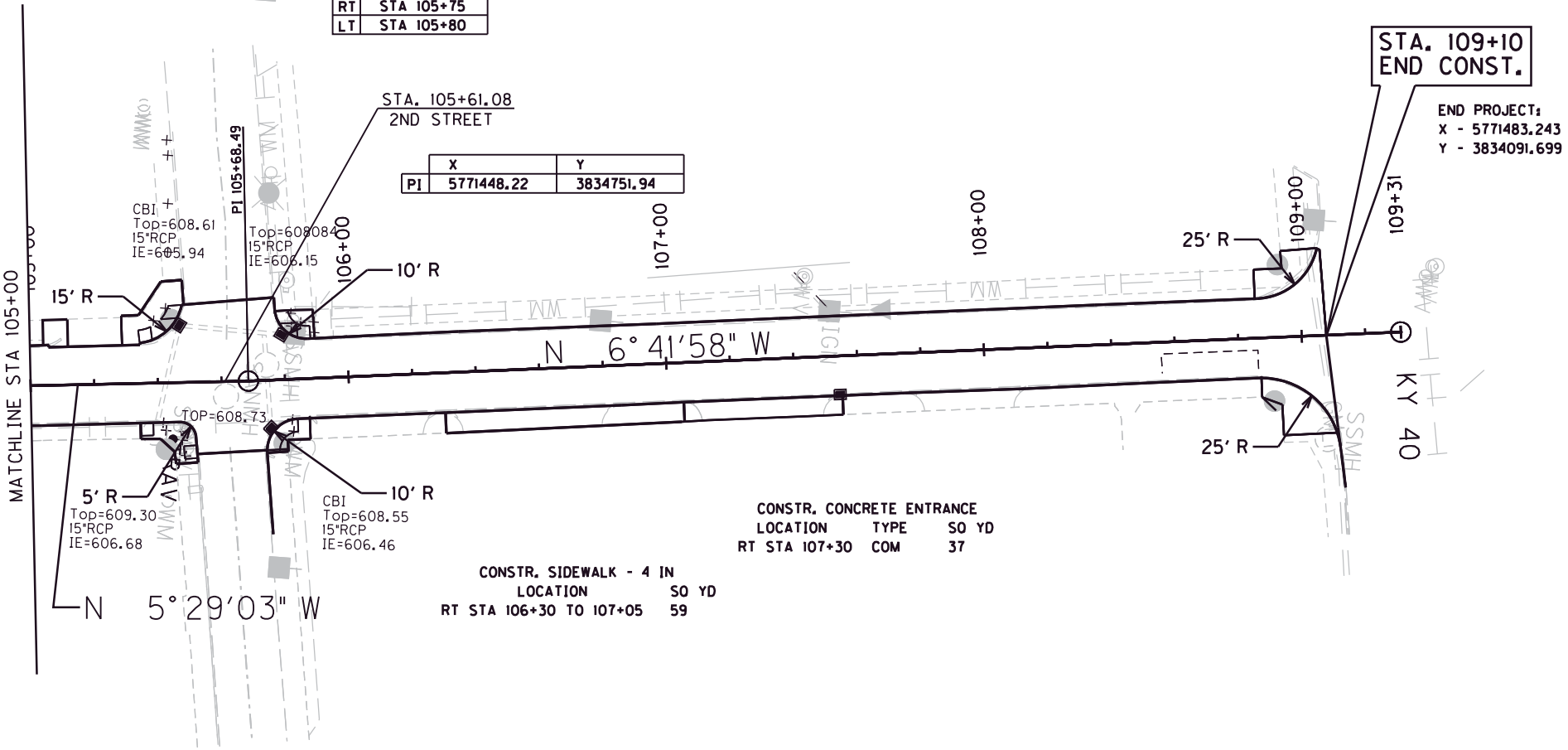
SIDEWALK RAMP		SQ YDS
LT	STA 105+39	27
LT	STA 105+84	10
LT	STA 108+96	20

CONSTR. CONCRETE ENTRANCE

LOCATION	TYPE	SQ YD
LT STA 105+08	COM	8

RECONSTRUCT INLET

LT	STA 105+57
RT	STA 105+75
LT	STA 105+80



	X	Y
PI	5771448.22	3834751.94

CONSTR. CONCRETE ENTRANCE

LOCATION	TYPE	SQ YD
RT STA 107+30	COM	37

CONSTR. SIDEWALK - 4 IN

LOCATION	SQ YD
RT STA 106+30 TO 107+05	59

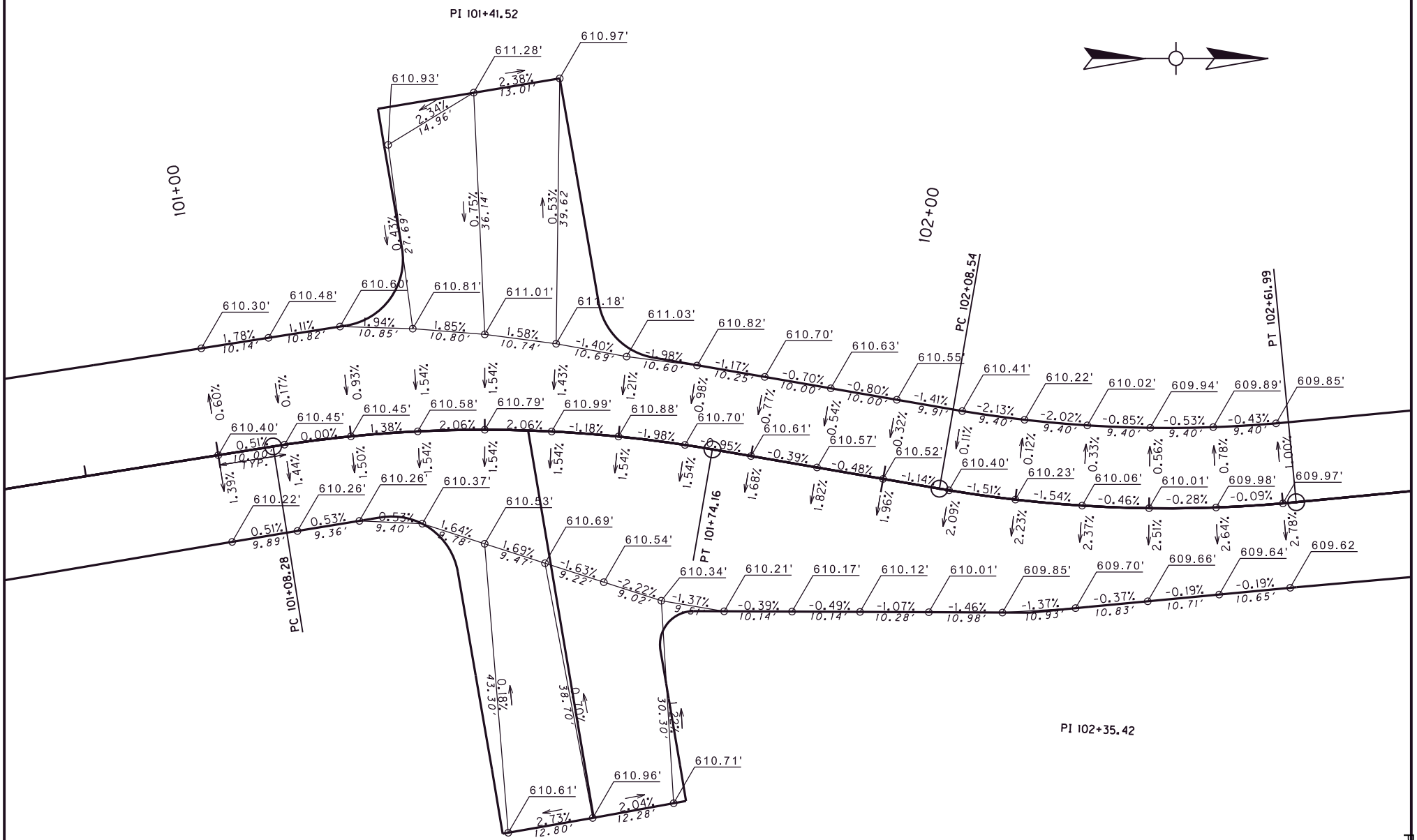
SIDEWALK RAMP		SQ YDS
RT	STA 105+43	17
RT	STA 105+81	11
RT	STA 108+98	27

SCALE: 1" = 50'

Contract ID: 141066
Page 31 of 237

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	___

PAVEMENT DEVELOPMENT SHEET

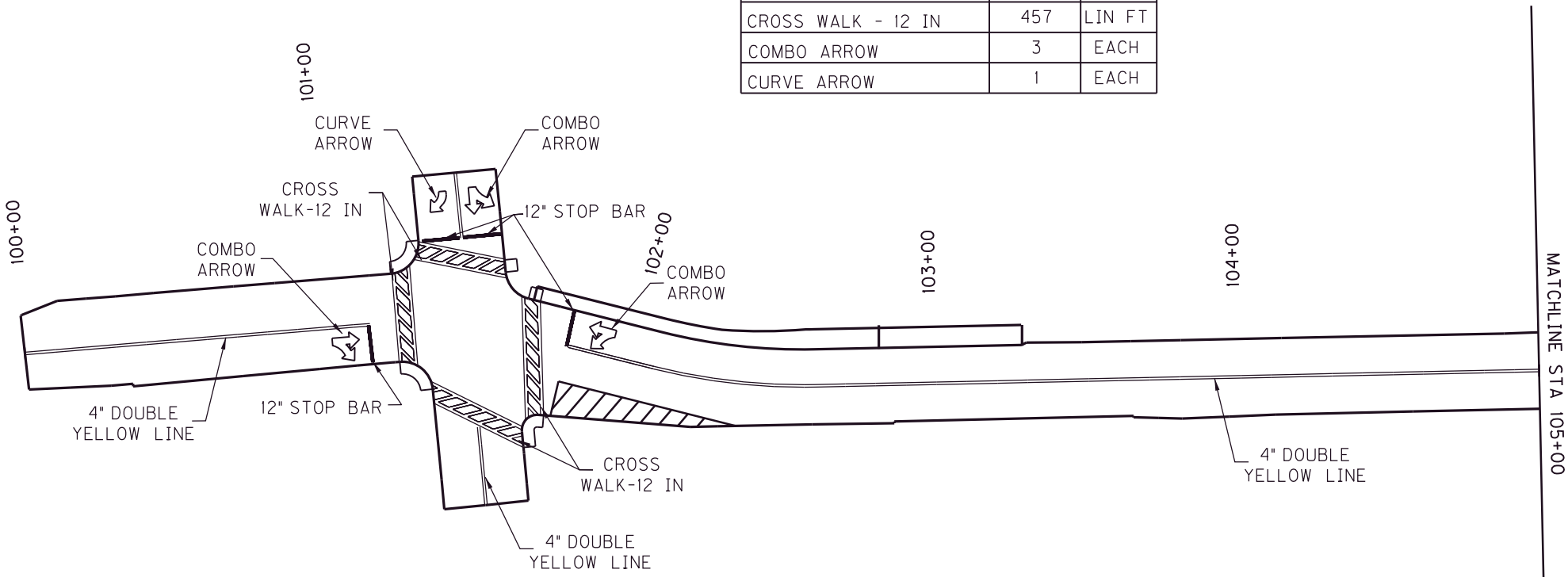


PAVEMENT DEVELOPMENT

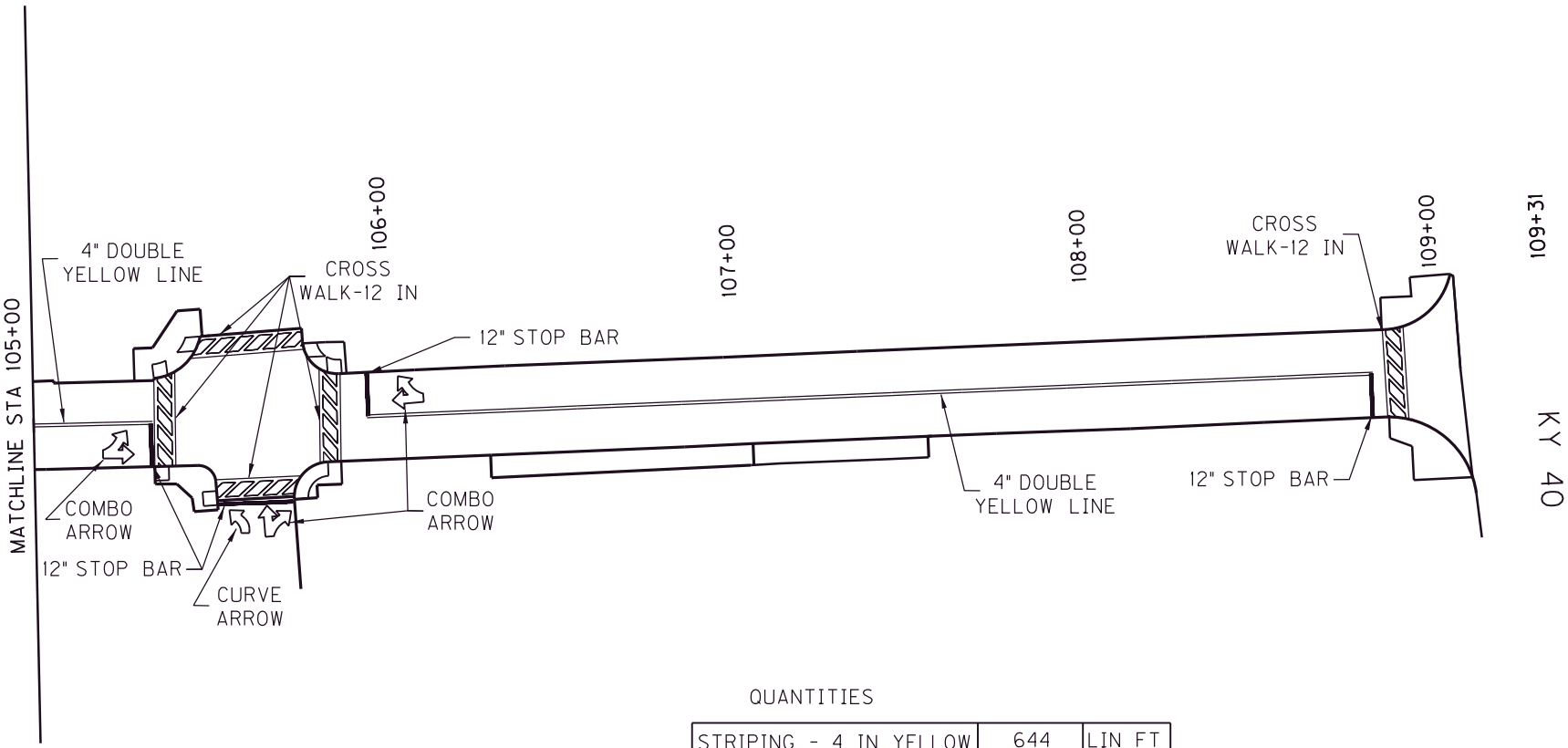
COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	

QUANTITIES

STRIPING - 4 IN YELLOW	960	LIN FT
STOP BAR - 12 IN	51	LIN FT
CROSS WALK - 12 IN	457	LIN FT
COMBO ARROW	3	EACH
CURVE ARROW	1	EACH



COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	

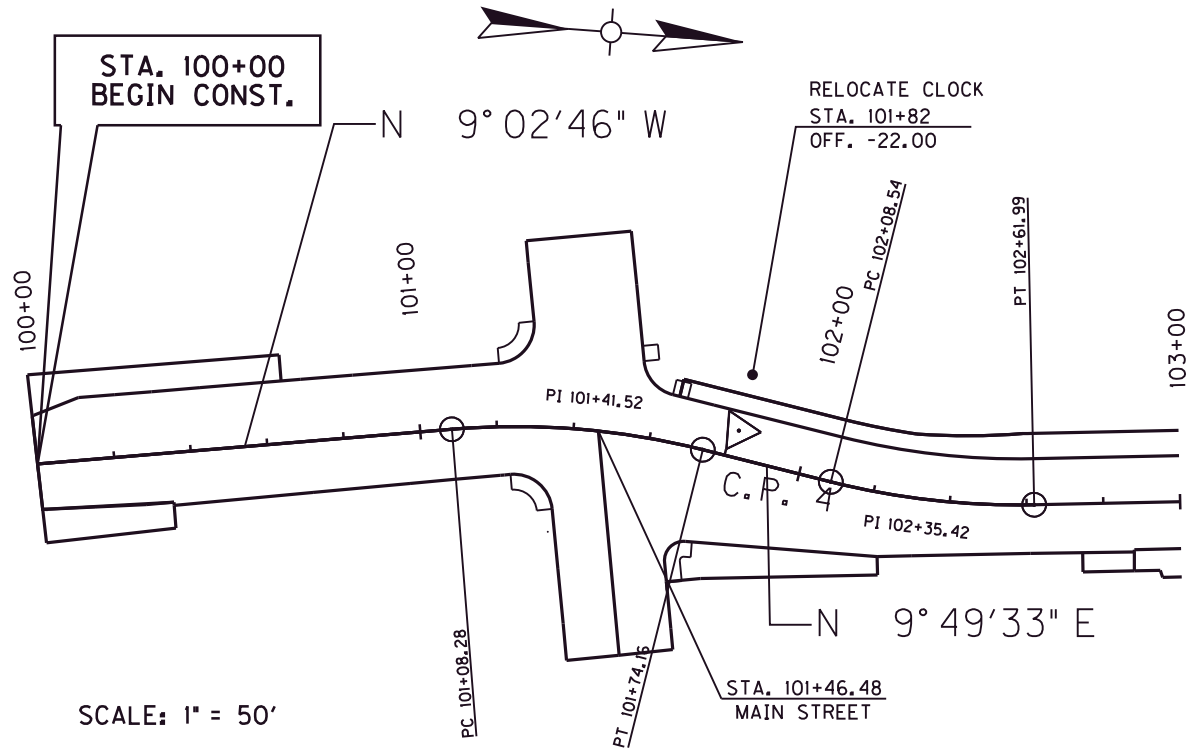


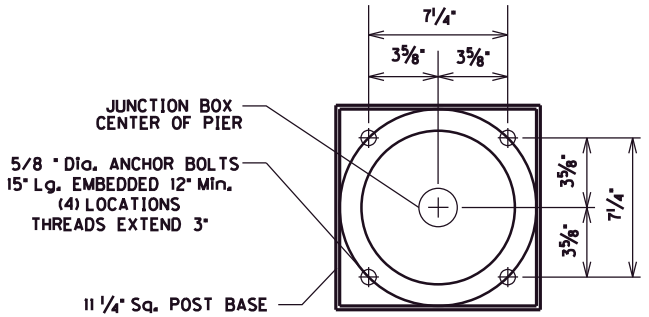
QUANTITIES

STRIPING - 4 IN YELLOW	644	LIN FT
STOP BAR - 12 IN	57	LIN FT
CROSS WALK - 12 IN	414	LIN FT
COMBO ARROW	3	EACH
CURVE ARROW	1	EACH

STRIPING PLAN

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020	



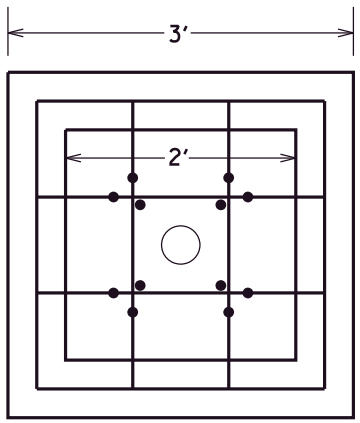


NOTE: EACH BOLT REQUIRES (2) HEXNUTS & A WASHER

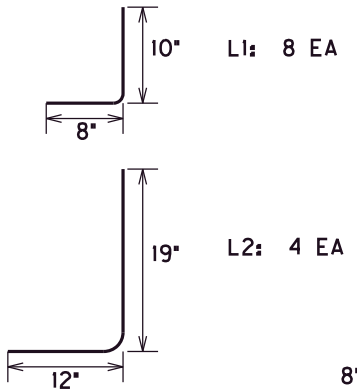
SPACE 8, NO. 5 BARS ON 10" C/C FOR FOOTER

SPACE 6, NO. 5 BARS ON 9" C/C FOR PEDESTAL

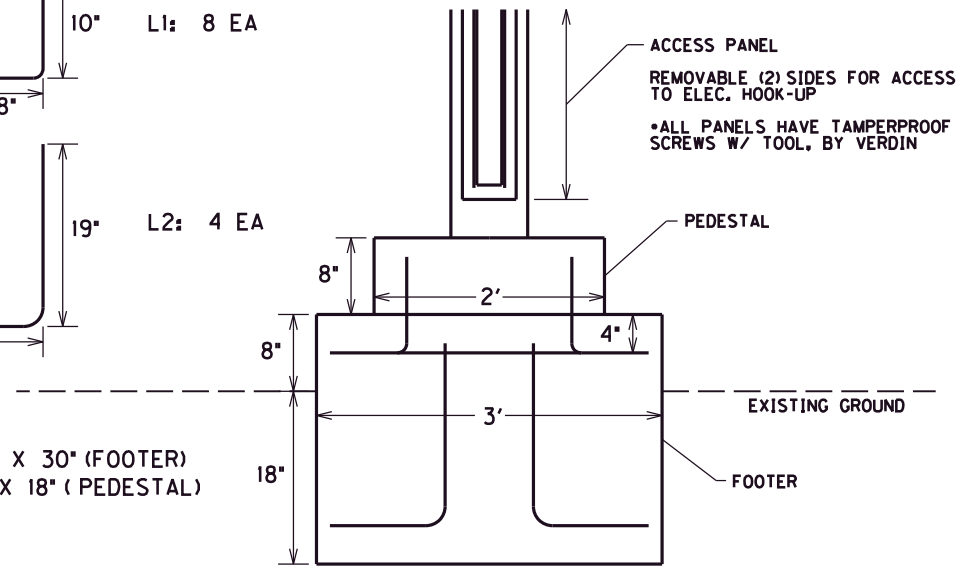
LOCATE 8, NO. 5 L BARS AS SHOWN

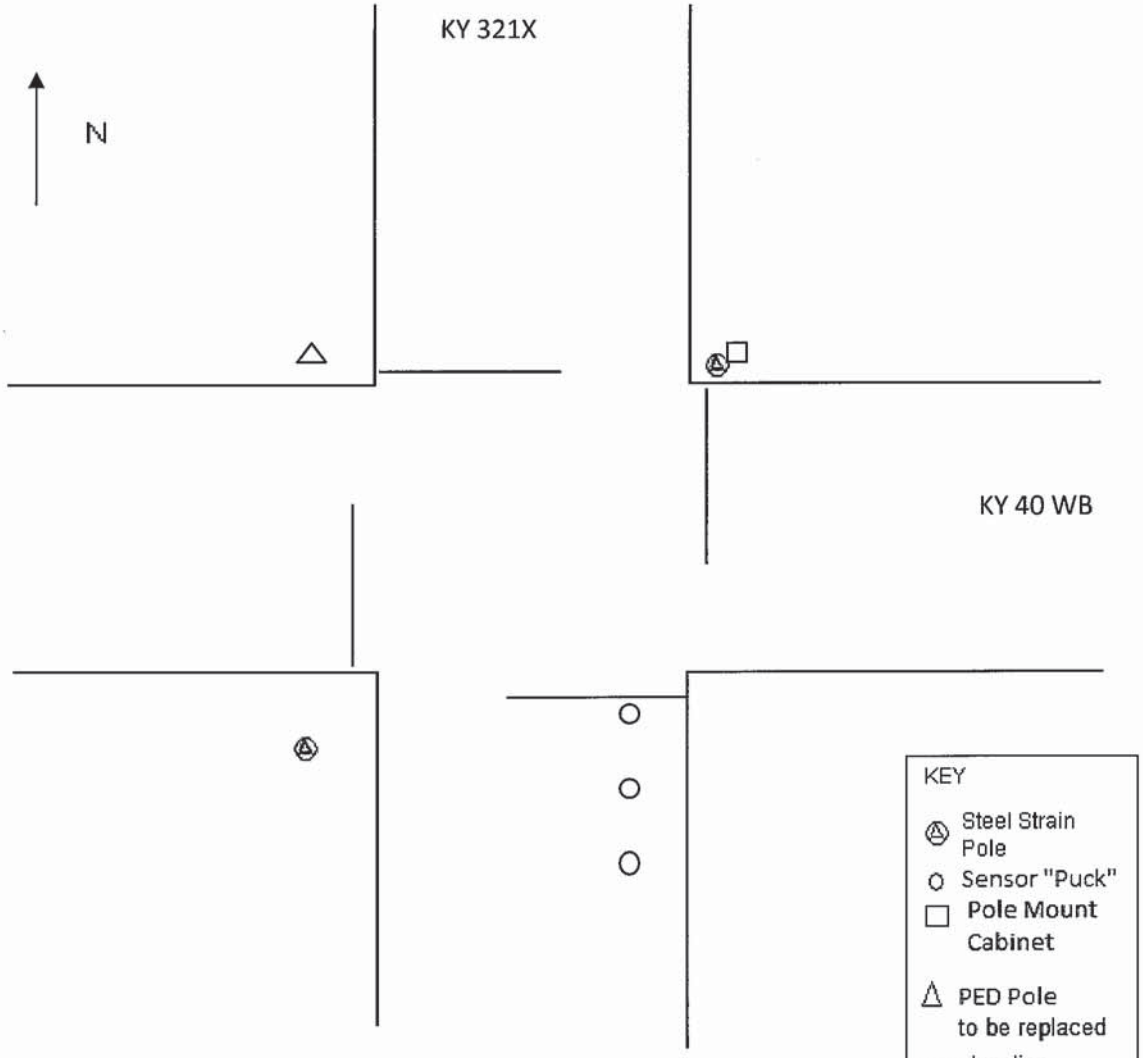


NOT TO SCALE



8 EA X 30" (FOOTER)
6 EA X 18" (PEDESTAL)





County	Johnson
Route	KY 40
Side Street	KY 321X
MP	10.975
Date	3/19/14

COMMENTS:

Install JCT box as needed.

The following items are to be installed with the Wireless Sensor System:

Remote Radio to be installed on cabinet pole.

Controller Card to be installed in cabinet.

Pucks installed on 321X as shown in drawing and described in note below.

Contractor shall notify District Traffic Engineer for coordination of pedestal pole and puck placements.

Bid item code	Bid item	Unit	EB Approach	WB Approach	NB Approach	SB Approach	Total
24133EC	Install Wireless Sensor System	Each	-	-	1	-	1
4844	Cable-No. 14/5C	LF	200	-	-	-	200
4793	Conduit 1 ¼" (RS)	LF	25	-	25	-	50
4795	Conduit 2" (RS)	LF	50	-	50	-	100
4811	Elect Junction Box Type B	Each	-	-	1	-	1
4820	Trenching & Backfilling	LF	50	-	50	-	100

Bid item code	Bid item	Unit	EB Approach	WB Approach	NB Approach	SB Approach	Total
20093NS835	Install Pedestrian Head LED	Each	2	-	-	-	2
21743NN	Install Pedestrian Detector	Each	2	-	-	-	2
23222EC	Install Signal Pedestal	Each	1	-	-	-	1

NOTE:

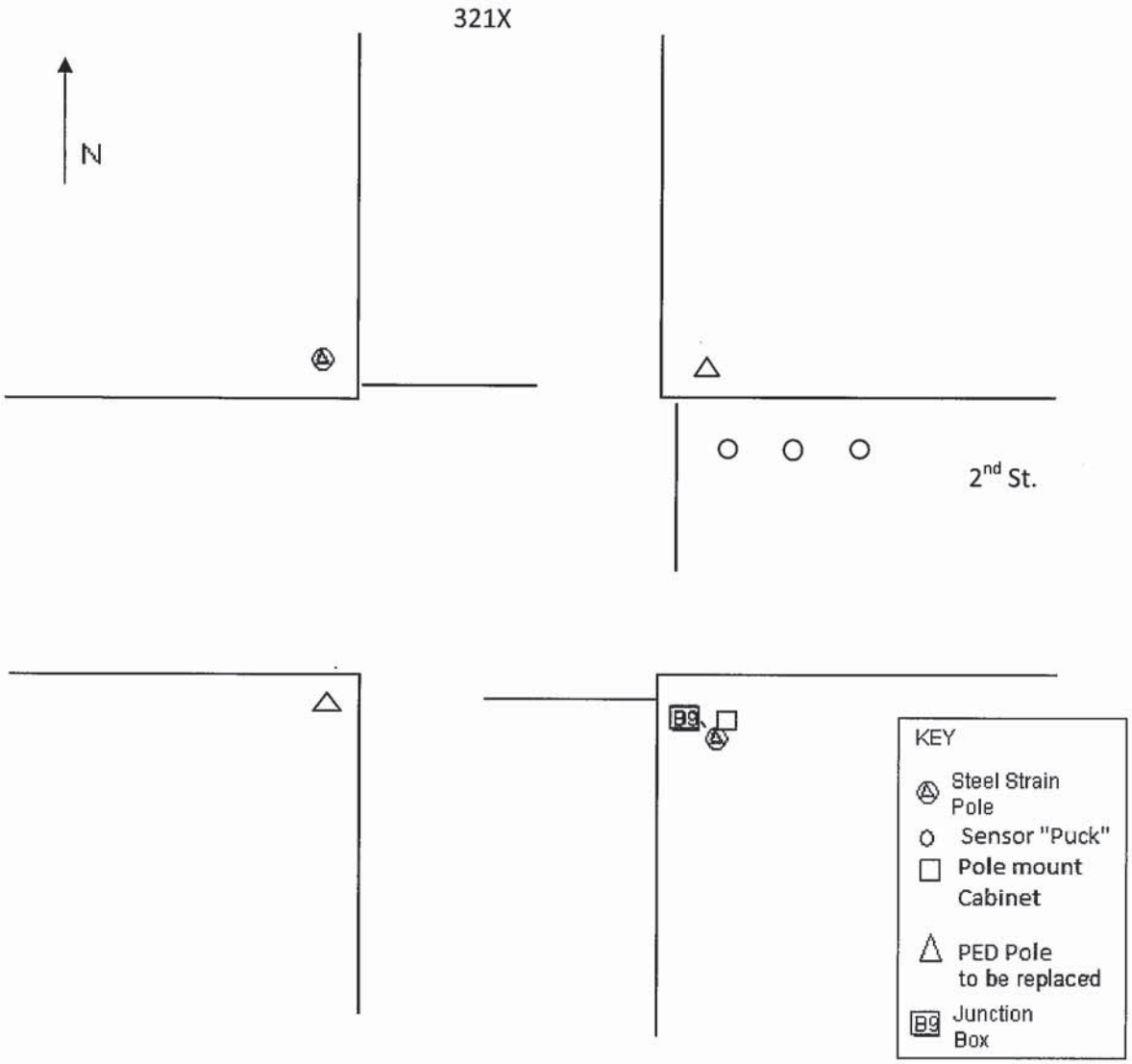
Install wireless sensor system shall include the installation of all sensor equipment for each individual intersection including but not limited to the access point, contact closure, access box, repeater, wireless sensors, mounting kit, and epoxy. This item shall also include equipment programming coordination with manufacturer including any fees charged by the manufacturer. The contractor shall furnish and install manufacturer specified cabling required to connect system for operation. The contractor shall furnish an intersection diagram and excel spreadsheet showing each sensor location and the associated sensor ID. This diagram shall be submitted as a drawing scanned in pdf format and emailed to Ted.swansegar@ky.gov before final inspection is requested. The manufacturer of the supplied sensor system shall be Sensys Networks.

CONSTRUCTION AND MEASUREMENT NOTES THAT ARE CONTRARY TO SECTION 723

SUBSECTION: 723.04.24 Install Pedestrian Head LED.
REVISION: Add the following sentence after the first sentence:
The Department will not measure the removal of existing pedestrian head or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work.

SUBSECTION: 723.04.31 Install Pedestrian Detector.
REVISION: Replace the second sentence with the following sentence:
The Department will not measure installing sign R 10-3e (with arrow), the removal of existing pedestrian detector and sign or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work.

SUBSECTION: 723.04.37 Install Signal Pedestal.
REVISION: Replace the second sentence with the following sentences:
The Department will not measure the excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or another necessary hardware. The Department also will not measure the removal of the existing pedestal and concrete base or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work. Removal of the pedestal base is as described here; remove a minimum of 1 foot below finished grade. Chipping off or other method that is approved by the engineer may be used. Contractor shall backfill hole with material approved by the engineer.



County	Johnson
Route	KY 321X
Side Street	2nd St.
MP	0.263
Date	3/19/14

COMMENTS:

Install JCT boxes as needed.

The following items are to be installed with the Wireless Sensor System:

Remote Radio to be installed on cabinet pole.

Controller Card to be installed in cabinet.

Pucks installed on 2nd Street as shown in drawing and described in note below.

Contractor shall notify District Traffic Engineer for coordination of pedestal pole and puck placements.

Bid item code	Bid item	Unit	EB Approach	WB Approach	NB Approach	SB Approach	Total
24133EC	Install Wireless Sensor System	Each	-	1	-	-	1
4844	Cable-No. 14/5C	LF	-	-	200	200	400
4793	Conduit 1 ¼"	LF	-	25	25	-	50
4795	Conduit 2" (RS)	LF	-	50	50	-	100
4811	Elect Junction Box Type B	Each	-	1	-	-	1
4820	Trenching & Backfilling	LF	-	50	50	-	100

Bid item code	Bid item	Unit	EB Approach	WB Approach	NB Approach	SB Approach	Total
20093NS835	Install Pedestrian Head LED	Each	-	-	2	2	4
21743NN	Install Pedestrian Detector	Each	-	-	2	2	4
23222EC	Install Signal Pedestal	Each	-	-	1	1	2

NOTE:

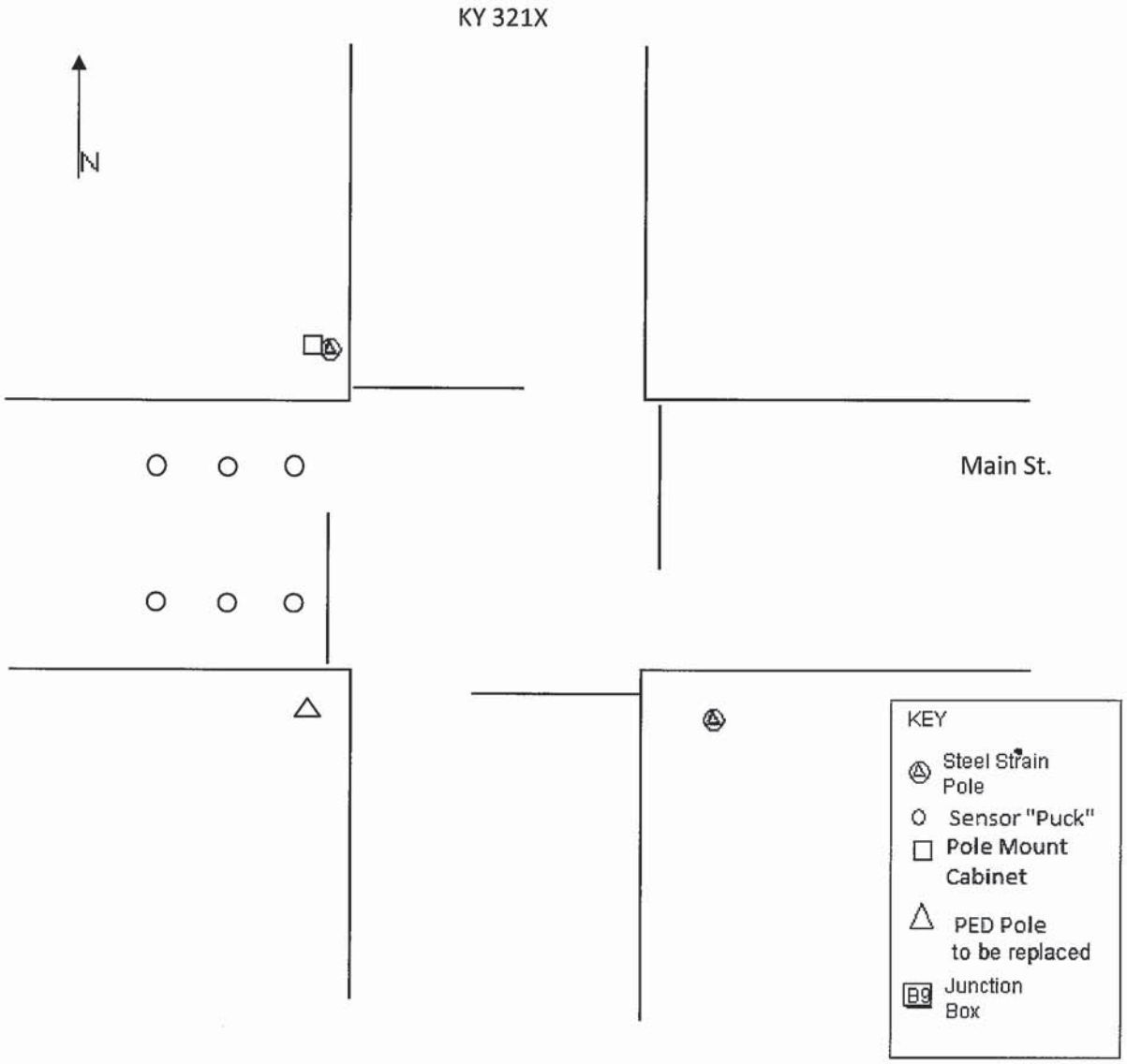
Install wireless sensor system shall include the installation of all sensor equipment for each individual intersection including but not limited to the access point, contact closure, access box, repeater, wireless sensors, mounting kit, and epoxy. This item shall also include equipment programming coordination with manufacturer including any fees charged by the manufacturer. The contractor shall furnish and install manufacturer specified cabling required to connect system for operation. The contractor shall furnish an intersection diagram and excel spreadsheet showing each sensor location and the associated sensor ID. This diagram shall be submitted as a drawing scanned in pdf format and emailed to Ted.swansegar@ky.gov before final inspection is requested. The manufacturer of the supplied sensor system shall be Sensys Networks.

CONSTRUCTION AND MEASUREMENT NOTES THAT ARE CONTRARY TO SECTION 723

SUBSECTION: 723.04.24 Install Pedestrian Head LED.
REVISION: Add the following sentence after the first sentence:
The Department will not measure the removal of existing pedestrian head or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work.

SUBSECTION: 723.04.31 Install Pedestrian Detector.
REVISION: Replace the second sentence with the following sentence:
The Department will not measure installing sign R 10-3e (with arrow), the removal of existing pedestrian detector and sign or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work.

SUBSECTION: 723.04.37 Install Signal Pedestal.
REVISION: Replace the second sentence with the following sentences:
The Department will not measure the excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or another necessary hardware. The Department also will not measure the removal of the existing pedestal and concrete base or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work. Removal of the pedestal base is as described here; remove a minimum of 1 foot below finished grade. Chipping off or other method that is approved by the engineer may be used. Contractor shall backfill hole with material approved by the engineer.



County	Johnson
Route	KY 321X
Side Street	Main
MP	0.206
Date	3/19/14

COMMENTS:

Install JCT box as needed.

The following items are to be installed with the Wireless Sensor System:

Remote Radio to be installed on cabinet pole.

Controller Card to be installed in cabinet.

Pucks on Main Street as shown in drawing and described in note below.

Contractor shall notify District Traffic Engineer for coordination of pedestal pole and puck placements.

Bid item code	Bid item	Unit	EB Approach	WB Approach	NB Approach	SB Approach	Total
24133EC	Install Wireless Sensor System	Each	1	-	-	-	1
4844	Cable-No. 14/5C	LF	-	-	200	-	200
4793	Conduit 1 ¼" (RS)	LF	25	-	-	-	25
4795	Conduit 2" (RS)	LF	50	-	-	-	50
4811	Elect Junction Box Type B	LF	1	-	-	-	1
4820	Trenching & Backfilling	LF	50	-	-	-	50

Bid item code	Bid item	Unit	EB Approach	WB Approach	NB Approach	SB Approach	Total
20093NS835	Install Pedestrian Head LED	Each	-	-	2	-	2
21743NN	Install Pedestrian Detector	Each	-	-	2	-	2
23222EC	Install Signal Pedestal	Each	-	-	1	-	1

NOTE:

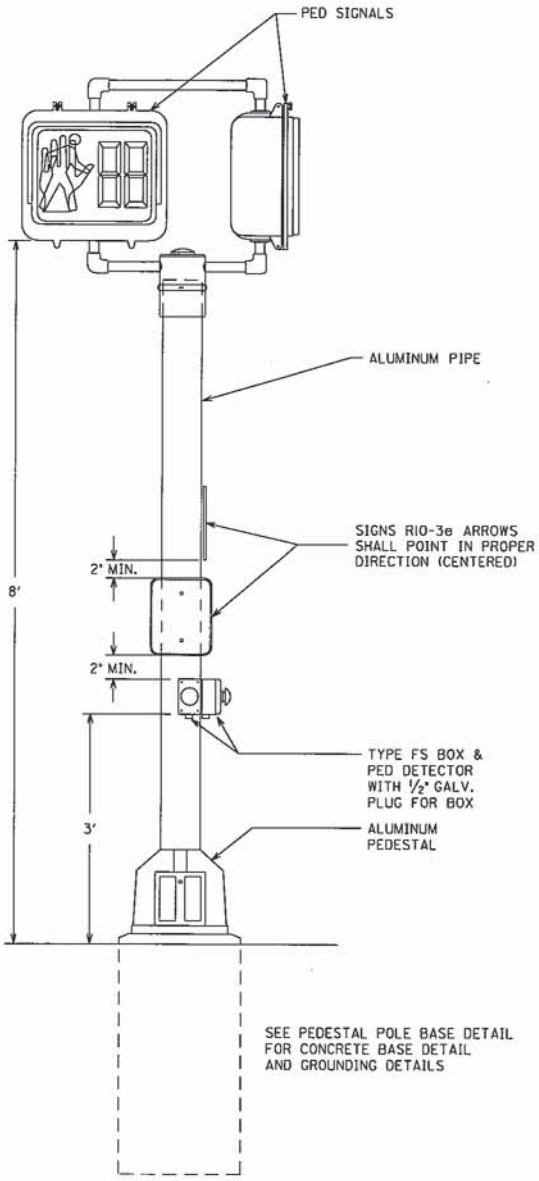
Install wireless sensor system shall include the installation of all sensor equipment for each individual intersection including but not limited to the access point, contact closure, access box, repeater, wireless sensors, mounting kit, and epoxy. This item shall also include equipment programming coordination with manufacturer including any fees charged by the manufacturer. The contractor shall furnish and install manufacturer specified cabling required to connect system for operation. The contractor shall furnish an intersection diagram and excel spreadsheet showing each sensor location and the associated sensor ID. This diagram shall be submitted as a drawing scanned in pdf format and emailed to Ted.swansegar@ky.gov before final inspection is requested. The manufacturer of the supplied sensor system shall be Sensys Networks.

CONSTRUCTION AND MEASUREMENT NOTES THAT ARE CONTRARY TO SECTION 723

SUBSECTION: 723.04.24 Install Pedestrian Head LED.
REVISION: Add the following sentence after the first sentence:
The Department will not measure the removal of existing pedestrian head or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work.

SUBSECTION: 723.04.31 Install Pedestrian Detector.
REVISION: Replace the second sentence with the following sentence:
The Department will not measure installing sign R 10-3e (with arrow), the removal of existing pedestrian detector and sign or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work.

SUBSECTION: 723.04.37 Install Signal Pedestal.
REVISION: Replace the second sentence with the following sentences:
The Department will not measure the excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or another necessary hardware. The Department also will not measure the removal of the existing pedestal and concrete base or the transportation/disposal of the materials off the project by the contractor and will consider them incidental to this item of work. Removal of the pedestal base is as described here; remove a minimum of 1 foot below finished grade. Chipping off or other method that is approved by the engineer may be used. Contractor shall backfill hole with material approved by the engineer.



CONTRACTOR SHALL DRILL HOLES IN THE PIPE AND THE TYPE FS BOX NOT EXCEEDING ½" IN DIAMETER. CONTRACTOR SHALL USE A ROUND FILE TO REMOVE ALL BURRS AND SHARP EDGES FROM THE HOLES. WIRES SHALL BE PROTECTED WITH HEAT SHRINK TUBING OR VINYL TAPE WHERE THEY PASS THROUGH THE HOLES.

PEDESTAL POLE DETAIL
FOR PED DETECTORS
AND PED SIGNALS

NOTE:

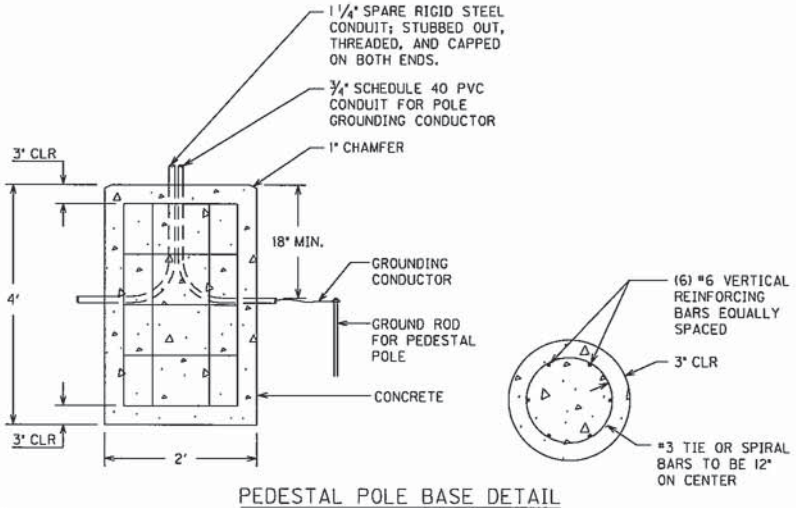
ALL GROUNDING AND SPARE CONDUITS THAT ARE INSTALLED IN THE CONCRETE PEDESTAL POLE BASE ARE INCIDENTAL TO BID ITEM '23222EC'. THIS INCLUDES PROVIDING A MINIMUM OF 24 INCHES OF CONDUIT PAST THE EDGE OF THE CONCRETE BASE.

GROUNDING REQUIREMENTS:

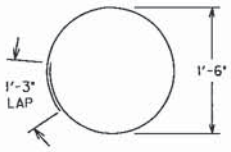
CONTRACTOR SHALL PROVIDE A MINIMUM OF 6 INCHES OF GROUND WIRE FOR TESTING PRIOR TO CONNECTING THE WIRE TO THE TRANSFORMER BASE.

LEAVE TOP OF GROUND RODS EXPOSED FOR ELECTRICAL INSPECTION.

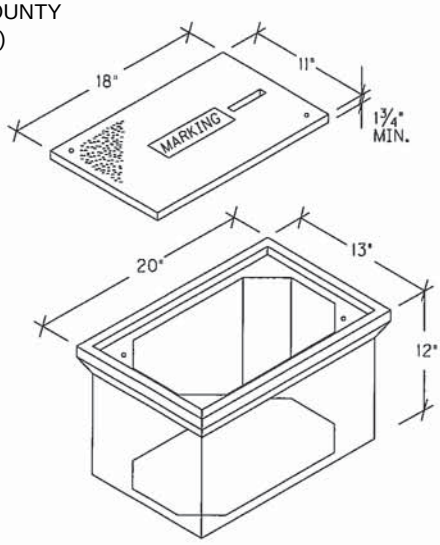
PEDESTAL POLE GROUND - GROUND WIRE SHALL COME FROM THE GROUND ROD THROUGH THE PVC CONDUIT, CONNECTING TO A GROUND LUG ON THE TRANSFORMER BASE AND THEN TO EACH RIGID STEEL GROUNDING BUSHING.

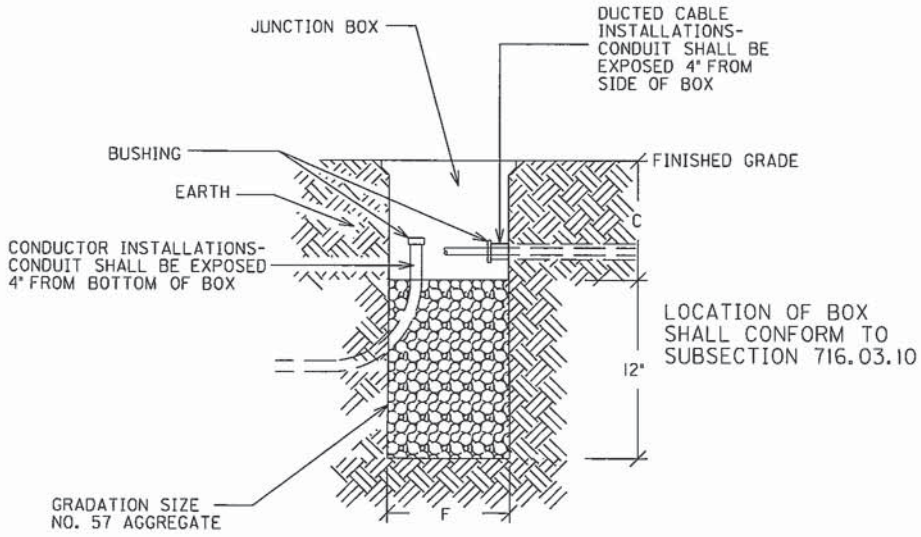


PEDESTAL POLE BASE DETAIL

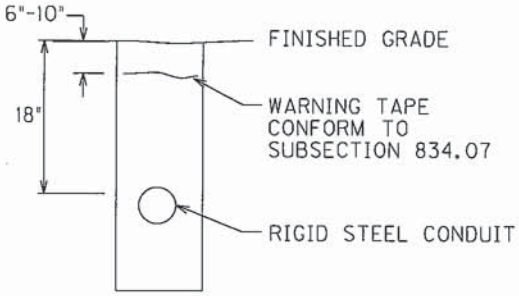


BENDING DETAIL
FOR #3 TIE BARS

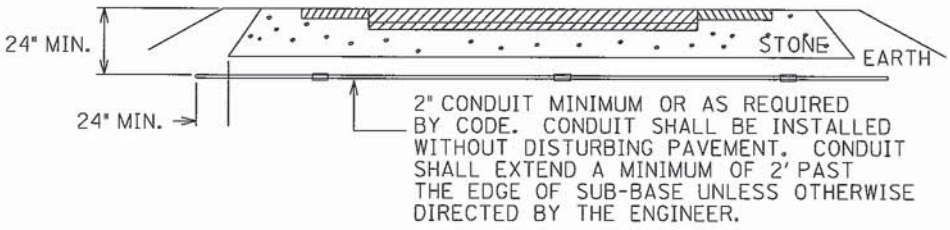




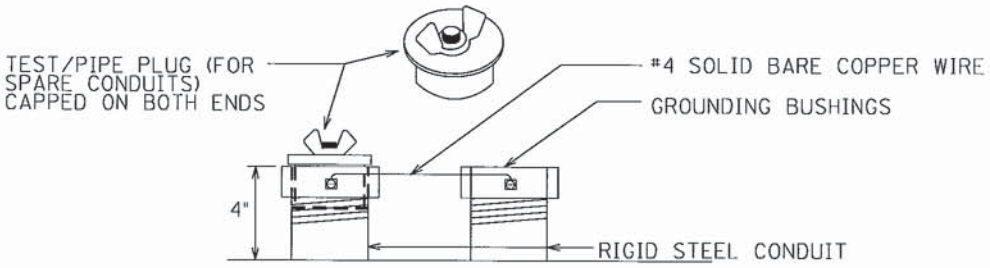
JUNCTION BOX



DEPTH OF CONDUIT



CONDUIT UNDER EXISTING PAVEMENT DETAIL



TYPICAL GROUNDING DETAIL

Jeff Wolfe - Director
Phone (502) 564-3020
FAX (502) 564-7759

DIVISION OF TRAFFIC OPERATIONS

RECOMMENDATION FOR PICKUP OF ITEMS TO BE INSTALLED ON TRAFFIC SIGNALS/LIGHTING

Item Number: **12-2020.00**
County: **Johnson**
Description: **KY 321X @ 2nd St, KY 40 and Main St Pedestal and Wireless Sensor System**

Signals			
8	T-02-0090	Pedestrian signal housing	
8	T-02-0365	LED Countdown Pedestrian Module	

Special items			
4	T-02-0660	Pedstl.top mntg.bkt Two-way	
4	T-02-0670	Pedestal	
8	T-06-0710	Ped Detector Pole Mount FSA Box	
8	T-06-0730	Ped Button w/o Plunger	
8	T-17-0015	9 X 15 Countdown Ped Sign DBL Sided	
1	T-01-0609	Epoxy Applicator	Special Order
3	T-01-0611	Access Point Controller Card	Special Order
3	T-01-0613	Access Point Remote Radio	Special Order
3	T-01-0614	Access Point Accessory Isolator	Special Order
12	T-01-0616	Type T Sensor	Special Order
12	T-01-0618	Sensor Clamshell Enclosure	Special Order
12	T-01-0619	Sensor Installation Kit	Special Order

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

TRAFFIC CONTROL PLAN
JOHNSON COUNTY KY321 X
STP 3042 (001)
FD52 058 321X 000-001
ITEM NO. 12-2020.00

TRAFFIC CONTROL GENERAL

Except as provided herein, “Maintain and Control Traffic” shall be in accordance with the 2012 Standard Specifications and the Standard Drawings, current editions. 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 current MUTCD.

Reduce the speed limit in work areas to 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 except for the hours and times specified. The contractor will be responsible to notify adjacent property owners when work affecting the entrances will be performed.

PROJECT PHASING & CONSTRUCTION PROCEDURES

Type III Barricades shall be placed immediately in front of the road closures. Type III Barricades will be measured for payment only once. Moving and placing the barricades in subsequent locations will be considered incidental to "Maintain and Control Traffic", Lump Sum.

During the days and hours when a lane closures are in place, maintain traffic as specified in the phasing notes and typical sections.

The contractor must notify the Engineer at least fourteen (14) days prior to the beginning of each construction phase in any section.

PROJECT PHASING

The project is divided into 4 sections. These sections are defined as follows:

Section 1:

From the end of the Paint Creek Bridge (STA 100+00) to Main St. (STA 101+47)

Section 2:

From Main St. (STA 101+47) to Second St. (STA 105+62).

Section 3:

From Second St. (STA 105+62) to STA 107+55

Section 4:

From STA 107+55 to Third St., KY 40 (STA 109+10)

Project Phasing – Utility Work

The Utility work on this project must be phased by working on the four sections as outlined. Only one section can be worked on at a time.

Project Phasing:

PHASE I

Sign Detour 1 as detailed elsewhere in the plans. Close Section 1 to traffic. One lane of Main St. will remain open. Complete all work including drainage work, pavement removal and replacement and sidewalk work through this section. Stripe the pavement.

PHASE II

Sign Detour 2 as detailed elsewhere in the plans. Close Section 2 to traffic. One lane of Main St. and one lane of Second St. will remain open. Complete all work including drainage work, pavement removal and replacement and sidewalk work through this section. Limit the closure of access to the entrances at RT STA 103+05 and RT STA 103+55 to 9 calendar days beginning on a Saturday and continuing through the following Sunday. This can be separate periods of time provided each entrance is closed a maximum of 9 calendar days. Stripe the pavement.

PHASE III

Sign Detour 3 as detailed elsewhere in the plans. Close Section 3 to traffic. One lane of Second St. will remain open. Complete all work including drainage work, pavement removal and replacement and sidewalk work through this section. Stripe the pavement.

PHASE IV

Sign Detour 4 as detailed elsewhere in the plans. Close Section 4 to traffic. Complete all work including drainage work, pavement removal and replacement and sidewalk work through this section. Stripe the pavement.

PHASE V

Complete all incidentals beyond the travel lanes that can be accomplished with lane closures or sidewalk closures.

NOTE: Work can be performed before traffic is removed from any section such as saw cutting the existing pavement before days begin. Maintain traffic through these sections utilizing flaggers.

LANE CLOSURES

Limit the lengths of lane closures to those as specified in the phasing plans. Once work in a section has begun, complete all work in that section that impacts traffic before moving ahead to the next section. Contrary to section 112, lane closures will **NOT** be measured for payment, but are considered incidental to “Maintain and Control Traffic,” Lump Sum.

SIGNS

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 for lane closures may include, but are not limited to signage for reduced speed limits will be furnished, relocated, and maintained by the Contractor.

Contrary to section 112, individual signs will be measured only once for payment, regardless of how many times they are set, reset, removed and relocated during the duration of the project. Replacements for damaged signs or signs directed to be replaced by the Engineer due to poor legibility or reflectivity will not be measured for payment.

PORTABLE 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 moved or relocated. The Department **WILL NOT** take possession of the signs upon completion of the work.

PAVEMENT MARKINGS

Place temporary and permanent striping in accordance with Section 112, except that:

1. If the contractor's operations or phasing requires temporary markings which must be subsequently removed from the ultimate pavement, an approved removable lane tape will be used. Payment will **NOT** be made for Pavement Markings Temporary Tape.
2. Existing, temporary, or permanent striping will be in place before a lane is opened to traffic
3. Permanent striping on the roadway will be Durable Type 1 Pavement Markings

Should the Contractor change the existing striping pattern, the Contractor is to restripe the roadway back to its original configuration if no work is anticipated for a period of time (i.e. Winter shutdown).

PAVEMENT EDGE DROP-OFFS

Pavement edge drop-offs will be protected by a lane or shoulder closure. Lane closures will be protected with plastic drums, vertical panels, or barricades as shown on the Standard Drawings.

Pavement edges that traffic is not expected to cross, except accidentally, shall be treated as follows:

Less than 3" – Protect with a lane closure.

Greater than 3" - Pavement Removal/Placement areas – In areas where pavement is to be removed, construct a wedge with DGA Base with a 3:1 or flatter slope, when work is not active in the drop-off area OR provide a minimum of 3 ft between traffic and the drop-off area. Place Type III Barricades at the beginning of the lane closures. Bridge panels should be utilized at 10 ft spacing throughout the drop off area.

No direct payment will be made for bridge panels. Payment will be made once for Type III Barricades regardless of the number of times they are moved or relocated.

TRAFFIC COORDINATOR

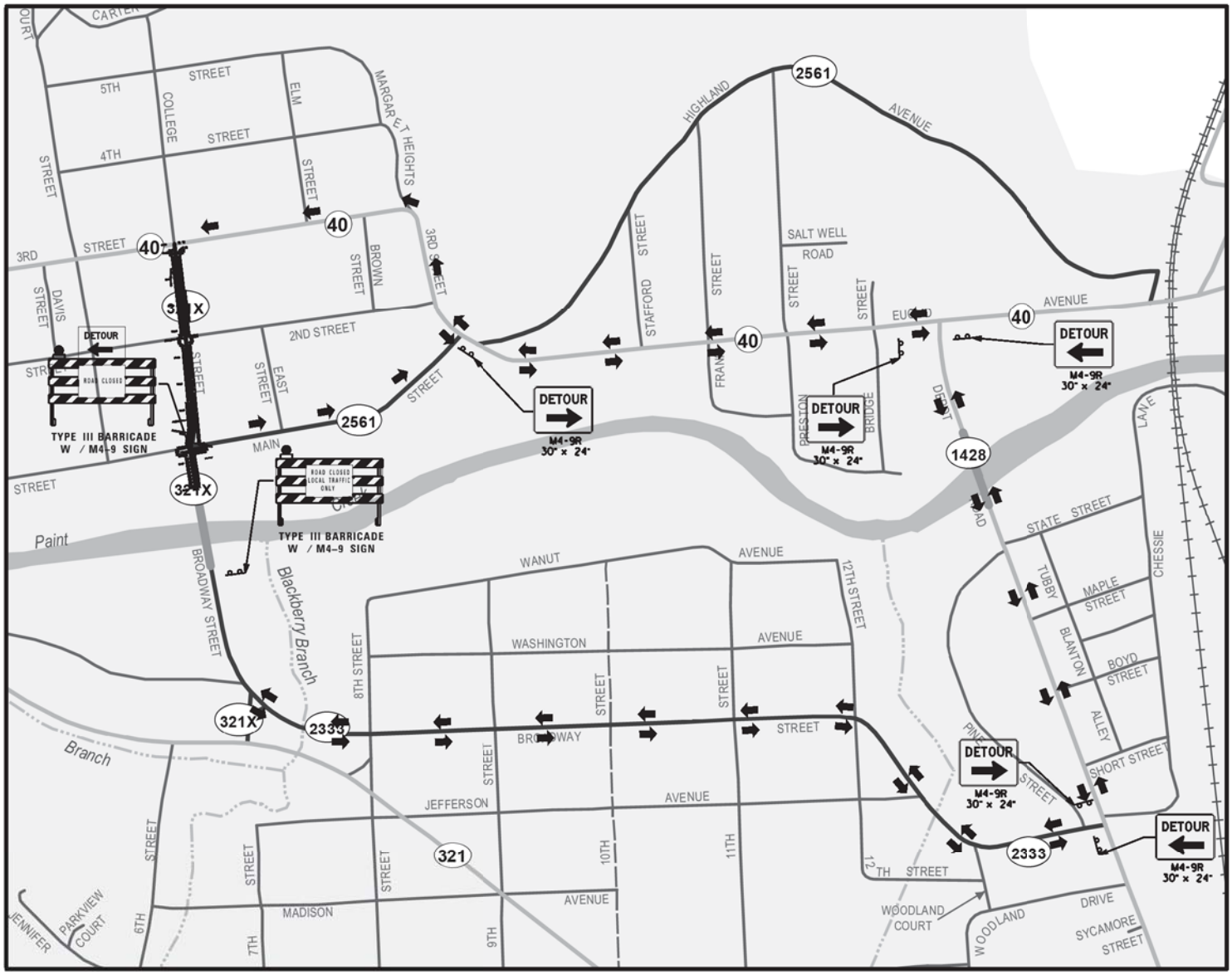
Designate an employee to be traffic coordinator. The designated Traffic Coordinator must be certified by the American Traffic Safety Services Association (ATSSA). The Traffic Coordinator will inspect the project maintenance of traffic once every two hours during the Contractor's operations and at any time a lane closure is in place. The Traffic Coordinator will report all incidents throughout the work zone to the Engineer on the project. The Contractor will furnish the name and telephone number where the Traffic Coordinator can be contacted at all times.

The Traffic Coordinator will be responsible for giving their contact information to local law enforcement and emergency personnel.

COORDINATION OF WORK

The Contractor is advised that other projects will be in progress within or in the near vicinity of this project. The Paintsville School District has an active project. The traffic control of this project may affect those projects. The Contractor will coordinate the work on this project with the work of the other project's contractors. In case of conflict, the Engineer will determine the relative priority to give to work phasing on the various projects.

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020.00	

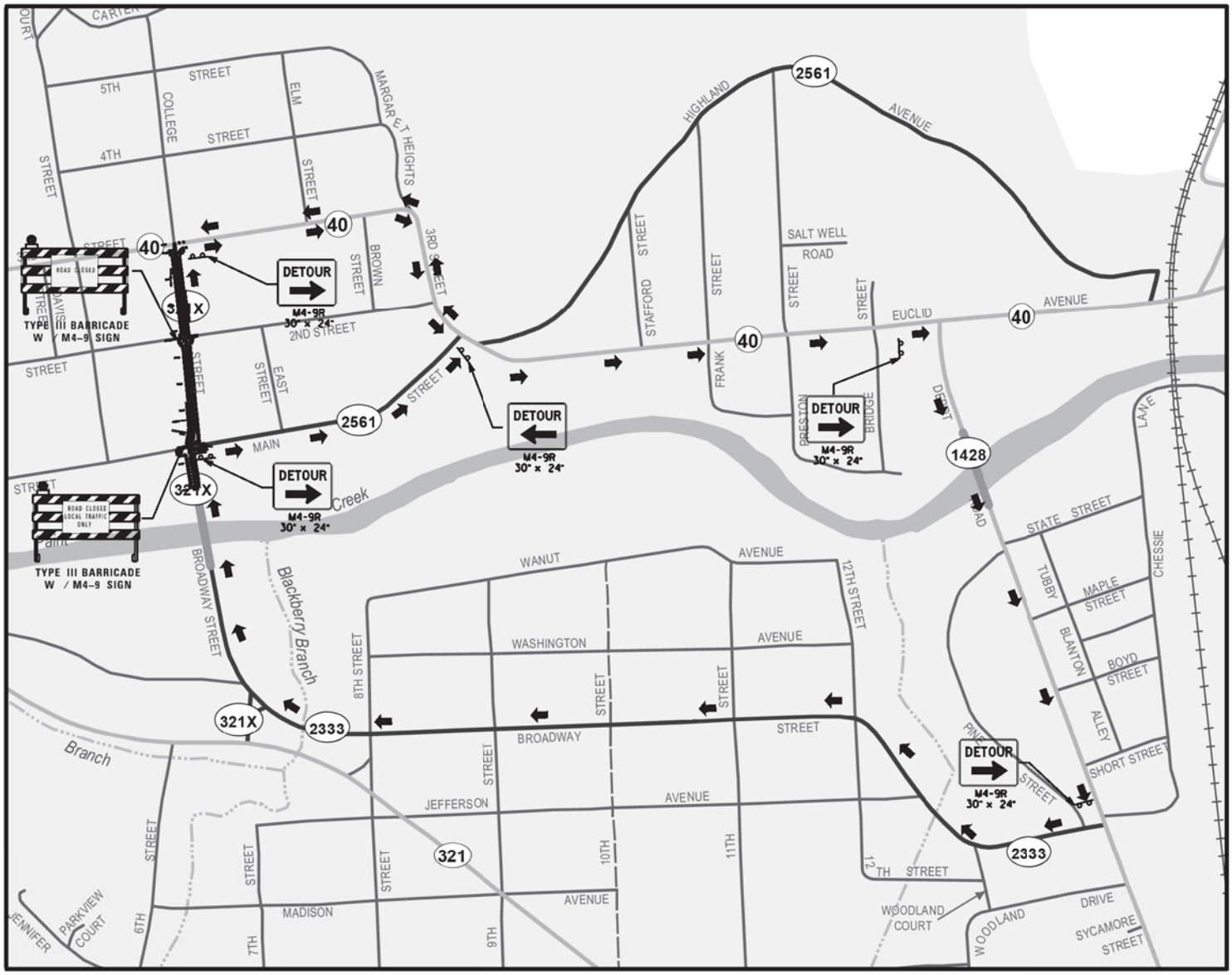


DETOUR #1

NOT TO SCALE

MOT PLANS

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020.00	

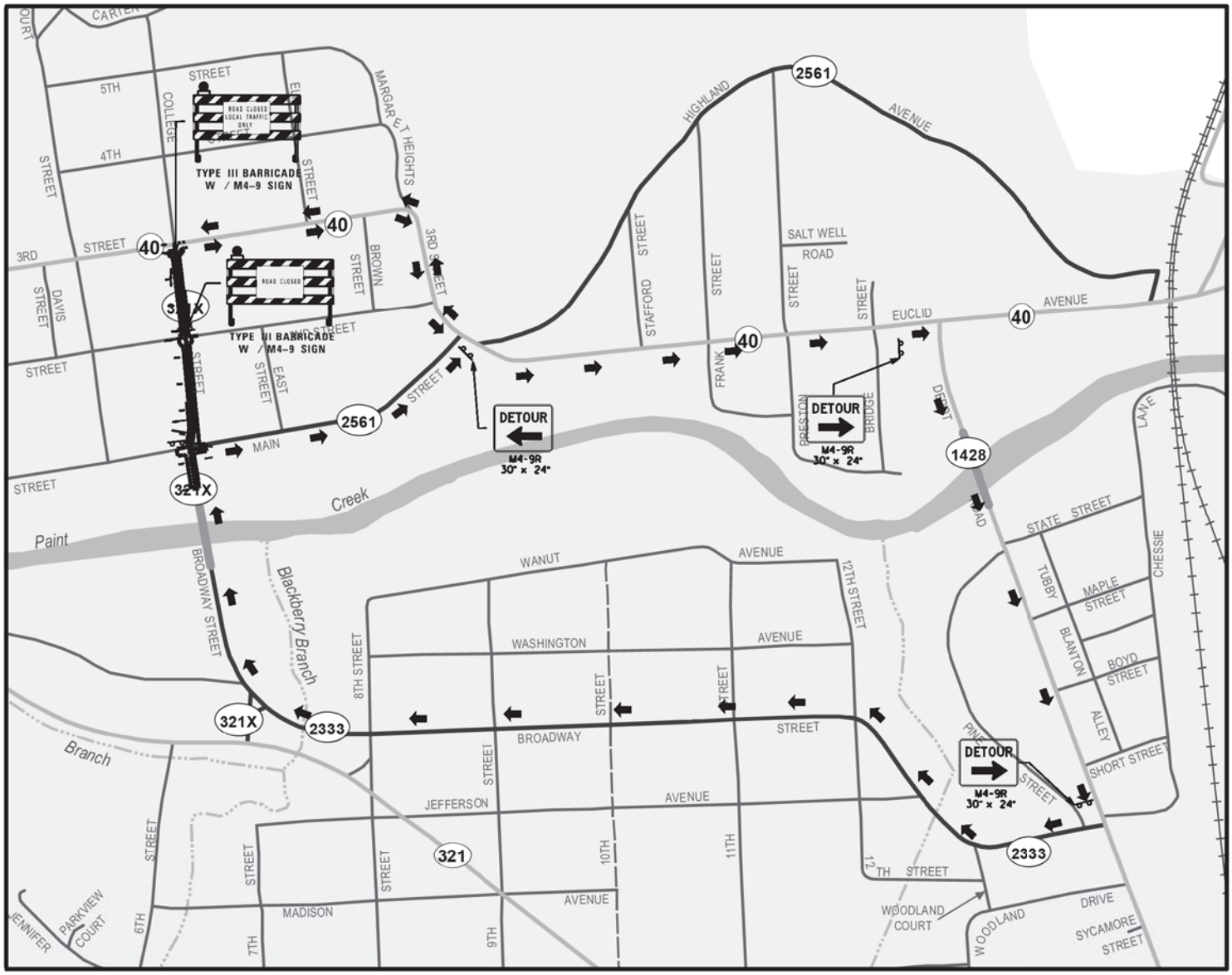


DETOUR #2

NOT TO SCALE

MOT PLANS

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020.00	

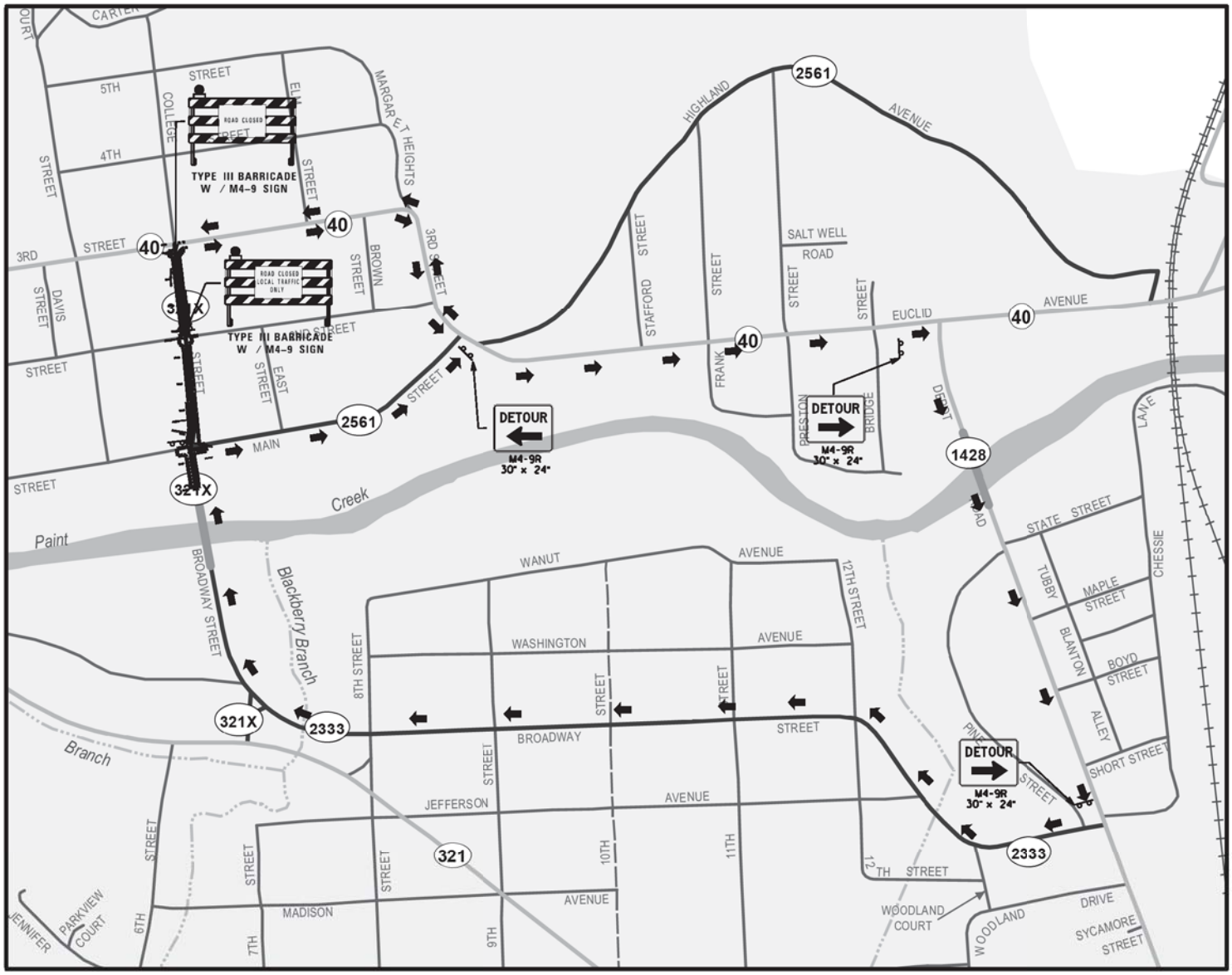


DETOUR #3

NOT TO SCALE

MOT PLANS

COUNTY OF	ITEM NO.	SHEET NO.
JOHNSON	12-2020.00	



DETOUR #4

NOT TO SCALE

MOT PLANS

KY 321 X JOHNSON CO.
STP 3042 (001)
FD52 058 321X 000-001
ITEM NO. 12-2020.00

I. DESCRIPTION

Perform all work in accordance with the Department's 2012 Standard Specifications, Supplemental Specifications, Applicable Special Provisions, and Applicable Standard and Sepia Drawings, except as hereafter specified. Article references are to the Standard Specifications. Furnish all materials, labor, equipment, and incidentals for the following work:

(1) Maintain and Control Traffic; (2) Remove and Replace Pavement and Curb; (3) Remove and Replace Sidewalk Ramps; (4) Replace Top Phases of Drop Boxes; (5) Remove and Replace damaged concrete entrances and sidewalk; (6) Traffic Signal Work; and (7) All other work specified as part of this contract.

II. MATERIALS

Except as specified in these notes or on the drawings, all materials will be according to the Standard Specifications and applicable Special Provisions and Special Notes. The Department will sample and test all materials according to Department's Sampling Manual and the Contractor will have the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing, unless otherwise specified in these notes.

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

B. **Dense Graded Aggregate.** Crushed Stone Base may not be furnished in lieu of DGA.

C. **Pavement Markings -4 inch.** Use Durable Tape Type 1 for permanent striping.

III. CONSTRUCTION METHODS

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

B. **Site Preparation.** Be responsible for all site preparation. Do not disturb existing signs. This item will include, but is not limited to, incidental excavation and backfilling; removal of all obstructions or any other items; disposal of materials; sweeping and removal of debris; shoulder preparation and restoration, temporary and permanent erosion and pollution control; and all incidentals. Site preparation will be only as

approved or directed by the Engineer. Other than the bid items listed, no direct payment will be made for site preparation, but will be incidental to the other items of work.

C. **Disposal of Waste.** Dispose of all cuttings, debris, and other waste off the right-of-way at approved sites obtained by the Contractor at no additional cost to the Department. The contractor will be responsible for obtaining any necessary permits for this work. No separate payment will be made for the disposal of waste and debris from the project or obtaining the necessary permits, but will be incidental to the other items of the work.

D. **Final Dressing, Clean Up, and Seeding and Protection.** After all work is completed, completely remove all debris from the job site. Perform Class A Final Dressing on all disturbed areas. Sow disturbed earthen areas with Seed Mixture to include 70% Kentucky 31 Tall Fescue (Festuca arundinacea) and 30% Perennial Ryegrass (Lolium perenne). These items are incidental to other items in the contract.

E. **Pavement Striping and Pavement Markers.** Permanent striping will be in accordance with Section 112, except that:

(1). Striping will be 4” in width;
(2). Permanent striping will be in place before a lane is opened to traffic; and
(3). Permanent striping will be Durable Type 1

F. **On-Site Inspection.** Each Contractor submitting a bid for this work will make a thorough inspection of the site prior to submitting a bid and will thoroughly familiarize himself with existing conditions so that the work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made. Any claims resulting from site conditions will not be honored by the Department.

G. **Caution:** Information shown on the drawings and in this proposal and the types and quantities of work listed are not to be taken as an accurate or complete evaluation of the material and conditions to be encountered during construction. The bidder must draw his own conclusions as to the conditions encountered. The Department does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation if the conditions encountered are not in accordance with the information above.

H. **Utility Clearance.** It is not anticipated that utility facilities will need to be relocated and/or adjusted except for the bid items listed; 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.

IV. METHOD OF MEASUREMENT

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

B. **Site Preparation.** Other than the bid items listed, site preparation will not be measured for payment, but will be incidental to the other items of work.

C. **Permanent Striping.** Permanent striping Durable Tape Type 1 is measured per linear foot. See Traffic Control Plan.

D. **Erosion Control.** Erosion control items are not listed as bid items will not be measured for payment, but will be considered incidental to the "lump sum" price for the bid item "KPDES Permit & Temporary Erosion Control".

V. BASIS OF PAYMENT

No direct payment will be made other than for the bid items listed. All other items required to complete the construction will be incidental to the bid items listed. Existing signs damaged by the Contractor will be replaced by the Contractor at his expense.

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

B. **Site Preparation.** Other than the bid items listed, no direct payment will be allowed for site preparation, but will be incidental to the other items of work.

C. **Dense Grade Aggregate.** See Section 302 of the Standard Specifications.

D. **Permanent Striping.** See Traffic Control Plan.

E. **Lane Closures.** Contrary to the specifications Lane Closures in operation for more than three days shall not be a bid item and shall be considered incidental to the bid item "Maintain and Control Traffic". Signs shall be paid for one time regardless of how many times they are moved.

NOTES APPLICABLE TO PROJECT

KY 321 X JOHNSON COUNTY
STP 3042 (001)
FD52 058 321X 000-001
ITEM NO. 12-2020

---

1. The dimensions shown on the typical section for pavement and shoulder widths and thickness are nominal or typical dimensions. The actual dimensions to be constructed may be varied to fit existing conditions as directed or approved by the Engineer. It is not intended that existing pavement or be widened unless otherwise specified in the Proposal.

2. The contractor is to be advised there are locations of overhead utility wires on the project. These and all other utilities should be avoided on this 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.

3. The contractor will be responsible for removing the existing curb and pavement without damaging the adjacent sidewalk, concrete entrances, or other facilities that are not scheduled to be removed. If damage to items of work during the other work occurs, the contractor will be responsible for replacement at their expense.

4. The contractor should take when working around the existing manholes while removing and replacing the concrete pavement, sidewalk and other items of work. Any damage to the existing manholes or manhole covers will be repaired at no cost to the department.

5. When removing and replacing the sidewalk ramps, the contractor may encounter utilities. The contractor should take care when performing this work and any damage to the existing utilities will be repaired at no cost to the department.

6. In accordance with Standard Drawing RPS-010-10, the contractor will use tie bars for construction joints between adjoining slabs. At a minimum this will be required along the centerline of Main St., Second St. and between Phase III and IV.

7. There are quantities set up in the contract for the removal and replacement of the 4 existing pedestrian poles.

8. The contractor will be required to coordinate building access during the work with affected property owners and businesses.

9. The contractor is to take care not to damage any existing roadway signs. The contractor shall inventory all signs and their locations prior to commencing work. Remove existing signs only when necessary. Protect and store them in a safe location. If a sign is damaged during removal, storage for re-installation, the contractor will be responsible to replace it at no cost to the owner in accordance with section 105.08 of the standard specifications. Re-install all signs at their original location by approved methods. This work will be incidental to the bid item “Traffic Control”.

10. The contractor is to take care not to damage any existing light poles and wiring. Any light poles or wiring that is damaged during construction is to be replaced at the contractor's expense in accordance with section 105.08 of the standard specifications.

11. Backfill to be placed where formwork is removed for the construction of the pavement, sidewalk and curb locations will be considered incidental to the adjacent item(s) of work and no direct payment will be made.

12. The contractor will be required to stake the project in order to replace the pavement at the current pavement elevations EXCEPT the area from STA. 101+08 to STA. 102+62. The contractor will be responsible to ensure that the project does not hold water in any areas. From STA. 101+08 to STA. 102+62 the contractor will stake the new elevations based upon the shifting of the existing lanes to the new configuration.

13. The existing drainage boxes shall be cleaned of all debris and the debris disposed of off the project site. The bid item Clean Roadway Drains will be full compensation for the cleaning of the existing curb boxes and drop box inlets.

14. The bid item “Clean” per linear foot will be full compensation for the cleaning and disposal of debris in the existing storm sewer system as directed by the Engineer.

15. The existing gutter drains are to be preserved in areas where the sidewalk is to remain in place. A quantity of PVC Pipe is set up in areas where the removal and replacement of the existing sidewalk is scheduled.

16. There is a quantity of storm sewer pipe in order to remove and replace the existing pipe at approximately 23 feet right of STA 100+08, from a Junction box through the parking lot and toward Paint Lick Creek. Also, there is a pipe headwall, channel lining and Class B concrete set up for the outlet. The removal and disposal of the existing pipe and headwall is incidental to the new pipe. Backfill pipe with flowable fill and 4 inches of asphalt surface. The flowable fill and asphalt surface is incidental to the pipe installation.

17. The bid item "Reconstruct Inlet" shall be full compensation for the following:
    1) Removal of the existing frame and grate;
    2) Forming the new top portion;
    3) Furnish and Install new Type 11 frame and grate;
    4) Class A Concrete;
    5) Reinforcing Steel doweled and epoxied into the existing box chamber a minimum of 6 inches and on a maximum of 6 inch centers (Use #5 reinforcing steel);
    6) Any other incidentals needed to complete the installation;
    7) Disposal of the existing concrete removed;
    8) Delivery of the existing frame and grate to the Johnson County maintenance facility.

18. The bid item "Remove and Relocate Clock" will be full compensation for the following:
    1) Removal and storage of the existing clock;
    2) Splicing existing conduit and wiring (2 – No. 12 wires with ground) and installation to new location;
    3) 4 each - 5/8 inch Anchor Bolts as shown in the detail;
    4) Trenching and backfilling to the new location;
    5) Removal of the existing footer;
    6) Installation of approximately 0.83 cu yards of concrete to the dimensions shown on detail sheet;
    7) Installation of approximately 54 lbs of reinforcing steel;
    8) Reinstallation of clock (Approximately 15 ft from current location);
    9) Backfilling with asphalt;
    10) Purchase of specialty key for access panel and delivery to the City of Paintsville.(Contact The Verdin Company of Cincinnati, Ohio 800-543-0488)

19. The bid item "Perm Paint – Barrier Curb" will be full compensation to paint the top and the front face of the standard integral curb to the gutter line as directed by the Engineer. Paint shall meet the specifications of the waterborne yellow permanent paint. Glass beads will not be required.
20. The existing asphalt will be removed from the utility strip located at approximately LT STA 103+50 to STA 104+14 and LT STA 104+58 to 105+04. Sod will be placed in this area. Payment from the removal and disposal of the asphalt and replacement with Sod will be by the bid item "Sodding" by the square yard.

21. The bid item "Remove PCC Pavement" will be full compensation for the removal of the existing pavement and the removal of the concrete entrance pavement.

22. The existing PCC Pavement, Concrete Entrance Pavement and Sidewalk may be removed either by sawing and removing or by using a resonant breaker to shatter the pavement prior to removal. If a resonant breaker is used, the Contractor must use equipment that does not damage the subgrade or damage any utility below the pavement. The only equipment allowed for shattering the pavement shall be a self-propelled resonant frequency breaking unit capable of producing low amplitude, 2,000-pound force blows at a rate of not less than 44 per second. Contractor will be responsible to cover any costs associated with damage to utilities caused by the resonant breaker.

    Regardless of the method utilized, the contractor will not be allowed to saw or break the concrete pavement, entrances or sidewalk more than one week prior to the removal of that section.

23. There is a portion of the project where there is an active project for the Paintsville Independent school system. As part of their contract, they are to replace the sidewalk and install a concrete entrance. This is approximately LT STA. 106+97 to 107+36. The contractor will coordinate his work in this area.

24. The contractor is responsible for any damage to underground service lines. No direct payment will be made for repair and replacement of service lines. If a main utility is in conflict with construction and cannot be redesigned to avoid it, the owner shall be contacted immediately.

25. The contractor shall be responsible for any and all damage to public and/or private property resulting from this work. Restore all disturbed features in like kind materials and design to the existing or proposed grades, as applicable, at no additional cost to the owner.

26. No direct payment will be made for any asphalt pavement required in order to fill the area adjacent to the newly constructed JPC pavement where disturbed during construction. Any required asphalt pavement will be incidental to the JPC bid item.

27. No direct payment will be made for any vegetative area to be restored after the removal and replacement of the standard integral curb, sidewalk, sidewalk ramps, or any other item of work. Restoring disturbed vegetative area will be incidental to the other items of work.

28. The contractor will be allowed to use a JPC Pavement/24 hour mix for the areas necessary in order to expedite the reopening of the entrances listed in the maintenance of traffic plan. The contractor will be paid for these areas with the bid item JPC Pavement – 9 IN.

REFERENCES

1. Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Edition of 2012.

2. FHWA Manual on Uniform Traffic Control Devices – 2009 Edition.

3. Kentucky Department of Highways Standard Drawings, current editions, as applicable:

RPM-100-09	CURB AND GUTTER, CURBS AND VALLEY GUTTER
RPM-150-07	CONCRETE ENTRANCE PAVEMENT AND SIDEWALK
RPM-152-07	CONCRETE ENTRANCE PAVEMENT AND SIDEWALK
RPM-170-07	SIDEWALK RAMPS
RPN-015-04	JOINTED PLAIN CONCRETE PAVEMENT
RPS-010-10	CONCRETE PAVEMENT JOINT DETAILS
RPS-020-13	EXPANSION AND CONTRACTION JOINT LOAD TRANSFER ASSEMBLIES
RPS-033-06	CONCRETE PAVEMENT JOINTS TYPES AND SPACING
RPS-034-06	CONCRETE PAVEMENT JOINTS TYPES AND SPACING
RPX-001-03	STATION MARKINGS CONCRETE PAVEMENT
RPX-015-03	HOT-POURED ELASTIC JOINT SEALS FOR CONCRETE PAVEMENT

4. Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Edition of 2012, Appendix B - Supplemental Specifications, as applicable:

Special Note	Portable Changeable Message Signs *attached*
Special Note	Before You Dig *attached*
Special Note	Fixed Completion Date and Liquidated Damages *attached*
Special Note	Erosion Prevention and Sediment Control *attached*
Special Note	Pedestrian Restriction Through the Work Area *attached*

Special Note For Portable Changeable Message Signs
KY 321 X, Johnson County
Item No. 12-2020.00

1.0 DESCRIPTION. Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.
Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
3) Provide a controller consisting of:
   a) Keyboard or keypad.
   b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
   c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
   d) Logic circuitry to control the sequence of messages and flash rate.
4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates
5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.

9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
11) Provide a photocell control to provide automatic dimming.
12) Allow an on-off flashing sequence at an adjustable rate.
13) Provide a sight to aim the message.
14) Provide a LED display color of approximately 590 nm amber.
15) Provide a controller that is password protected.
16) Provide a security device that prevents unauthorized individuals from accessing the controller.
17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

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

*Insert numerals as directed by the Engineer.

Add other messages during the project when required by the Engineer.

2.3 Power.

1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

3.0 CONSTRUCTION. Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase

having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.
When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

5.0 PAYMENT. The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
02671	Portable Changeable Message Sign	Each

Special Note For Before You Dig
KY 321 X, Johnson County
Item No. 12-2020.00

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

Special Note for Fixed Completion Date and Liquidated Damages
KY 321 X, Johnson County
Item No. 12-2020.00

Contrary to Section 108.09, Liquidated Damages of $5,000 per calendar day will be assessed for each day work remains incomplete beyond the Specified Project Completion Date. This project has a Fixed Project Completion Date of August 31, 2015.

Additionally, failure to complete the opening of the entrances at RT STA. 103+05 and RT STA 103+55 within the allowable time specified elsewhere in the contract will result in liquidated damages of $1,000 per day. This will be charged in addition to the overall contract specified completion date liquidated damages.

All other applicable portions of Section 108 apply.

Special Note for Erosion Prevention and Sediment Control
KY 321 X, Johnson County
Item No. 12-2020.00

The Contractor shall be responsible for filing the Kentucky Pollution Discharge Elimination System (KPDES) KYR10 permit Notice of Intent (NOI) with the Kentucky Division of Water (DOW) and any KPDES local Municipal Separate Storm Sewer System (MS4) program that has jurisdiction. The NOI shall name the contractor as the Facility Operator and include the KYTC Contract ID Number (CID) for reference.

The Contractor shall perform all temporary erosion/sediment control functions including: providing a Best Management Practice (BMP) Plan, conducting required inspections, modifying the BMP plan documents as construction progresses and documenting the installation and maintenance of BMPs in conformance with the KPDES KYR10 permit effective on _____or a permit re-issued to replace that KYR10 permit. This work shall be conducted in conformance with the requirements of Section 213 of KYTC 2012 Department of Highways, Standard Specifications for Road and Bridge Construction.

Contrary to Section 213.03.03, paragraph 2, the Engineer shall conduct inspections as needed to verify compliance with Section 213 of KYTC 2012 Department of Highways, Standard Specifications for Road and Bridge Construction. The Engineer's inspections shall be performed a minimum of once per month and within seven days after a storm of ½ inch or greater. Copies of the Engineer's inspections shall not be provided to the contractor unless improvements to the BMP's are required. The contractor shall initiate corrective action within 24 hours of any reported deficiency and complete the work within 5 days. The Engineer shall use Form TC 63-61 A for this report. Inspections performed by the Engineer do not relieve the Contractor of any responsibility for compliance with the KPDES permit.

Contrary to Section 213.05, bid items for temporary BMPs will not be listed and will be replaced with one lump sum item for the services. Payment will be pro-rated based on the Project Schedule as submitted by the Contractor and as agreed to by the Engineer.

The contractor shall be responsible for applying "good engineering practices" as required by the KPDES permit. The contractor may use any temporary BMPs with the approval of the KYTC Engineer.

The contractor shall provide the Engineer copies of all documents required by the KPDES permit at the time they are prepared.

The contractor shall be responsible for the examination of the soils to be encountered and make his own independent determination of the temporary BMPs that will be required to accomplish effective erosion prevention and sediment control.

The Contractor shall be responsible for filing the KPDES permit Notice of Termination (NOT) with the Kentucky DOW and any local MS4 program that has jurisdiction. The NOT shall be filed after the Engineer agrees that the project is stabilized or the project has been formally accepted.

Payment: Payment will be at the contract unit price for K.P.D.E.S Permit & Temporary Erosion Control: Lump Sum.

Special Note For Pedestrian Restriction Through the Work Area Johnson County – KY 321X Item No. 12-2020

The contractor will ensure through the use of signs, plastic fencing and other industry standard methods, that pedestrians be restricted from walking through the work zone during construction activities throughout the duration of the project.

The sidewalk will be closed throughout the duration of the project except accommodations must be made for all businesses and residents to continue to have access. The contractor will verify with the Section Engineer that this has been performed adequately before beginning any work on the project.

Should it become evident that pedestrians continue to travel through the work zone, the contractor will adjust his methods until such time as this is corrected.

This work is incidental to the bid item “Maintain and Control Traffic”, Lp Sum.

General Note 555
JPC Pavement Ride Quality
KY 321 X, Johnson County
Item No. 12-2020.00

Apply JPC Pavement Smoothness Requirements, in accordance with subsection 501.03.19 of the Standard Specifications, Category B, on this project.

General Note 650
Standard Drawings
KY 321 X, Johnson County
Item No. 12-2020.00

Standard drawings are not attached to these plans. A Standard Drawing book and the Headwall Supplemental book may be obtained from the Policy Support Branch of the Department of Administrative Services in Frankfort, Ky., at (502) 564-3670.

Right-of-Way Certification Form

Revised 2/22/11

☐ Federal Funded ☑ Original

☑ State Funded ☐ Re-Certification

This form must be completed and submitted to FHWA with the PS&E package for federal-aid funded Interstate, Appalachia, and Major projects. This form shall also be submitted to FHWA for all federal-aid projects that fall under Conditions No. 2 or 3 outlined elsewhere in this form. When Condition No. 2 or 3 apply, KYTC shall resubmit this ROW Certification prior to construction contract Award. For all other federal-aid projects, this form shall be completed and retained in the KYTC project file.

Date: 10-10-14

Project Name: Paintsville College Street Utility Plan

Letting Date: 2/NOV2014

Project #:

County: Johnson

Item #: 12-2020.0

Federal #:

Description of Project:

Projects that require NO new or additional right-of-way acquisitions and/or relocations

☑ The proposed transportation improvement will be built within the existing rights-of -way and there are no properties to be acquired, individuals, families, and businesses ("relocatees") to be relocated, or improvements to be removed as a part of this project.

Projects that require new or additional right-of-way acquisitions and/or relocations

☐ Per 23 CFR 635.309, the KYTC hereby certify that all relocatees have been relocated to decent, safe, and sanitary housing or that KYTC has made available to relocatees adequate replacement housing in accordance with the provisions of the current FHWA directive(s) covering the administration of the Highway Relocation Assistance Program and that at least one of the following three conditions has been met. (Check those that apply.)

☐ **Condition 1.** All necessary rights-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. Fair market value has been paid or deposited with the court.

☐ **Condition 2.** Although all necessary rights-of-way have 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. Trial or appeal of 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. Fair market value has been paid or deposited with the court for most parcels. Fair market value for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract. (See note 1 below.)

Note 1: The KYTC shall re-submit a right-of-way certification form for this project prior to AWARD of all Federal-Aid construction contracts. Award must not to be made until after KYTC has obtained full legal possession and fair market value for all parcels has been paid or deposited with the court and FHWA has concurred in the re-submitted right-of-way certification.

Right-of-Way Certification Form

Revised 2/22/11

☐ **Condition 3.** The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. However, all remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. The KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary rights-of-way will not be fully acquired, and/or some occupants will not be relocated, and/or the fair market value 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. A full explanation and reason for this request, including identification of each such parcel and dates on which acquisitions, payments, and relocations will be completed, is attached to this certification form for FHWA concurrence. (See note 2.)

Note 2: The KYTC may request authorization on this basis only in unique and unusual circumstances. Proceeding to bid letting shall be the exception and never become the rule. In all cases, the KYTC shall make extraordinary efforts to expedite completion of the acquisition, payment for all affected parcels, and the relocation of all relocatees prior to AWARD of all Federal-Aid construction contracts or force account construction.

Approved:	Joe Tackett		Right-of-Way Supervisor
	Printed Name	Signature	
Approved:	DM Loy		KYTC, Director of ROW &Utilities
	Printed Name	Signature	13 Oct 2014
Approved:			FHWA, ROW Officer (when applicable)
	Printed Name	Signature	

Right-of-Way Certification Form

Revised 2/22/11

Date: 10-10-14

Project Name: Paintsville College Street Utility Plan
Project #: _____ County: Johnson
Item #: 12-2020.0 Federal #: _____
Letting Date: _____

This project has 0 total number of parcels to be acquired, and 0 total number of individuals or families to be relocated, as well as 0 total number of businesses to be relocated.

0 Parcels where acquired by a signed fee simple deed and fair market value has been paid

0 Parcels have been acquired by IOJ through condemnation and fair market value has been deposited with the court

0 Parcels have not been acquired at this time (*explain below for each parcel*)

0 Parcels have been acquired or have a "right of entry" but fair market value has not been paid or has not been deposited with the court *(explain below for each parcel)*

0 Relocatees have not been relocated from parcels ____, ____, ____, ____, ____, ____, and ____ *(explain below for each parcel)*

Parcel #	Name/Station	Explanation for delayed acquisition, delayed relocation, or delayed payment of fair market value	Proposed date of payment or of relocation

There are 0 billboards and/or 0 cemeteries involved on this project.

There are 0 water or monitoring wells on parcels ____, ____, ____, ____, and ____. All have been acquired and are the responsibility of the project contractor to close/cap.

Form Effective Date: April 1, 2006
Last Revised: February 22, 2011

SPECIAL NOTES FOR UTILITY CLEARANCE

IMPACT ON CONSTRUCTION

JOHNSON COUNTY
MP 0.179 TO MP 0.333
KY 321 X
ITEM NO. 12-2020.00

GENERAL PROJECT NOTE ON UTILITY PROTECTION

N/A

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

N/A

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

N/A

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

.

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

The contractor will be responsible for installing various water and sewer lines for the City of Paintsville. Relocation plans for these lines have been made part of the road contract T he contractor will be paid for this work through the road contract.

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

SPECIAL NOTES FOR UTILITY CLEARANCE

IMPACT ON CONSTRUCTION

JOHNSON COUNTY
MP 0.179 TO MP 0.333
KY 321 X
ITEM NO. 12-2020.00

S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

BEFORE YOU DIG

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

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

AREA UTILITIES CONTACT LIST

Utility Company/Agency	Contact Name	Contact Information
CITY OF PAINTSVILLE	**ERIC RATLIFF**	**606-789-2630**

SUPPLEMENTAL
SPECIFICATIONS FOR
CONTRACT 105-14-03

COLLEGE STREET UTILITY REHABILITATION
FD NO. 52 058 321X 000.001
ITEM NO. 12-2020.00

PAINTSVILLE UTILITIES
JOHNSON COUNTY, KENTUCKY

August 2014
Revision 1 October 13, 2014

107 Forbes Drive
Hopkinsville, KY 42240
270/886-5466

bell engineering

2480 Fortune Drive
Suite 350
Lexington, KY 40509
859/278-5412

105-14-03 (8/14)

INDEX

SUPPLEMENTAL SPECIFICATIONS
CONTRACT 105-14-03
COLLEGE STREET UTILITY REHABILITATION
PAINTSVILLE UTILITIES
JOHNSON COUNTY, KENTUCKY

SECTION NO.	TITLE	PAGE NO.
DIVISION 0	GENERAL SPECIFICATIONS, BIDDING REQUIREMENTS, CONTRACT FORMS AND CONDITIONS OF THE CONTRACT	
	Not Applicable	
DIVISION 1	GENERAL REQUIREMENTS	
01010	Summary of Work	01010-1 Thru 01010-5
01500	Construction Facilities and Temporary Controls	01500-1 Thru 01500-3
DIVISION 2	SITE WORK	
02610	Pressure Pipe	02610-1 Thru 02610-27
02700	Sewer and Drain Pipe	02700-1 Thru 02700-31
02930	Sodding and Seeding	02930-1 Thru 02930-7
DIVISION 3	CONCRETE	
03480	Precast Concrete Specialties	03480-1 Thru 03480-8
DIVISION 4	MASONRY	
	Not Applicable	
DIVISION 5	METALS	
05540	Castings	05540-1 Thru 05540-2
DIVISIONS 6 THRU 14		
	Not Applicable	

105-14-03 (8/14)

SECTION NO.	TITLE	PAGE NO.
DIVISION 15	MECHANICAL	
15100	Small Plumbing Valves, Plumbing Specialties, and Service Accessories	15100-1 Thru 15100-5
15102	Valves (Water Related)	15102-1 Thru 15102-12
15107	Service Valves, Stops and Miscellaneous Appurtenances for Water Line Projects	15107-1 Thru 15107-4
DIVISION 16	ELECTRICAL	
	Not Applicable	

END

105-14-03 (8/14)

SECTION 01010

SUPPLEMENTAL SPECIFICATIONS FOR COLLEGE STREET UTILITY REHABILITATION PAINTSVILLE UTILITIES JOHNSON COUNTY, KENTUCKY FD 52 058 321X 000.001 ITEM NO. 12-2020.00

PART 1 GENERAL

1.01 SCOPE OF WORK COVERED BY THE CONTRACT

A. These Specifications and the accompanying Drawings describe the work to be done and materials to be furnished for the construction of all divisions, furnishing and installation of:

1. Eight-inch, 6-inch, 4-inch PVC pipe, ductile iron pipe, and accessories. (See item code unit to bid on.)

2. Eight-inch gravity PVC sewers and 4-foot diameter precast manholes.

B. The Work is located in Johnson County, Paintsville, Kentucky, on College Street between Main Street and 3rd Street.

C. Major work items in this Contract include:

1. Sanitary sewers and precast manholes.
2. Ductile iron water mains and valves.
3. See item code/unit to bid on remaining items for sewer and water.

1.02 WORK SEQUENCE

A. The Paintsville Utilities has selected all work as a priority.

1. The CONTRACTOR shall submit and obtain approval of all shop drawings prior to start of construction.
2. All work must be completed in a timely manner.
3. CONTRACTOR shall provide minimum 8 hours prior notice to the ENGINEER and OWNER as to when they will be either working or not working onsite (no exceptions).

1.03 ADDITIONAL REQUIREMENTS

A. The Department of Highways does not know or pretend to know, nor does it undertake to state, the nature of all materials which will be necessary to excavate in order to construct the work contemplated herein.

B. Any rock excavation required to complete the utility construction work is incidental to the items indicated on the summary sheet. No separate payment

shall be made for rock excavation. The CONTRACTOR is advised to make rock soundings or investigations as he may see fit. The CONTRACTOR shall assume all risks arising from, or out of, the nature of all forms of materials necessary to be excavated, except as otherwise specified.

C. The utility construction is a part of the Kentucky Transportation Cabinet, Department of Highways Project No. FD 52 058 321X 000.001, Item No. 12-2020.00 Therefore, the Contract will be administered by the Department of Highways and the CONTRACTOR shall comply with all Department of Highway's requirements, including wage rates.

D. All references to ENGINEER in these Supplemental Utility Specifications shall mean the Kentucky Transportation Cabinet engineer. The Kentucky Transportation Cabinet ENGINEER shall work with the Paintsville Utilities and the Consultant (Bell Engineering). Otherwise, in matters of a technical nature or interpretation of Specifications involving the utilities of the Paintsville Utilities, the ENGINEER shall have final say in all matters concerning this Project. All changes in the scope of work and all matters of interpretation shall be made by the ENGINEER. The CONTRACTOR shall take all directions from the ENGINEER or his authorized representative.

E. All references in the Specifications and Drawings, to OWNER shall mean the Paintsville Utilities, Paintsville, Kentucky.

F. This utility construction is limited to work on Kentucky Department of Highway's right-of-way, county road, right-of-way, and/or dedicated utility easement.

G. The CONTRACTOR is responsible for all testing and cleaning required in these Specifications. (Reference the individual technical specifications for specific requirements.) The CONTRACTOR must supply all materials, equipment, and labor, at no additional cost, to perform the required tests, including water. Water being used for flushing and/or testing shall be metered for gallons of water used. The Paintsville Utilities may elect to request payment for subject water. Any line failing to pass a required test shall be repaired and retested until it passes, at the CONTRACTOR'S expense.

H. The CONTRACTOR is advised that Paintsville Utilities (phone no.: (606/789-2630)) or their authorized representative shall have the right to inspect lines as constructed, the right to inspect testing of lines, and the right to reject any work not conforming to these Specifications. CONTRACTOR shall notify this separate entity 48 hours prior to utility testing. Daily inspection will be provided by the OWNER or Bell Engineering.

I. The CONTRACTOR is further advised that the Paintsville Utilities will require a preconstruction conference pertaining to utilities construction for this Project prior to the start of construction.

105-14-03 (8/14)

1.03 GOVERNING SPECIFICATIONS

A. The detailed specifications set forth herein shall serve to apprise the CONTRACTOR of the specifics of the project. The CONTRACTOR is cautioned, however, that all applicable portions of the General Specifications are to be followed and strict compliance therewith will be required.

B. THESE SPECIFICATIONS ARE MEANT TO SUPPLEMENT DEPARTMENT OF HIGHWAYS SPECIFICATIONS. THE CONTRACTOR IS ADVISED THAT HE MUST COMPLY WITH ALL DEPARTMENT OF HIGHWAYS REQUIREMENTS. IN THE EVENT THERE IS A CONFLICT WITH THESE SPECIFICATIONS AND DEPARTMENT OF HIGHWAYS SPECIFICATIONS, **THE MOST STRINGENT SPECIFICATION SHALL APPLY.** IN ALL CASES, THE RESIDENT ENGINEER SHALL MAKE THE FINAL DETERMINATION IN CASE OF A CONFLICT.

C. The Drawings and Specifications are intended to be explanatory to each other, but should any discrepancy appear or any misunderstanding arise as to the import of anything contained in either, the ENGINEER shall be immediately notified and shall make the necessary interpretation. Corrections of errors or omissions in the Drawings or Specifications may be made by the ENGINEER when such corrections are necessary for the proper fulfillment to their intention as construed by him.

D. All work or materials shown on the Drawings and not mentioned in the Specifications, or any work specified and not shown on the Drawings, shall be furnished, performed and done by the CONTRACTOR as if the same were both mentioned in the Specifications and shown on the Drawings.

E. It is intended that the work covered by the Contract Documents be done so as to cause the minimum interference with the normal operation of the existing distribution system of the OWNER. The CONTRACTOR shall be required to organize and schedule his work so as to keep the distribution system in full operation during the construction period insofar as is consistent with the nature of the construction work to be performed.

F. The manner in which shutdowns shall be made and the schedule of work shall be subject to the approval of the Paintsville Utilities. Although every effort will be made to cause the minimum interference with the CONTRACTOR'S work, the interest of the OWNER in regard to water service shall take precedence over the CONTRACTOR'S work. Therefore, the OWNER reserves the right to put any line or other facilities that may be shut down for the construction work back into service if and when an emergency arises.

1.04 METHOD OF PAYMENT

A. The method of payment for the individual items of construction for this Project is as follows:

105-14-03 (8/14)

Note: All exploratory excavation for existing utilities shall be performed by the CONTRACTOR, etc., and shall be incidental to the utility relocation. See the standard detail sheet general notes for requirements.

1. PE, PVC, and Ductile Iron Water Pipe and Accessories

   a. Payment for installation of water line (open cut) pipe shall be per linear foot of pipe installed and shall include excavation, bedding, furnishing and installing the pipe, initial and final backfill, testing, and purging. Furnishing and installation of fittings shall be incidental to the pipe installation. Furnishing and installation of tracer wire shall be incidental to the pipe installation.

   b. Where crushed rock trench backfill is called for on the Drawings, the cost for furnishing and installation of this material shall be considered incidental to the cost for furnishing and installation of the water lines with no extra payment allowed.

   c. Where water line is located inside cover pipe, the cost of casing spacers and end seals shall be considered incidental to the price bid per linear foot of pipeline installed inside cover pipe.

2. Payment for steel cover pipe shall be per linear foot of pipe installed by open cut or bore method. Bedding, backfill and all other items associated with this item of construction shall be considered incidental, including pipe skid, stainless steel link seals, and accessories.

3. Resilient seated gate valve, box, and concrete collar, paid as unit item.

   a. Payment for all valves, tapping valves, flushing hydrants, meters, and corporation stops shall be by the unit installed and shall include the cost of furnishing and installation of the valve, valve box and lid, extension stems where required, and the concrete collar.

4. Fiberglass Line Markers

   a. The price bid for the line markers, flat style, shall include furnishing and installing the marker as shown on the Drawings. All other items of work shall be considered incidental.

5. Payment for test meter assembly shall be per unit installed per detail sheets and be lump sum.

6. See unit items on unit code bid list. Non-payment or payment for these items shall include the cost of labor and materials to complete the item. All related work shall be considered incidental.

105-14-03 (8/14)

7. Crushed Rock Temporary Surface Replacement

   a. Payment for this item shall consist of the placement and compaction of dense graded aggregate for temporary replacement of driving surface and shall be for trench width and length limited to 225 pounds per linear foot of length.

   b. Payment for bituminous paving replacement, if applicable, shall be trench width per linear foot.

8. Payment for cut, cap and block shall be paid for by the unit installed and be lump sum, including concrete kicker and all accessories.

END OF SECTION

***

105-14-03 (8/14)

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 MAINTENANCE OF SERVICE IN EXISTING UTILITIES

A. Where the existing utilities must be disturbed during construction under this Contract, their operation and function shall be maintained by the CONTRACTOR to such a degree that service to customers will be interrupted for minimum time periods only. Such disturbances and any maintenance use of these lines shall constitute no cost to the OWNER. **The OWNER shall be notified of interruptions in sufficient time to prepare for them and shall agree to the hour, date, and duration of them before they are undertaken.**

B. Should shutdowns in service be in excess of the time of duration agreed upon, and such excessive shutdown time be due to the CONTRACTOR's negligence, faulty Work and/or inability to perform, then and in that event, the CONTRACTOR shall be held liable to the OWNER for any and all damages that may accrue to the OWNER, by reason of such excessive shutdown periods.

C. Digging through services with trenching machines will not be permitted. Upon damage to utility services, such services shall be repaired immediately and tested to the satisfaction of the ENGINEER. The CONTRACTOR shall notify all utility users of impending interruption of service and shall be responsible for all damage resulting from same. Payment for necessary disconnection and reconnection of utility services shall be included as a part of the CONTRACTOR's bid and no extra compensation will be made for same.

D. The CONTRACTOR shall at all times maintain on hand an adequate supply of repair materials and tools with which to make repair to damaged water, gas and sewer lines. Should the CONTRACTOR inadvertently damage existing utilities, he shall make immediate repair thereto and in no event shall he leave the site before such repair has been made and proven to be successful.

E. As far as possible, the locations and sizes of existing mains are indicated on the Drawings; however, exact locations, pipe materials and sizes cannot be guaranteed. It shall be the responsibility of the CONTRACTOR to locate and uncover existing lines, to which new mains are to be connected, and provide all connecting fittings of the correct size and type for each connection. Payment for the above shall be included in the unit price bid for each item used for the connection as indicated on the Drawings or as specified.

F. Where existing structures and equipment at the treatment plant or station are disturbed during construction under this Contract, their operation and function shall be maintained by the CONTRACTOR to such degree that the treatment process will not be impaired. Such maintenance shall constitute no extra cost to the OWNER.

105-14-03 (8/14)

1.02 PROPERTY PROTECTION

A. Care is to be exercised by the CONTRACTOR in all phases of construction, to prevent damage and/or injury to the OWNER's and/or other property. Payments for the repair and restoration are limited as set forth in "Conflict With or Damage to Underground Facilities" of the Supplementary General Conditions.

B. The CONTRACTOR shall avoid unnecessary injury to trees and shall remove only those **authorized** to be removed by written consent of the OWNER. Fences, gates, and terrain damaged or disarranged by the CONTRACTOR's forces shall be immediately restored in their original condition or better.

1.03 CONSTRUCTION WARNING SIGNS

A. The CONTRACTOR shall provide construction warning signs for each location where he is working in the State highway right-of-way or in county roads. He will further provide flagmen as required and shall abide by all Kentucky Transportation Cabinet, Department of Highways safety rules, including size, type and placement of construction signs. All signs shall be of professional quality.

1.04 RESIDENT PROJECT REPRESENTATIVE OFFICE

A. Not required this Contract.

1.05 RESPONSIBILITY FOR TRENCH SETTLEMENT

A. The CONTRACTOR shall be responsible for any settlement caused by the construction, that occurs within 1 year after the final acceptance of this Contract by the OWNER. Repair of any damage caused by settlement shall meet the approval of the OWNER.

1.06 DAMAGE TO CROPS, LIVESTOCK AND VEGETATION

A. The CONTRACTOR shall protect crops, livestock and vegetation against damage or injury from construction operations at all times. Crops damaged or equipment access obtained outside of the easements provided shall be the responsibility of the CONTRACTOR. Temporary fences shall be provided at no extra cost to the OWNER wherever necessary to keep livestock away from the construction area. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Damaged limbs shall be trimmed and damaged tree trunks shall be treated with wound dressing.

1.07 WASTE DISPOSAL

A. The CONTRACTOR shall dispose of waste, including any hazardous waste, off-site in accordance with all applicable laws and regulations.

105-14-03 (8/14)

1.08 CONTRACTOR'S TRAILERS AND MATERIAL STORAGE

A. The location of the CONTRACTOR'S and Subcontractors' office and work trailers and parking areas on the project site shall be subject to the OWNER's approval.

B. The location of the CONTRACTOR's and Subcontractors' material storage yards on the project site shall be subject to the OWNER's approval.

1.09 CONSTRUCTION IDENTIFICATION SIGNS

A. The CONTRACTOR shall furnish and erect 2 project identification signs if such are required.

B. The CONTRACTOR shall obtain the OWNER'S permission before erecting any construction signs not specifically required by the Contract.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

***

105-14-03 (8/14)

SECTION 02610

PRESSURE PIPE

PART 1 GENERAL

1.01 SUMMARY

A. For Cover Pipe and Boring and/or Jacking see Section 02326.

1.02 SUBMITTALS

A. Prior to the shipment of any pressure pipe to the project site, the CONTRACTOR shall submit to the ENGINEER a bill of materials and shop drawings for all interior and exterior piping, in the number of copies listed in Special Conditions.

B. Supplemental Submittal Requirements

1. Shop drawings are not required.

2. All testing and certification requirements for descriptive literature remain as described.

PART 2 PRODUCTS

2.01 MATERIALS - PRESSURE PIPE

A. Ductile Iron Pipe - Mechanical and Rubber Slip Joint Type

1. Pipe

a. General

(1) Ductile iron pipe shall be furnished for all piping 3 inches and over in size designated "D.I." on Drawings and shall be designed in accordance with ANSI/AWWA C150/A21.50-02 and ANSI/AWWA C151/A21.51-02 specifications and supplements thereto, and for pressures and conditions as stated in Article b.(1) below.

b. Design Conditions

(1) Pressure: Minimum 200 to 350 psi operating pressure, as shown in Table 50.14 below, plus 100 psi water hammer allowance.

(2) Trench Loading: Laying Condition Type 3, depth of cover as shown on Drawings.

105-14-03 (8/14)

c. Metal Design Strength PSI (Minimum)

Tensile Strength	60,000
Yield Strength	42,000
Percent Elongation	10

d. Minimum Nominal Thickness

(1) Minimum design thicknesses for 200 through 350 psi operating pressures, depths of cover, trench loading and other conditions per ANSI/AWWA C150/ A21.50-02 specifications shall be as shown in the following table:

TABLE OF THICKNESSES
FOR DUCTILE IRON PIPE
(TABLE 50.14)

Size	Pressure Class (psi)	Nominal Thickness (in.)	Laying Thickness Type 3 Trench Maximum Depth of Cover (ft.)
3"	350	0.25	99
4"	350	0.25	69
6"	350	0.25	37
8"	350	0.25	25
10"	350	0.26	19

(2) For depths of cover or pressures exceeding those in the above table, refer to ANSI/AWWA C150/A21.50-02 and the thickness class shown on the Drawings.

e. Lengths

(1) Pipe may be furnished in 18 or 20 foot nominal laying lengths.

f. Marking

(1) The net weight, class or nominal thickness, and casting period shall be shown on each pipe. The manufacturer's mark, the year in which the pipe was produced, and the letters "DI" or "DUCTILE" shall be cast or stamped on the pipe.

g. Weighing

(1) Each pipe shall be weighed before application of lining or coating other than standard coating and the weight shown on the outside or inside of the bell or spigot end.

105-14-03 (8/14)

h. Spigot End of Pipe

(1) The spigot end of the pipe shall be free of blemishes and defects which, in the opinion of the ENGINEER, might be responsible for a poor fit with the rubber ring gasket and result in leakage.

2. Fittings

a. General

(1) Ductile iron mechanical joint and restrained joint fittings shall conform to ANSI/AWWA C110/A21.10 Standard for Gray Iron and Ductile Iron Fittings - 3 inch through 48 inch. Mechanical joints and push on joints shall also conform in all respects to ANSI/AWWA C111/A21.11.

(2) Ductile iron compact fittings, meeting the requirements of ANSI/AWWA C153/A21.53, will also be accepted.

(3) Fittings shall be 350 psi pressure rating for sizes through 24-inch and shall be 250 psi rating for sizes above 24 inches unless a higher operating pressure is shown on the Drawings, and in such cases the fitting pressure rating shall be equal to or above the operating pressure. The pressure rating for all compact fittings shall be 350 psi.

(4) Fittings shall be ductile iron meeting the above requirements and shall be furnished complete with all joint accessories.

b. Lining and Coating

(1) All fittings shall be lined and coated the same as adjacent pipe.

3. Joints

a. General

(1) Pipe joints shall be mechanical joint, rubber ring slip joint or locked mechanical joint as shown on the Drawings.

(2) All items used for jointing pipe shall be furnished with the pipe. The joints shall be made with tools and lubricant in strict conformity with the manufacturer's instructions. Copies of the instructions shall be delivered to the ENGINEER at start of construction in sufficient numbers that will permit the ENGINEER to retain 3 copies.

105-14-03 (8/14)

b. Mechanical Joints

(1) Mechanical joints are to be furnished according to ANSI/AWWA C111/A21.11-00. All pipe joints must be furnished complete with all accessories. Mechanical joint bolts and nuts shall be of alloy cast iron or alloy steel (Corten type such as U.S. Alloy) or equal. Rubber gaskets shall be made of plain first grade rubber, free of imperfections and porosity. Hardness shall be 75 ∀ 5 durometer.

c. Rubber Ring Slip Joint (Push On)

(1) Rubber ring slip joint shall be equal to ANSI/AWWA C111/A21.11-00. The joints shall be of the following materials and assembled in the sequence outlined below:

(a) Rubber ring gasket compressed in groove in bell of pipe.

(b) Beveled spigot end of pipe for initial centering into rubber gasket in bell.

d. Locked Mechanical Joints

(1) Locked mechanical joints shall be equal to American Cast Iron Pipe Company's, U.S. Pipe Company's, or Clow Corporation's locked mechanical joint.

4. Lining and Coating

a. Water Service

(1) All ductile iron pipe for water service shall have manufacturer's standard outside bituminous or asphaltic base coating and a cement lining and bituminous seal coat on the inside. Cement mortar lining and bituminous seal coat inside shall conform to ANSI/AWWA C104/A21.3-03.

b. Bitumastic Finish Coat

(1) Only a coal tar outside coating, or other compatible coating, shall be applied to pipe which is to receive a bitumastic finish coat.

105-14-03 (8/14)

B. Ductile Iron Pipe - Flanged, Grooved and Special Coupling

1. Pipe

a. Flanged Pipe

(1) Flanged pipe shall be made in accordance with ANSI/AWWA C115/A21.15-99 Specifications, and shall be thickness Class 53.

(2) Where plain ends of flanged and plain end pipe fit into mechanical joint bells, centrifugally cast pipe shall be used.

(3) Flanged pipe for air and gas service shall be of the weld-neck type.

b. Grooved Pipe

(1) Where flanged ductile iron pipe is shown on the Drawings, grooved joint piping may be substituted where acceptable to the ENGINEER.

(2) Grooved joint piping shall conform to ANSI/AWWA Specification C 606-04.

2. Fittings

a. Flanged Pipe

(1) Flanged joint fittings shall conform to ANSI/AWWA C110/A21.10-03 Standard for Gray Iron and Ductile Iron Fittings - 3 inch through 48 inch.

(2) Fittings shall be 250 psi pressure rating for sizes through 12" and shall be 150 psi rating for sizes above 12" unless a higher operating pressure is shown on the Drawings and in such cases the fitting pressure rating shall be equal to or above the operating pressure.

(3) Fittings shall be gray iron or ductile iron meeting the above requirements and shall be furnished complete with all joint accessories.

3. Joints

a. General

(1) Pipe joints shall be as shown on the Drawings.

105-14-03 (8/14)

(2) All items used for jointing pipe shall be furnished with the pipe. The joints shall be made with tools and lubricant in strict conformity with the manufacturer's instructions. Copies of the instructions shall be delivered to the ENGINEER at start of construction in sufficient numbers that will permit the ENGINEER to retain 3 copies.

b. Flanged Pipe

(1) All ductile iron flanged pipe shall have flanges faced and drilled, 125 pound in accordance with ANSI/AWWA C110/A21.10-03 unless otherwise specified.

(2) Flanges may be cast integrally with the pipe or they may be screwed on specially designed long hub flanges, refaced across both face of flange and end of pipe.

(3) Flanged joints are to be furnished according to ANSI/AWWA C115/A21.15-99 and shall be ductile iron only. Flanged joints shall have 1/8 inch rubber full face gaskets made especially for water pipe use. Bolts for ductile iron flanged pipe must be of standard sizes for pipe to be fitted, and must be black steel, machine bolts with heavy hexagon heads and nuts meeting ANSI B18.2.1 and ANSI B18.2.2, respectively. In unheated vaults, submerged and/or damp locations, bolts and nuts for ductile iron flanged pipe shall be stainless steel.

(4) The American Toruseal Flange Gasket Manufactured by American Cast Iron Pipe Company is an acceptable alternate to the above described gasket.

c. Special Coupling

(1) Flexible couplings for flanged pipe shall be a mechanical joint cast to a special flanged joint using a neoprene O-ring in place of the usual 1/16 inch rubber ring gasket. The mechanical bell and special flanged joint piece shall be of ductile iron (ANSI/AWWA C110/A21.10-03) with bolt circle, bolt size and spacing conforming to ANSI/AWWA C110/ A21.10-03 specifications. Mechanical joint follower flange shall be of ductile iron ASTM A 536 or malleable iron ASTM A 47, Grade 35018 or 32510, with high strength/weight ratio design. Bolts shall be fine grained high tensile malleable iron with malleable iron hexagon nut. Stainless steel nuts shall be used in vaults and wet wells. The couplings shall be equal to Rockwell's 912 Flexible Flanged Coupling Adapter or Dresser's similar coupling. Where pressures may exceed 20 pounds, anchor studs shall be

105-14-03 (8/14)

included with spigots of pipes connected drilled to receive ends of studs.

(2) At locations in flanged pipe where Rockwell No. 912, Dresser Style 127, or equal, adaptors are not shown on the Drawings, the CONTRACTOR may, occasionally at his own cost, for flexibility of installation, use one of the restrained coupling adapters listed above after acceptance by the ENGINEER. In no event shall unrestrained mechanical joints or dresser type couplings be substituted for flanged joints.

4. Lining and Coating

a. Flanged Pipe

(1) Flanged pipe for water and wastewater service shall be cement lined and bituminous coated the same as written herein for ductile iron pipe, mechanical and rubber slip joint type.

C. Polyvinyl Chloride (PVC) Pipe (ASTM)

1. Pipe

a. This Specification covers rigid polyvinyl chloride pipe, hereinafter called PVC pipe, for sizes 3/4 inch through 12 inch.

b. PVC pipe shall be extruded from Class 12454-B polyvinyl chloride material with a hydrostatic design stress of 2000 psi for water at 73.4 degrees Fahrenheit, designated as PVC 1120, meeting ASTM Specifications D 1784-81 for material. Three-fourths inch through 1-1/2 inch water service piping shall be PVC Schedule 40 as specified in ASTM D 1785-76. Two-inch through 12-inch pipe for water main service shall be SDR 17 for 250 psi allowable working pressure at 73.4 degrees Fahrenheit and a safety factor of 2.0, as specified in ASTM D 2241-80.

c. The pipe shall be homogeneous throughout and free from cracks, holes, foreign inclusions or other defects. The pipe shall be as uniform as commercially practical in color.

d. The workmanship, pipe dimensions and tolerances, outside diameters, wall thickness, eccentricity, sustained pressures, burst pressures, flattening, extrusion quality, marking and all other requirements of ASTM D 2241-80 shall be conformed with in all respects.

e. Pipe shall be furnished in 20 foot lengths. The pipe may be double plain end or with bell on one end. Male ends of pipe must be beveled on the outside.

105-14-03 (8/14)

f. Pipe shall have a ring painted around the male end or ends in such a manner as to allow field checking of setting depth of pipe in the socket. This requirement is made to assist construction superintendents and inspectors in visual inspection of pipe installation.

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

h. Pipe must not be exposed to the direct rays of the sun for an extended period of time. If pipe is not to be installed shortly after delivery to the job site, it must be stored in a shaded location.

2. Fittings

a. Ductile Iron

(1) Ductile iron compact fittings shall meet ANSI/AWWA C153/A21.50 or push-in type fittings with appropriate adapters may be used with exterior PVC pipe. All such fittings shall be approved by the pipe manufacturer, and complete data sent to the ENGINEER, including the manufacturer's approval, for review. Use of transition gaskets will not be allowed unless specifically approved by the pipe manufacturer.

D. Polyethylene Pipe for Water Service

1. Pipe

a. Polyethylene flexible pipe for sizes ½ inch through 3 inch water service piping shall be PE 3408, Type III, Grade P34 Class C, DR-11, OD Based for 200 psi working pressure at 73.4° F, meeting ASTM Specification D 1248-81a for material, D 3350-84 for cell classification and AWWA C901-88 Specification for pipe.

b. Pipe shall meet all applicable provisions of the Commercial Standards and shall bear the National Sanitation Foundation (NSF) seal of approval.

2. Fittings

a. Fittings shall be standard bronze fittings as specified for copper tubing in this Section of these Specifications.

105-14-03 (8/14)

E. Polyethylene Pipe for Water Mains

1. Pipe

a. General

(1) Polyethylene pipe and fittings shall comply with the requirements of ASTM D 1248-81a, D 1505-68(1979), D 1693-70(1980), D 1928-80, D 2657-79, D 3035-81, D 2837-76(1981) and D 2321-74(1980).

b. Resins

(1) Only virgin polyethylene resins classified as Type III, Category 5, Grade P34 per ASTM D 3035-81 with densities of 0.955 p/cc maximum and melt index of 0.15 g/10 minutes maximum shall be used in the process of making the pipe. The resin shall contain antioxidants and be stabilized with carbon black.

c. Design

(1) The pipe shall have a long-term strength rating of 1,600 psi or more and be resistant to environmental stress cracking per procedure C of ASTM D 1928-80 for not less than 200 hours. The maximum allowable deflection is 5 percent with the pipe installed in accordance with these Specifications, using backfill material at 130 pounds per cubic foot, H-20 live load plus 50 percent impact but no internal pressure. The live load and impact may be disregarded in the calculations for trench conditions with 8 feet or more cover. Operating pressures are shown on the Drawings. Hydrostatic loading shall be considered when the pipe is to be installed below a permanent water table or body of water.

d. Wall Thickness Calculations

(1) The pipe manufacturer shall furnish calculations to support the pipe wall thickness for these various conditions for the ENGINEER'S review/acceptance before the materials are sent to the job site.

e. Fittings

(1) Fittings shall be molded or fabricated from high-density polyethylene, supplied by the pipe manufacturer and capable of being butt-fused to the polyethylene pipe.

105-14-03 (8/14)

f. Quality

(1) No cracks, holes, foreign material, blisters or other deleterious faults are permitted in the polyethylene pipe. It shall be homogeneous throughout including the heat fused joint. Polyethylene pipe will not be installed containing gouges or cuts that penetrate more than 10 percent of the wall thickness.

g. Water Stops

(1) The pipe manufacturer shall furnish a water-stop assembly for use with the pipe where the pipe passes through a structure wall so as to provide a watertight seal. The assembly shall be attached to the pipe with non-corroding materials.

h. Marking

(1) Each length of polyethylene pipe shall contain the manufacturer's brand name, pipe size and other data to enable an accurate tracing of the raw material source. Polyethylene pipe will not be installed containing gouges or cuts that penetrate more than 10 percent of the wall thickness.

2. Joints

a. Fusion

(1) The fusion equipment shall have hydraulic controls and gauges for monitoring fusion pressures. Also, an engine powered facing unit to trim the irregularities of the pipe ends shall be provided. In addition, the electrically heated and thermostatically controlled plate shall contain a temperature gauge for monitoring the process.

b. Flange Adapters

(1) Threaded or solvent weld joints and connections are not permitted. Flange adapters as manufactured by the pipe supplier shall be used, butt-fused to the pipe and connected to other pipe material using a rubber gasket for sealing.

2.02 SOURCE QUALITY CONTROL

A. Ductile Iron Pipe (Mechanical Joint and Rubber Slip Joint Type)

1. Hydrostatic and physical properties acceptance tests shall be in accordance with ANSI/AWWA Specification C151/A21.51-02 for ductile iron pipe centrifugally cast in metal molds or sand lined molds for water or other liquids.

105-14-03 (8/14)

2. The ENGINEER shall be provided with sufficient copies of each of the tests for each Contract to permit the ENGINEER to retain 3 copies.

3. All items used for jointing pipe shall be tested before shipment.

B. Polyvinyl Chloride (PVC) Pipe (AWWA)

1. The manufacturer shall furnish an affidavit that all delivered materials comply with the requirements of this Specification.

2. Each length of pipe shall be proof tested at four times its rated class pressure.

PART 3 EXECUTION

3.01 TRENCH EXCAVATION - PRESSURE PIPE

A. General

1. Trenching shall include all clearing and grubbing, including all weeds, briars, trees and stumps encountered in the trenching, regardless of size. The CONTRACTOR shall dispose of any such material by burning, burial or hauling away or as noted on the Drawings, at no extra cost to the OWNER. Ornamental shrubs, hedges and small trees (3 inches in diameter or less) shall be removed, protected and replanted, at no extra cost to the OWNER.

2. Trenching also includes such items as railroad, street, road, sidewalk, pipe and small creek crossings; cutting, moving or repairing damage to fences, poles or gates and other surface structures, regardless of whether shown on the Drawings. The CONTRACTOR shall protect existing facilities against danger or damage while pipeline is being constructed and backfilled or from damage due to settlement of the backfill.

3. In case of unclassified excavation, as designated in the Drawings and/or Specifications, the price bid shall include earth, solid rock, roots, street or road surfacing and base concrete and boulders.

4. All excavation shall be open trenches, except where the Drawings call for tunneling, boring or jacking under structures, railroads, sidewalks, roads or highways.

B. Trees and Shrubs

1. Where pipelines run through wooded terrain, cutting of trees within limits of maximum permissible trench widths, as set forth in this article, will be permitted. However, cutting of additional trees on sides of trench to accommodate operating of trenching machine will not be permitted. The

105-14-03 (8/14)

CONTRACTOR shall obtain specific permission of the OWNER before cutting any tree larger than 4 inches in diameter.

C. Highways, Streets and Railroads

1. Construction equipment injurious to paving encountered shall not be used. Curbs, sidewalks, and other structures shall be protected by the CONTRACTOR from damage by his construction equipment.

2. Where trenching is cut through paving which does not crumble on edges, trench edge shall be cut to at least 2 inches deep to straight and neat edges, before excavation is started, and care taken to preserve the edge to facilitate neat repaving.

3. The CONTRACTOR shall so coordinate his work as to produce a minimum of interference with normal traffic on highways and streets. He may, with the approval of the governing agency, close a street to traffic for such length of time considered necessary, provided persons occupying property abutting the street have an alternate route of access to the property which is suitable for their needs during the time of closure. It shall be the responsibility of the CONTRACTOR to give 24 hours advance notice to fire and police departments and to occupants of a street which will be closed, in a manner approved by the governing body.

4. The CONTRACTOR shall maintain road crossings in a passable condition for traffic until the final acceptance of the work, being paid only by unit price for crushed rock used, within limitations as hereinafter specified, except that additional payment for crushed rock, after initial payment, will be allowed only where wheel compacted backfill is specified.

5. The amount of crushed stone placed shall be paid for at the unit price per ton up to the maximum limits of 225 pounds per linear foot of trench over which it is placed for pipe sizes through 16 inches, 300 pounds per linear foot for pipe sizes 18 inches through 24 inches and 400 pounds per linear foot for sizes 27 inches through 48 inches. The ENGINEER shall have control of thickness and width to be placed and paid for, and may order changes in depth and width as conditions dictate. No payment will be made for crushed rock surfacing required as a result of unnecessarily wide trenches, omission of sheeting and shoring, or damage by the CONTRACTOR'S equipment, or for maintenance of surface level.

6. Railroad and Highway Department requirements in regard to trenching, tunneling, boring and jacking shall take precedence over the foregoing general specifications and the following tunneling and boring or jacking specifications, where they are involved. Where work is within railroad right-of-way, Railroad Protective Insurance shall be carried by the CONTRACTOR in the amounts required by the Railroad Company.

105-14-03 (8/14)

7. The insurance policy shall name the railroad as the insured and the original policy shall be delivered to the railroad after submitting same to the OWNER for review. The cost of flagmen required by the railroad and highway departments shall be paid by the CONTRACTOR.

8. Uneven surfaces or humps in the ground encountered and high driveways and road crossings shall be dug through to such depth that pipe may be laid to a reasonably even grade and have minimum cover at the low places. Such places requiring extra depths shall be included in the bid and no extra payment will be made for such extra depths required, which are evident from an examination of the ground before bidding, as required for 1 foot cover over valve nuts, or are indicated on the Drawings.

D. Existing Utilities

1. The CONTRACTOR shall determine, as far as possible in advance, the location of all existing sewer, culvert, drain, water, electric, telephone conduits, and gas pipes, and other subsurface structures and avoid disturbing same in opening his trenches. In case of sewer, water and gas services and other facilities easily damaged by machine trenching, same shall be uncovered without damage ahead of trenching machine and left intact or removed without permanent damage ahead of trenching and restored immediately after trenching machine has passed, without extra cost to the OWNER. he CONTRACTOR shall protect such existing facilities, including power and telephone poles and guy wires, against danger or damage while pipeline is being constructed and backfilled, or from damage due to settlement of his backfill. It shall be the responsibility of the CONTRACTOR to inform the customers of utilities of disruption of any utility service as soon as it is known that it has been or will be cut off.

2. The CONTRACTOR shall, at all times during trenching operations, carry a stock of pipe and fittings likely to be needed for replacement of pipelines to facilitate immediate repair.

E. Pipelines in Same Trench

1. Pipelines, force mains, and sewers laid in same trench shall, in all cases, be bedded on original earth, or other specified bedding materials, regardless of divergence in their elevations, unless otherwise specified. They shall never be laid in unsupporting backfill or one above the other. The CONTRACTOR shall receive full trenching and backfilling unit prices for each pipeline, force main, and sewer so laid, the same as if laid in widely separated trenches.

F. Location of Proposed Pipelines

1. The location of pipelines and their appurtenances as shown are those intended for the final construction. However, conditions may present

105-14-03 (8/14)

themselves before construction on any line is started that would indicate desirable changes in location. Also, development of property traversed may require location changes. In such cases, the OWNER reserves the right to make reasonable changes in line and structure locations without extra cost, except as may be determined by the application of the unit prices bid to the quantities actually involved. The OWNER is under no obligation to locate pipelines so that they may be excavated by machine.

G. Trench Requirements

1. All trenches must be dug neatly to lines and grades.

2. The opening of more than 500 feet of trench ahead of pipe laying and more than 500 feet of open ditch left behind pipe laying, before backfilling, will not be permitted, except upon written consent of the OWNER. No trench shall be left open or work stopped on same for a considerable length of time. In case of objectionable delay trench shall be refilled according to backfill specifications.

3. Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the ENGINEER may order stabilization by various means. Exclusive of dewatering normally required for construction and instability caused by neglect of the CONTRACTOR, it shall be paid for at unit prices set up in the Contract, such as extra excavation, crushed rock for pipe bedding, concrete cradle or piling.

4. Excavation for pipe laying must be made of sufficient width to allow for proper jointing and alignment of the pipe, but not greater than the maximums permitted in the following table:

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

Nominal Pipe Size (Ins.)	Trench Width (Ins.)	Nominal Pipe Size (Ins.)	Trench Width (Ins.)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60

5. Trenches in earth or rock shall be dug as shown on the Drawings and be sufficiently deep to insure a 30 inch or 36 inch minimum cover over water lines and force mains, as noted on the Drawings. Depths of trenching shall also be adequate for at least l foot minimum cover over valve nuts. In order to eliminate the necessity for digging bell holes into the trench subgrade by hand and to insure an earth cushion under the pipe for uniform bearing, trench depth shall be the cover requirement plus outside diameter of barrel of pipe plus the required bedding cushion. The cushion construction requirement shall also apply to tunnels.

105-14-03 (8/14)

6. Wherever it is deemed necessary by the ENGINEER to lay the pipes to an extra depth exceeding the depths required by the Drawings and Specifications and not apparent from unevenness of ground, the CONTRACTOR will be paid for such excavation under extra excavation in earth at the price bid per cubic yard, computed on the basis of maximum trench widths in the preceding table. In unclassified excavation contracts the same width limitations will apply.

7. Trench line stations and locations of accessories will be set ahead of the trenching. These will be set at least each 100 feet of pipeline. Trenches must be dug true to alignment of stakes. Alignment of trenches or pipes in trench must not be changed to pass around obstacles such as poles, fences and other evident obstructions without the permission of the ENGINEER. Lines will be laid out to avoid obstacles as far as possible, contingent with maintenance of alignment necessary to finding pipeline in the future and avoiding obstruction to future utilities.

H. Damage to Existing Structures

1. Hand trenching is required, at no extra payment, where undue damage would be caused to existing structures and facilities by machine trenching.

2. In case of damage to any existing structures, repair and restoration shall be made at once and backfill shall not be replaced until this is done. In all cases, restoration and repair shall be such that the damaged structure will be in as good condition and serve its purpose as completely as before, and such restoration and repair shall be done without extra charge, except as set forth under the applicable provisions of the General and Special Conditions. Where there is the possibility of damage to existing utility lines by trenching machine, the CONTRACTOR shall make hand search excavation ahead of machine trenching, to uncover same, at no extra cost to the OWNER.

I. Excavation Unclassified

1. Excavation for pipelines shall be unclassified and the cost of all excavation of whatever nature and state, including solid rock, shall be included in the CONTRACTOR'S unit price bid for furnishing, trenching, laying and backfilling the pipe.

2. Excavation for structures such as manholes, pump stations, and vaults is likewise unclassified and the cost of all excavation of whatever nature and state, including solid rock, shall be included in the CONTRACTOR'S lump sum or unit price bid, as the case may be.

105-14-03 (8/14)

J. Dewatering of Trenches

1. Dewatering of trenches shall be considered a part of trenching, at no extra cost to the OWNER. Dewatering of trenches shall include groundwater and storm or sanitary sewage. Suitable pumping and other dewatering equipment is to be provided by the CONTRACTOR, to insure the installation of the pipeline structure in a dewatered trench and under the proper conditions. Dewatering shall include all practical means available for prevention of surface runoff into trenches and scouring against newly laid pipe.

2. Piles of excavated materials shall be trenched or temporarily piped to prevent, as far as practical, blockage of drainage ditches and gutters, and water carriage of excavated materials over street and highway surfaces.

3.02 LAYING PRESSURE PIPE

A. General

1. Inspection of Materials

a. All pipe, fittings and accessories shall be subject to an inspection by the OWNER at the job site. Any damaged materials shall be repaired or replaced to the satisfaction of the OWNER. Should repairs to the piping materials be necessary, then same shall be made in the presence of the ENGINEER using proven methods prescribed by the pipe manufacturer.

b. The OWNER'S inspection of materials shall in no way relieve the CONTRACTOR of his responsibility.

2. Laying Requirements

a. Pressure pipe shall be laid to lines, cover or grades shown on the Drawings.

b. Pipes must be swabbed out before lowering into trench. In the case of pipelines 4 inch through 20 inch, a swab must also be dragged through the pipe after it is in place. Larger size pipe shall be visually inspected for cleanliness and proper jointing.

c. The points insisted upon in the laying of pipe will be: Proper alignment, evenness of width and depth of joints, perfection in jointing, and care of the pipe in handling. For air and gas lines, proper coating and wrapping, electrical inspection and blow-down (purging of air in case of gas lines) of pipes are also essential and will be required.

d. Precautions must be taken to prevent flotation of the pipe should water enter the trench prior to putting the pipeline into operation.

105-14-03 (8/14)

e. In wet, yielding and mucky locations where pipe is in danger of sinking below grade or floating out of grade or alignment, or where the backfill materials are of such a fluid nature that such movements of the pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective. If crushed rock fill beneath the pipe is necessary for stability, it will be paid for at the unit price bid per ton of such material in place except in cases where instability is caused by neglect of the CONTRACTOR.

f. Whenever pipe laying is stopped, the end of the pipe shall be securely plugged with plywood or the manufacturer's standard plug held in place by jute packing, caulked into place. For air or gas lines, an expandable pipe plug, or similar conical plug, held in place by proper bracing or backing is required.

g. Elbows, plugs, dead end valves, and tees shall be firmly blocked, as shown on the Drawings, to prevent internal pressure from springing the pipe from the intended alignment, with permanent materials solidly placed without covering pipe joints. Restrained type pipe joints may be substituted for thrust blocks with the ENGINEER'S permission. Pipe shall be free of all structures, other than manholes.

h. No pipe shall be laid resting on solid rock, blocking or other unyielding objects. Jointing before placing in the trench and subsequent lowering of more than one section jointed together may be allowed, subject to the ENGINEER'S permission.

3. Installing Water Pipe in Cover Pipe

a. Installation of water pipe in cover pipe is covered in Section 02326 of these specifications.

B. Laying Ductile Iron Pipe

1. Bedding and Backfilling

a. The laying condition shall be Type 3 specified in ANSI/AWWA C600-05. The pipe shall be bedded in 4 inches minimum loose soil and the hand placed loose soil backfill lightly consolidated to the top of the pipe. "Loose soil" or "select material" is defined as native soil excavated from the trench, free of rocks, foreign materials and frozen earth.

105-14-03 (8/14)

b. The selected material shall be hand placed to a point 12 inches above the barrel of the pipe. After the specified backfill is hand placed, rock may be used in machine placed backfill in pieces no larger than 8 inches in any dimension and to an extent not greater than one-half the volume of the backfill materials used.

c. The top 12 inches of backfill shall contain no rock over 1-1/2 inches in diameter nor pockets of crushed rock.

d. Larger rock fill will be allowed in wide trenches where side slopes are low enough to prevent rock from dropping over pipeline. If additional earth is required, it must be obtained and placed by the CONTRACTOR. Filling with rock and earth shall proceed simultaneously, in order that all voids be filled with earth.

e. If select material is not available from the trench excavation, or if the CONTRACTOR so desires, he may use crushed stone bedding and backfill to the top of the pipe at no extra cost to the OWNER.

f. Sufficient space, limited to a maximum of 2 feet length, shall be left out of the specified earth or crushed stone bedding to facilitate proper jointing of the pipe.

g. No pipe shall be laid resting on solid rock, blocking or other unyielding objects. Jointing before placing in the trench and subsequent lowering of more than one section may be allowed, subject to the ENGINEER'S permission.

2. Installation of Pipe

a. Ductile iron pipe shall first be thoroughly cleaned at joints, then joined according to instructions and with tools recommended by the pipe manufacturer. Sufficient copies of the manufacturer's installation instructions shall be furnished the ENGINEER to permit the ENGINEER to retain 3 copies. One copy shall be available at all times at the site of the work.

b. All pipes must be forced and held together or "homed" at the joints before bolting. Pipe must be aligned as each joint is placed, so as to present as nearly true, straight lines and grades as practical, and all curves and changes in grades must be laid in such manner that one-half of the maximum allowable deflection shown in the pipe manufacturer's catalog is not exceeded.

c. Concrete blocking of fittings shall be as specified hereinafter in this Specification Section 02610.

d. Cutting of pipe may be done by special pipe cutters as the CONTRACTOR may elect, but the CONTRACTOR will be held responsible for breakage or damage caused by careless cutting or

105-14-03 (8/14)

handling. Cut edges of the pipe shall be made smooth and a bevel formed on the exterior of the pipe barrel when using rubber gasket type pipe.

C. Laying of Flanged or Threaded Pipe and Fittings (Interior)

1. Installation - General

a. The CONTRACTOR shall thoroughly clean the pipe and fittings before starting erection. All scale, rust and dirt shall be removed by power brushing and/or solvent cleaning.

b. The erection of piping requires that it progress from the equipment it is connected to, after the equipment has been accurately leveled and aligned, without putting a strain on same. The pipe shall be erected in a workmanlike manner with runs in the true horizontal or vertical plane or as shown on the Drawings.

c. The piping shall be supported by standard pipe hangers or piers rather than by the equipment. The pipe shall be free of all openings in walls and slabs when the final position of the piping is attained and before sealing the annular space about the pipe.

2. Flanged Joint Connection

a. All flanged type connections shall be made using an acceptable gasket and bolts. The bolts shall be tightened evenly to compress the gasket. Care is to be taken not to distort the flanges and/or piping by overtightening the bolts.

3. Threaded Joint Connection

a. All threads shall be full, complete and made with sharp dies. The ends of the pipe shall be reamed to remove all burrs and all threads must be free of rust and other foreign matter at the time the red lead thread compound is applied. Other thread compounds must be acceptable to the ENGINEER before use.

b. Pipe threads shall be tapered and in accordance with API Standard 5B. Not more than 3 threads at each joint may be exposed after the connection is made.

c. Unions shall be included to allow for proper assembly and disassembly of each run of pipe. Provide a union on each run of pipe connecting to threaded valves, devices and equipment.

105-14-03 (8/14)

D. Laying Plastic Pipe

1. Bedding and Backfill

a. Existing earth bedding and backfill shall be used in lieu of crushed stone. In areas where rock is encountered, the CONTRACTOR shall use No. 9 crushed stone for 6 inches of crushed stone bedding and 12 inches of stone backfill. The CONTRACTOR is to provide full crushed stone, as specified, in all traffic areas, road and driveway crossings. Compaction of the earth and sand backfill materials is required and shall be in accordance with ANSI/AWWA C605.

b. Similar material shall be used for haunching up to the spring line of the pipe and it shall be worked under the haunch of the pipe to provide adequate side support. The crushed stone meeting the requirements of Class I (ASTM D 2321-74 (1980)) shall then be hand placed to a point 12" above the top of the pipe. The remaining backfill, except for the top 12" which shall contain no rock over 1-1/2" diameter nor pockets of crushed rock, may be excavated material containing no rock over 8" in any dimension. Larger rock will be allowed in wide trenches where side slopes are low enough to prevent rock from dropping over pipeline. If additional earth is required, it must be obtained and placed by the CONTRACTOR. Filling with rock and earth shall proceed simultaneously, in order that all voids may be filled with earth.

c. Sufficient space, limited to a maximum of 2 feet length, shall be left out of the bedding to facilitate proper jointing of the pipe.

d. No pipe shall be laid resting on solid rock, blocking, or other unyielding objects. Jointing before placing in the trench and subsequent lowering of more than one section may be allowed subject to the ENGINEER'S permission.

2. Installation of Polyvinyl Chloride (PVC) Pressure Pipe

a. Prior to laying, all PVC pipe shall be stored in a shaded place for protection from the direct rays of the sun. Pipe shall be distributed from storage as the work progresses as permitted by the ENGINEER.

b. The pipe, fittings, and valves shall be placed in the trench with care. Under no circumstances shall pipe or other materials be dropped or dumped into the trench. The pipe shall not be dragged in a manner which would cause scratching of the pipe surface. An excessive amount of scratching on the surface of the pipe will be considered cause for rejection.

105-14-03 (8/14)

c. Sufficient copies of the pipe manufacturer's instructions for installing the pipe and accessories shall be furnished the ENGINEER by the CONTRACTOR to permit the ENGINEER to retain 3 copies. A copy is to be available at the job site at all times.

d. Concrete blocking of fittings, as hereinafter specified, shall be required for PVC pipe with slip joints and rubber gaskets.

e. All dirt, dust and moisture shall be removed from the bell and spigot ends of pipes to be jointed. Insert gasket in bell. Apply the lubricant to spigot and gasket being careful to keep both ends free of dirt. The joint shall be homed to stop mark on spigot end of pipe. All jointing shall be done in accordance with pipe manufacturer's recommendations.

f. All cutting of the pipe shall be done in a neat and workmanlike manner with the least amount of waste of pipe involved and without damage to existing or new lines. A fine tooth saw, tubing cutter or similar tool can be used to cut the pipe. Cut must be square and ragged edges removed with a cutting tool and/or file. A bevel or taper on the exterior of each spigot is required.

E. Blocking of Pipe at Bends and Ends

1. Horizontal Bends

a. Concrete backing and/or blocking required at bends in the horizontal plane shall be accomplished per detail on the Drawings. The square footage of blocking area shall be obtained from Tables "A" and "B" through the following procedure:

Step No. 1 - From Table "A," select type soil and bearing area factor for particular fitting to be blocked.

Step No. 2 - From Table "B," select multiplier to be used for the size pipe being blocked and its test pressure.

Step No. 3 - Calculate actual bearing area required by multiplying bearing area factor from Table "A" by multiplier from Table "B" (e.g. - 16 inch tee with 250 psi test pressure in sandy clay - 9.42 x 1.78 = 16.7 S.F. of bearing area required). Bearing area shall in no case be less than the minimum shown in Table "B."

TABLE "A"

		Bearing Area Factor for Degree of Bend (Square Feet)				
Type Soil	Soil Bearing Pressure (PSF)	90°	Plug/Tee	45°	22 1/2°	11 1/4°
Sandy Clay	3,000	13.33	9.42	7.21	3.68	1.85

105-14-03 (8/14)

Hard Clay	6,000	6.66	4.71	3.61	1.84	0.92
Shale	12,000	3.33	2.36	1.80	0.92	0.46
Solid Rock	16,000	2.50	1.77	1.35	0.69	0.35

TABLE "B"

Pipe Dia. (In.)	Min. Bearing Area (S.F.)	Multiplier for Pipe Test Pressure (TP) (TP) 350 psi	(TP) 300 psi	(TP) 250 psi	(TP) 200 psi	(TP) 150 psi	(TP) 100 psi	(TP) 50 psi
4	1.0	0.16	0.13	0.11	0.09	0.07	0.04	0.02
6	1.0	0.35	0.30	0.25	0.20	0.15	0.10	0.05
8	1.0	0.62	0.53	0.44	0.36	0.27	0.18	0.09
10	1.0	0.97	0.83	0.69	0.56	0.42	0.28	0.14

b. Consideration will be given to the use of restrained type mechanical joint pipe and fittings in lieu of concrete blocking. Use of the restrained joint pipe and fittings is subject to review and acceptance by the ENGINEER of the locking-method and adequacy of design for pressures involved.

2. Vertical Bends

a. The use of vertical bends in lieu of extra depth trenching shall be subject to permission by the ENGINEER.

b. Where the CONTRACTOR elects to use vertical bends, or where vertical bends are called for on the Drawings, the CONTRACTOR shall submit the blocking design, including calculations, to the ENGINEER for review and acceptance. Anchorages shall be designed to resist thrusts caused by the internal test pressure in the pipe. Protection against corrosion shall be inherent in the design.

F. Supplemental Backfilling Information

1. General

a. Excavated materials from trenches and tunnels, in excess of quantity required for trench backfill, shall be disposed of by the CONTRACTOR. It shall be the responsibility of the CONTRACTOR to obtain location or permits for its disposal. Unit prices for trench excavation, tunneling, and backfill shall include the cost of disposition of excess excavated materials, as set forth herein, with no additional compensation being allowed for hauling.

105-14-03 (8/14)

b. Where sod is destroyed in areas maintained equivalent to residence yards, it shall be replaced on slightly ridged backfill on trench, and where destroyed in areas adjacent to the trench, it shall be replaced by the CONTRACTOR with fresh sod, all of which will be paid for at a unit price bid per foot of pipeline. The timing of resodding shall be controlled by the ENGINEER. Ground shall be prepared and fertilized as herewith specified for seeded areas. In small patches, supplying of 3 inches of topsoil and raking may be substituted for disking.

c. Where pastures, thin grass or cover crops are destroyed by trenching, laying, backfilling, or tunneling operations, surface shall be prepared by disking, fertilizing, and seeding, as specified in Section 02930. Seeding and fertilizing shall be included in the price for trenching and backfilling. The timing of this operation shall be controlled by the ENGINEER. Requirements of the Department of Highways for reseeding shall take precedence over these Specifications.

d. No extra charge shall be made for backfilling of any kind, except as specified. Backfilling shall be included as a part of the price for trenching. No extra charge shall be made for supplying outside materials for backfill except where fills above existing ground are necessary and payment is designated on Drawings or in Specifications. If backfilling of the trench or surface restoration is not properly completed, a proportionate part of the unit price for trenching shall be retained from payment estimates.

e. Before completion of the Contract, all backfills shall be reshaped, holes filled, and surplus materials hauled away and all permanent walks, street, driveways, and highway paving and sod replacement (if such surface replacement items are included in the Contract) and reseeding performed.

f. Backfill material must be uniformly ridged over trench, and excess hauled away. Ridged backfill shall be confined to the width of the trench and not allowed to overlap onto firm original earth, and its height shall not be in excess of needs for replacement of settlement of backfill.

g. All rock, including crushed rock or gravel from construction, must be removed from yards and fields. Streets and walks shall be broomed to remove all earth and loose rock immediately following backfilling.

2. Special Requirements

a. In case of street, highway, railroad, sidewalk and driveway crossings or within any roadway paving, or about manholes, valve

105-14-03 (8/14)

and meter boxes located in such paving, the following backfill material and procedure is required at no additional cost.

b. The pipe shall be bedded in 6 inches minimum depth (for pipe sizes through 16 inches) of No. 9 crushed stone.

c. Similar material shall be used for haunching up to the spring line of the pipe, and it shall be worked under the haunch of the pipe to provide adequate side support. The crushed rock shall then be hand placed to a point 12 inches above the top of the pipe.

d. After the above bedding and selected backfill have been placed, fill trench to within 6 inches of the surface with No. 9 crushed stone, uniformly distributed, or other gradation acceptable to the ENGINEER. In order to accommodate compacted temporary surfacing it may be necessary to bulkhead or otherwise confine the stone fill at the open end of the trench.

e. Temporary surfacing of street, highway, railroad, sidewalk and driveway crossings, or within any roadway paving, or about manholes, valve and meter boxes located in such paving, shall consist of 6 inches compacted depth of crushed stone as specified under Section 02235 for temporary walkway or road surfacing, placed and compacted in the trench. Compaction shall be accomplished by methods which shall be sufficient to confine stone to the trench under normal traffic. Backfills shall be maintained easily passable to traffic at original paving level until acceptance of project or replacement of paving or sidewalks.

f. Railroad Company and Department of Highways requirements in regard to backfilling will take precedence over the above general specifications where they are involved.

G. Cut-Ins, Tie-Ins, and Cutting and Plugging

1. The OWNER shall not be responsible for extra costs of cut-ins, tie-ins, cutting and plugging, due to water not being entirely cut off by the existing water main valves.

2. A cut-in is defined as the removal of one section of existing pipeline (2 cuts of pipe) and insertion of one or more new pipeline connections therein.

3. A tie-in is defined as the removal of an existing plug or cap and the connecting of the new pipeline into the existing pipeline or fitting or valve at the joint opened by such removal.

4. A cutting and plugging is defined as the cutting and installation of a plug in an existing line.

105-14-03 (8/14)

3.03 FIELD QUALITY CONTROL

A. Testing Polyvinyl Chloride (PVC) or Polyethylene Pressure Pipe During Construction Period

1. Prior to pressure testing the pipe shall be center loaded with backfill to prevent arching and whipping under pressure. Center loading shall be done carefully so that joints will be completely exposed for examination during testing unless conditions warrant complete backfill before testing.

2. During the general construction period the following pressure testing procedure shall be followed: (on sections that can be separately isolated)

3. After the PVC pipe is assembled in the trench a test of not more than 30 percent above the system's anticipated working pressure shall be applied with either air or water. After 2 consecutive tests have been performed without any failure, the CONTRACTOR at his option and with the ENGINEER'S permission may discontinue testing until the system is completed. Testing shall then be performed as outlined herein in this Section.

B. Testing Pressure Pipe for Leakage

1. The CONTRACTOR will be required to test all pipelines (except gas and air lines) and appurtenances with water. The maximum test pressure, measured at the lowest elevation of the pipeline being tested, shall be the pressure class of the pipe unless a specific test pressure is shown on the Drawings.

2. When the line or section being tested is pumped up to the required pressure, it shall be valved off from the pump and a pressure gauge placed in the line. The pressure drop in the line, if any, shall be noted. If no pressure drop is noted in 4 hours, the ENGINEER, at his discretion, may accept the line or section as being tested, or he may require the test run the full 24 hours.

3. At the end of the 24 hour test period, the pressure shall be recorded. If there is a drop in pressure, the CONTRACTOR will be required to pump the section being tested up to initial test pressure and maintain that pressure for 24 hours, measuring the amount of water required to accomplish this. The line will not be accepted until the leakage shall prove to be less than 10 gallons per inch diameter per mile of pipe per 24 hours.

4. Should there be leakage over the allowable amount, the CONTRACTOR will be required to locate and repair the leaks and retest the section. It is suggested, but not required, that the CONTRACTOR have a geophone (underground listening device) on the job at time of testing. This has proven very helpful in the past in locating leaks.

105-14-03 (8/14)

5. If the leakage of a section of pipeline being tested is below the allowable amount, but a leak is obvious, in the opinion of the ENGINEER, due to water at the surface of the ground, or by listening, the leak can be heard underground with the geophone, or any other means of determining a leak, the CONTRACTOR will be required to repair those leaks.

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

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

C. Disinfection

1. Upon completion of the work and cleaning up, and prior to final acceptance, the CONTRACTOR shall disinfect all water lines constructed which are to carry treated water.

2. Prior to starting disinfection, all water mains must be thoroughly flushed to remove mud, rocks, etc. Disinfection will then be accomplished by the adding of a chlorine solution while filling the main to obtain the initial 50 ppm of chlorine. The CONTRACTOR shall supply all equipment, labor, chemicals, etc., necessary for flushing and disinfecting the mains. The CONTRACTOR shall submit, in writing, to the ENGINEER, the method he proposes to use for adding the chlorine.

3. The calcium hypochlorite granule or tablet method shall not be used.

4. Disinfection shall be accomplished by filling the new and/or repaired portions of the system with water having a chlorine content of at least 50 parts per million and at the end of a 24 hour contact time a residual of at least 25 parts per million shall remain. At the end of the 24 hour contact period, all the sterilized surfaces and areas shall be thoroughly flushed from the water system. Chlorinated water shall be disposed of in accordance with 401 KAR 5:031 and 8:020, which state that the allowable in stream concentration of chlorine is 10 ug/l, which is equal to 0.01 mg/l. The CONTRACTOR shall submit, in writing to the ENGINEER, the method he proposes for dechlorinating. Recommended chemicals, as given in AWWA C651-05, are sulfur dioxide, sodium bisulfate, sodium sulfite, and sodium thiosulfate.

5. For tie-ins to an existing system such as tapping valves where keeping the main out of service would restrict service to existing customers, disinfection shall, at the ENGINEER'S discretion, consist of thoroughly cleaning the new part with a solution containing not less than 200 mg/l (ppm) chlorine.

105-14-03 (8/14)

6. After initial disinfection and flushing, the OWNER will collect water samples for bacteriological testing. A core zone, which includes up to the first 2 mile, shall be established. Two samples shall be taken from the core zone. Additionally, 1 sample taken from each mile of new distribution main shall be submitted to the cabinet. A new or routine replacement main shall not be placed in service until negative laboratory results are obtained on the bacteriological analyses. Sample bottles shall be clearly identified as "special" construction tests. If any of the samples are found to be positive or contain confluent growth, the CONTRACTOR shall repeat the disinfection procedure until the required numbers of negative samples are obtained at no cost to the OWNER.

7. The cost of all water used shall be billed to the CONTRACTOR by the OWNER for all water used at a rate determined by the OWNER in disinfection, flushing, and attaining satisfactory bacteriological testing for furnishing, trenching, laying, and backfilling the pipe. The cost of a testing lab, bottles, etc. shall be the responsibility of the CONTRACTOR at no additional cost to the OWNER.

END OF SECTION

***

105-14-03 (8/14)

SECTION 02700

SEWER AND DRAIN PIPE

PART 1 GENERAL

1.01 SUMMARY

A. All pipe and accessories supplied for use on this project shall be as specified herein.

B. All pipe supplied for this Project shall be of the pipe material called for on the Drawings.

1.02 RELATED WORK

A. For cover pipe and boring and/or jacking see Section 02326.

B. For tunnel liner plates and tunneling see Section 02300.

1.03 REFERENCES

A. Where referenced specifications (ASTM, AWWA, etc.), are mentioned, these standards are deemed to be the minimum standard of quality of materials or methods to apply to this project.

1.04 SUBMITTALS

A. Copies of the manufacturer's directions for handling and installing the particular pipe supplied and accepted by the ENGINEER shall be furnished to the ENGINEER at the first delivery of pipe to the project in numbers that will permit the ENGINEER to retain three copies.

B. The manufacturer's instructions shall be strictly followed unless a conflict exists between the manufacturer's instructions and those contained herein. In such cases, the ENGINEER shall determine which methods are to be followed and no pipe shall be installed until the CONTRACTOR has received written instruction from the ENGINEER as to which procedure to follow.

1.05 QUALITY ASSURANCE

A. Where pipe enters manholes, the pipe manufacturer shall certify that their pipe is compatible with the watertight, flexible seal to be used at manhole openings as specified in Section 03480 of these Specifications, and that their combined use will produce a flexible watertight installation.

105-14-03 (8/14)

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. All pipe, fittings and jointing materials shall be of one manufacturer unless different types are shown on the Drawings or otherwise accepted by the ENGINEER.

2.02 MATERIALS - SEWER AND DRAIN PIPE

A. Sewer Transition Joints

1. Where sewer pipes of different materials are to be joined, i.e., VC pipe to DI pipe, VC pipe to PVC pipe, or some other combination, an adapter made for this purpose shall be used. The adapter shall be made of polyurethane or polyvinyl chloride with stainless steel clamps and shall be equal to Can-Tex C-T Adapter, Can-Tex Industries, Cannelton, Indiana; or Fernco Adapter by Fernco Joint Sealer Company, Ferndale, Michigan.

B. PVC (Polyvinyl-Chloride) Sewer Pipe

1. Pipe

a. PVC pipe 4 inch through 15 inch diameter supplied for use on this project shall be Type PSM Polyvinyl Chloride (PVC) Sewer Pipe as specified per ASTM D 3034. PVC pipe 18-inch through 27-inch diameter shall be as specified in ASTM F 679.

b. The pipe shall be made of PVC plastic having a cell classification of 12454 as defined in ASTM D 1784. Compounds having different cell classifications due to one or more properties being superior to those of the specified compound are acceptable. Clean rework material, generated from the pipe manufacturer's pipe or fittings production may be used by the same manufacturer provided the reworked products meets the requirements stated herein.

c. The pipe shall be homogeneous throughout, free of cracks, holes, foreign inclusions or other injurious defects. The pipe shall be uniform in color, wall thickness, density and other physical properties. The maximum laying length for all PVC pipe supplied shall be 13.0± feet. Wall thickness shall be SDR-35 per ASTM D 3034 or ASTM F 679. Marking and identification of pipe shall be per ASTM D 3034 or ASTM F 679 as applicable.

d. The maximum laying length for all PVC pipe supplied shall be 14.0± feet.

e. PVC pipe for use on interior piping shall meet the general specification for exterior piping with the socket dimensions conforming to Table 4 of ASTM D 3034.

105-14-03 (8/14)

2. Fittings

a. PVC fittings supplied for use on this project shall meet all the physical and quality requirements as hereinbefore specified for PVC pipe.

b. Where 90° bends are used, they shall be the long radius type.

c. PVC fittings for 4 inch through 15 inch diameter pipe shall meet the dimensional requirements of the tables as shown in ASTM D 3034 except that saddle type wyes or tee branches shall not be allowed for use on new sewer mains. Where 90° bends are used, they shall be the long radius type. PVC fittings for 15 inch through 27 inch diameter pipe shall conform to the requirements of ASTM F 679.

3. Joints - Exterior Piping

a. Joints for PVC pipe and fittings for sewer mains and exterior plant gravity sewers shall be of the "Push-On Type" composed of an elastomeric ring gasket compressed in the annular space between a bell end or socket and spigot end of the pipe.

b. All surfaces of the bell, socket or spigot end of the pipe against which the ring gasket may bear shall be smooth, free of cracks or other imperfections that could adversely affect the sealing capacity of the joint.

c. Lubricant for use in assembling joints shall be supplied with the pipe or be of the specific manufacturer as recommended by the pipe manufacturer for use with the specific pipe supplied. The lubricant shall not cause deterioration of either the elastomeric ring gasket or pipe material.

d. Where PVC pipe and fittings are connected to piping of other materials, the manufacturer's standard adapters or transition pieces shall be used. Should manufacturer not produce an adapter for a specific pipe of other material, the adapters or transition fittings as specified in this section of these Specifications shall be used.

4. Joints - Interior Piping

a. Joints for PVC pipe and fittings for interior piping systems shall be the solvent weld type.

b. The solvent cement for use with PVC pipe and fittings shall be as specified in ASTM D 2564. The cement shall be provided with the pipe by the pipe manufacturer or be of a specific brand as

105-14-03 (8/14)

recommended by the manufacturer of the pipe unless otherwise accepted by the ENGINEER.

C. Ductile Iron Sewer Pipe

1. Pipe

a. This specification covers 4 to 64 inch ductile iron gravity sewer pipe designated "DI" on the Drawings. Pipe furnished under this Specification shall comply with all provisions of ANSI/ASTM A 746. Maximum design thickness shall be based on depth of cover, trench loadings and other conditions per ANSI/AWWA C150/ A21.50.

b. Metal Design Strength psi (Minimum)

Tensile Strength	60,000
Yield Strength	42,000
Percent Elongation	10

c. The net weight, class or nominal thickness, and casting period shall be shown on each pipe. The manufacturer's mark, the year in which the pipe was produced, and the letters "DI" or "DUCTILE" shall be cast or stamped on the pipe.

2. Fittings

a. Fittings for ductile iron sewer pipe shall be mechanical joint or rubber ring slip joint fittings.

b. Ductile iron mechanical and rubber ring slip fittings shall conform to ANSI/AWWA C110/A21.10 for gray iron and ductile iron fittings. Mechanical joints and rubber slip ring joints shall also conform in all respects to ANSI/AWWA C111/A21.11 and ANSI/AWWA C 153.

c. All fittings shall be manufactured for the size and pressure class of the pipeline in which they are to be used. All fittings shall be furnished complete with all joint accessories.

3. Joints

a. General

(1) Pipe joints shall be mechanical joint, rubber ring slip joint or restrained joint as shown on the Drawings.

(2) All items used for jointing pipe shall be furnished with the pipe. The joints shall be made with tools and lubricant in strict conformity with the manufacturer's instructions. Copies of the instructions shall be delivered to the

105-14-03 (8/14)

ENGINEER at start of construction in sufficient numbers that will permit the ENGINEER to retain 3 copies.

b. Mechanical Joints

(1) Mechanical joints are to be furnished according to ANSI/ AWWA C111/A21.11-95. All pipe joints must be furnished complete with all accessories. Mechanical joint bolts and nuts shall be of alloy cast iron or alloy steel (Corten type such as U.S. Alloy) or equal. Rubber gaskets shall be made of plain first grade rubber, free of imperfections and porosity. Hardness shall be 70 to 75 durometer.

c. Rubber Ring Slip Joint (Push On)

(1) Rubber ring slip joint shall be equal to ANSI/AWWA C111/A21.11-95. The joints shall be of the following materials and assembled in the sequence outlined below:

(a) Rubber ring gasket compressed in groove in bell of pipe.

(b) Beveled spigot end of pipe for initial centering into rubber gasket in bell.

d. Restrained Joints

(1) For Pipe

(a) Restrained joint for push-on type bell with rubber O-ring shall meet the applicable requirements of ANSI/AWWA C111/A21.11. The bell/spigot configuration for the restrained joint shall be such that restraint shall be provided for the joint based on a sustained pressure equal to the pressure class of the pipe without separation.

(b) The restrained joint shall allow the same deflection as standard push-on joint pipe.

(c) Where field welding is required for restrained field cut pipe, the welder shall be properly instructed in the methods and materials for use on ductile iron pipe by the manufacturer, on site.

(2) For Fittings

(a) Where restrained joint fittings are called for, the bell configuration for the fitting shall be the same as for the pipe.

105-14-03 (8/14)

(b) Where fittings with restrained joint bell configurations are not available, restraint materials for use with mechanical joint bell configurations shall be as follows:

(i) Connect mechanical joint bell assemblies with stainless steel, all thread rods.

(ii) Install restraint glands on each side of the fitting. The restraining glands shall be "Meg-A-Lug," as manufactured by EBAA Iron sales, Inc. of Eastland, Texas; "Grip Ring," as manufactured by Romac Industries, Inc. of Seattle, Washington; or equal.

4. Coating and Linings

a. All ductile iron pipe and fittings for gravity sewer service shall be bituminous coated outside in accordance with ANSI/AWWA C151/ A21.51 for pipe and ANSI/AWWA C110/A21.10 for fittings.

b. All ductile iron pipe and fittings for gravity sewer service shall be cement-mortar lined with seal coat in accordance with ANSI/AWWA

2.03 SOURCE QUALITY CONTROL

A. PVC Polyvinyl-Chloride Sewer Pipe

1. Pipe shall be tested and inspected at the factory and inspected at the job site. Testing shall be accomplished in conformance with the following ASTM specifications utilizing the test methods specified therein:

Dimensions	ASTM D 3034 or ASTM F 679 and D 2122
Extrusion Quality	ASTM D 2152
Pipe Stiffness (5%)	ASTM D 2412
Impact Resistance	ASTM D 2444

2. In addition, a typical joint assembly, both gasket type joint and solvent weld joint, shall be tested by a qualified independent laboratory per test requirements of ASTM D 3212. The manufacturer shall submit through the CONTRACTOR sufficient copies of certification and test results for each lot of material represented by shipment to the job site that will permit the ENGINEER to retain 3 copies.

B. Ductile Iron Pipe (Mechanical Joint and Rubber Slip Joint Type)

1. Hydrostatic and physical acceptance tests shall be in accordance with ANSI/AWWA Specification C151/A21.51-81 for ductile iron pipe

105-14-03 (8/14)

centrifugally cast in metal molds or sand lined molds for water or other liquids.

2. The ENGINEER shall be provided with sufficient copies of each of the tests for each Contract to permit the ENGINEER to retain 3 copies.

3. All items used for jointing pipe shall be tested before shipment.

PART 3 EXECUTION

3.01 Trench Excavation - Sewer and Drain Pipe

A. General

1. All excavation shall be open trenches, except where the Drawings call for tunneling, boring or jacking under structures, railroads, sidewalks, roads or highways.

B. Trees and Shrubs

1. Trenching shall include all clearing and grubbing, including all weeds, briars, trees and stumps encountered in the trenching, regardless of size. The CONTRACTOR shall dispose of any such material by burning, burial or hauling away or as noted on the Drawings, at no extra cost to the OWNER. Ornamental shrubs, hedges and small trees (3 inches in diameter or less) shall be removed, protected and replanted, at no extra cost to the OWNER.

2. Where pipelines run through wooded terrain, cutting of trees within limits of maximum permissible trench widths, as set forth in this article, will be permitted. However, cutting of additional trees on sides of trench to accommodate operating of trenching machine will not be permitted. The CONTRACTOR shall obtain specific permission of the OWNER before cutting any tree larger than 4 inches in diameter.

C. Highways, Streets and Railroads

1. Trenching also includes such items as railroad, street, road, sidewalk, pipe, small creek crossings, cutting, moving or repairing damage to fences, poles or gates and other surface structures, regardless of whether shown on the Drawings.

2. The CONTRACTOR shall so coordinate his work as to produce a minimum of interference with normal traffic on highways and streets. He may, with the approval of the governing agency, close a street to traffic for such length of time considered necessary, provided persons occupying property abutting the street have an alternate route of access to the property which is suitable for their needs during the time of closure. It shall be the responsibility of the CONTRACTOR to give 24 hours advance

105-14-03 (8/14)

notice to fire and police departments and to occupants of a street which will be closed, in a manner approved by the governing body.

3. Where located within city streets and/or roads, the opening of more than 200 feet of trench ahead of pipe laying and more than 100 feet of open ditch left behind pipe laying, before backfilling, will not be permitted, except upon written consent of the OWNER. Where located outside roadway or parking areas, longer distances for opening and closure may be allowed provided the longer distance does not affect the safety of the general public. No trench shall be left open or work stopped on same for a considerable length of time. In case of objectionable delay trench shall be refilled according to backfill specifications.

4. Construction equipment will not be approved for use where treads are injurious to paving encountered. Curbs, sidewalks, and other structures shall be protected by the CONTRACTOR from damage by his construction equipment.

5. In case of damage to any existing structures, repair and restoration shall be made at once and backfill shall not be replaced until this is done. In all cases, restoration and repair shall be such that the damaged structure will be in as good condition and serve its purpose as completely as before, and such restoration and repair shall be done without extra charge, except as set forth under the applicable provisions of the General Conditions.

6. Where trenching is cut through paving which does not crumble on the edges, trench edge shall be cut to at least 2 inches deep to straight and neat edges, before excavation is started, and care taken to preserve the edge to facilitate neat repaving.

7. The CONTRACTOR shall maintain road crossings in a passable condition for traffic until the final acceptance of the work, being paid only by unit price for crushed rock used, within limitations as hereinafter specified.

8. Department of Highways requirements in regard to trenching, tunneling, boring and jacking shall take precedence over the foregoing general specifications and the following tunneling and boring or jacking specifications, where they are involved.

D. Existing Utilities

1. The CONTRACTOR shall determine, as far as possible in advance, the location of all existing sewer, culvert, drain, water, electric, telephone conduits, gas pipes, and other subsurface structures and avoid disturbing same in opening his trenches. In case of sewer, water and gas services and other facilities easily damaged by machine trenching, same shall be uncovered without damage ahead of trenching machine and left intact or removed without permanent damage ahead of trenching and restored immediately after machine has passed, without extra cost to the OWNER.

105-14-03 (8/14)

The CONTRACTOR shall protect such existing facilities, including power and telephone poles and guy wires, against danger or damage while pipeline is being constructed and backfilled, or from damage due to settlement of his backfill. It shall be the responsibility of the CONTRACTOR to inform the customers of utilities of disruption of any utility service as soon as it is known that it has been or will be cut off.

2. Where there is the possibility of damage to existing utility lines by trenching machine, the CONTRACTOR shall make hand search excavation ahead of machine trenching, to uncover same, at no extra cost to the OWNER. Hand trenching is required, at no extra payment, where undue damage would be caused to existing structures and utilities by machine trenching.

3. The work of uncovering and backfilling required for locating existing sewers, water lines and other existing facilities for connection of improvements or avoidance in location of proposed pipeline, where such uncovering and backfilling is not within trench for improvements, shall be paid for at a price per cubic yard for such excavation actually removed and backfilled under item for "Search or Extra Depth Trench Excavation." Such payment does not include uncovering existing utility lines for their protection during or after trenching operations for the proposed pipeline.

E. Pipelines in Same Trench

1. Pipelines, force mains, and sewers laid in same trench shall, in all cases, be bedded on original earth, crushed stone, or other specified bedding materials, regardless of divergence in their elevations, unless otherwise specified. They shall never be laid in unsupporting backfill or one above the other. The CONTRACTOR shall receive applicable unit prices for each pipeline, force main, and sewer so laid, the same as if laid in widely separated trenches.

F. Location of Proposed Pipelines

1. The location of pipelines and their appurtenances, as shown on the Drawings, are those intended for the final construction. However, conditions may present themselves before construction on any line is started that would indicate desirable changes in location. Also, development of property traversed may require location changes. In such cases, the OWNER reserves the right to make reasonable changes in line and structure locations without extra cost, except as may be determined by the application of the unit prices bid to the quantities actually involved. The OWNER is under no obligation to locate pipelines so they can be excavated by machine.

G. Construction Stake-out

1. The ENGINEER will provide geometric base data for the CONTRACTOR'S use in locating sewers and facilities in the design location. The locations

105-14-03 (8/14)

for vertical control (benchmarks) are shown on the Drawings with elevation and description duly noted. Each manhole, pumping station wetwell, or other notable sewage system component shall have the coordinates shown at the individual location or listed with the General Notes of the Drawings. It shall be the CONTRACTOR'S responsibility to locate the new facilities in their intended position using survey grade GPS survey equipment. It should also be the CONTRACTOR'S responsibility to provide offset hubs at each manhole or such reference points as may be required to maintain the location of each new installation.

2. Where the CONTRACTOR elects to use grades (batter) boards for sewer construction, offset line and grade stakes shall be set and cut sheets prepared before trenching work is started. All stake-out work and cut sheet preparation shall be accomplished by the CONTRACTOR, the ENGINEER being responsible for review and checking the finished cut sheets. The CONTRACTOR shall provide all material, equipment, and labor for all stake-out work. Cut sheets, where required, shall be prepared on forms supplied by the ENGINEER (HKB Form RPR-4).

3. The cut sheets shall contain the following minimum information:

   (a) Manhole stations
   (b) Grade between manholes
   (c) Centerline and offset stations
   (d) Amount and direction of offset
   (e) Centerline elevation
   (f) Centerline cut
   (g) Offset elevation
   (h) Offset cut
   (i) Average trench depth
   (j) Utilities information and depths and/or any other pertinent information.

4. Where the CONTRACTOR elects to use grade (batter) boards for sewer construction, offset hubs shall be set perpendicular to each 25 foot centerline station. Where laser beam equipment is to be used, the offset line shall be as required for the specific type of laser equipment used. In either case, the CONTRACTOR shall be required to maintain at least the offsets at manholes until the sewer main has been constructed. The CONTRACTOR shall also, in either case, be required to obtain the original ground elevation along centerline, at each 25 foot station, for the purpose of calculation of the average trench depth.

5. Grades shown on the Drawings or as revised in the field are invert of pipe and NOT trench subgrade. The centerline cuts on the cut sheets shall have this calculation made, original ground surface to invert of sewer pipe, which is the depth which shall be used for calculation of the average depth of trench and backfill.

105-14-03 (8/14)

H. Trench Requirements

1. All trenches must be dug neatly to lines and grades as shown on the Drawings, as established in the field and/or as established on the cut sheets. Trenches shall be of sufficient width to properly assemble or bolt joints.

2. Trenching shall be completed between one grade control point and the next in advance of the laying of pipe, where pipes, culverts, or other structures may be encountered whose grade cannot reasonably be determined ahead of trenching. Should the CONTRACTOR lay pipe closer to the opening of trench ahead, he shall bear cost of any removal and relaying which may be required to avoid location conflict.

3. The extra cost of trenching in difficult locations, such as stream, railroad or highway crossing, if not covered by other Contract unit prices, shall be included in the unit price for furnishing, laying, trenching and backfilling.

4. Where grade (batter) boards are used to establish finish grade, they shall be set by the CONTRACTOR, with at least 3 boards set at all times where installation is in progress. These will be set each 25 feet or less and will be set perpendicular to and spanning the centerline of the trench, such that the grade string is in the vertical plane of the pipe flow line. Grade boards shall be supported by stakes driven firmly on each side of the trench, unless otherwise acceptable to the ENGINEER. Where laser beam equipment is used, the set-up shall be per the laser manufacturer's instructions and/or the permission of the ENGINEER.

5. Grades shown on the Drawings and/or profiles, cut sheets and offset stakes are the elevations of the invert of the pipe in all cases and excavation in open trench or tunnel must be made of sufficient depth to take care of required bedding of pipe and bells below these lines.

6. No additional compensation will be allowed for the extra depth trenching so required below invert.

7. Where bottoms of trench for 6-inch through 16-inch size pipe are in or on solid rock or where concrete cradle or arch is to be used, trenches or tunnels shall be dug to a depth of at least 6 inches below bottom of barrel of pipe. Where in earth, they shall be dug to at least 4 inches below bottoms of pipe barrels and bells.

8. When trench or tunnel is dug below required grade, the pipe must be brought to grade by filling with crushed rock for pipe bedding as specified in this Section 02700 of these Specifications, at the CONTRACTOR'S expense. Fill for pipe support shall not be made with material excavated from trench.

105-14-03 (8/14)

I. Excavation Unclassified

1. Excavation for pipelines shall be unclassified and the cost of all excavation of whatever nature and state, including solid rock, shall be included in the CONTRACTOR'S unit price bid for furnishing, trenching, laying and backfilling the pipe.

2. Excavation for structures such as manholes, pump stations, and vaults is likewise unclassified and the cost of all excavation of whatever nature and state, including solid rock, shall be included in the CONTRACTOR'S lump sum or unit price bid, as the case may be.

3. Solid rock is defined as materials of one-third cubic yard or more in one location (in a native state or concrete) that rings under the hammer which cannot be removed economically without the use of explosives. Paving removal is excluded; also shale rock.

4. In the event the ENGINEER finds it necessary to specifically order mechanical removal of solid rock, it will be measured by the cubic yard for such materials actually removed limited in depth to required depths of bedding below outside of pipe barrel and in width to the following dimensions:

TABLE 3.01

For 6" Pipe 2'-6"	For 15" Pipe 2'-10"	For 27" Pipe 4'-0"
For 8" Pipe 2'-9"	For 16" Pipe 2'-11"	For 30" Pipe 4'-4"
For 10" Pipe 2'-9"	For 18" Pipe 3'-2"	For 33" Pipe 4'-7"
For 12" Pipe 2'-9"	For 20" Pipe 3'-5"	For 36" Pipe 5'-6"
For 14" Pipe 2'-9"	For 21" Pipe 3'-6"	For 42" Pipe 6'-0"
	For 24" Pipe 3'-8"	For 48" Pipe 6'-6"
		For 54" Pipe 7'-0"

5. Mechanical removal of solid rock is defined as solid rock in its native state which is ordered to be fractured and broken up for removal by hand tools and/or hand held power or pneumatic tools to provide protection of utilities, structures, etc. which might otherwise be subject to damage by conventional drilling and shooting or heavy excavating equipment.

6. Payment for mechanical removal will not be authorized for solid rock excavation which is accomplished by drilling and shooting or by crawler or wheel mounted excavators, trenching machine, and similar equipment.

105-14-03 (8/14)

J. Dewatering of Trenches

1. Dewatering of trenches shall be considered a part of trenching, at no extra cost to the OWNER. Dewatering of trenches shall include ground-water and storm or sanitary sewage. Suitable pumping and other dewatering equipment is to be provided by the CONTRACTOR, to insure the installation of the pipeline structure in a dewatered trench and under the proper conditions. Dewatering shall include all practical means available for prevention of surface runoff into trenches and scouring against newly laid pipe.

2. Piles of excavated materials shall be trenched or temporarily piped to prevent, as far as practical, blockage of drainage ditches and gutters, and water carriage of excavated materials over street and highway surfaces.

3. Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the ENGINEER may order stabilization by various means. Exclusive of dewatering normally required for construction and instability caused by neglect of the CONTRACTOR, it shall be paid for at unit prices set up in the Contract, such as extra excavation, crushed rock for pipe bedding, concrete cradle or piling.

3.02 LAYING SEWER PIPE

A. General

1. Checking of Pipe

a. The selection of pipe strength class shall be based on earth weight of 130 pounds per cubic foot and a safety factory of 1.50.

b. All pipe and fittings must be tested for uniform diameter, straightness and defects by the CONTRACTOR before being lowered into trench, and rejected pipe marked in a way not to impair its value. Rejected pipe must be separated from accepted pipe and removed from the project. The ENGINEER will make periodic observations of pipe in storage and/or incorporated into the work. Pipe found defective, not meeting Specifications, or improperly installed shall be rejected and replaced.

2. Alignment and Grade

a. All pipe, after being inspected and accepted, shall be laid to correspond with lines and grades staked out by the CONTRACTOR. All sewer lines shall be laid to constant grades between invert elevations shown on the Drawings. Grades shown on the Drawings are invert of pipe and NOT trench subgrade. The pipe lengths shall be fitted together and matched, so that they will form a sewer with a smooth and uniform invert, visible as a full circle from manhole

105-14-03 (8/14)

to manhole, except in special cases where curved sewer lines are planned.

3. Unstable Subgrade

a. In wet, yielding, and mucky locations where pipe is in danger of sinking below grade or floating out of grade or line, or where backfill materials are of such a fluid nature that such movements of pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective. If crushed rock fill is necessary, it will be paid for per ton of such material used, except in cases where instability is caused by neglect of the CONTRACTOR.

4. Control of Quantities Laid

a. Laying of pipe may be held up by the ENGINEER until trench has progressed far enough ahead to remove the possibility of having to change grade or alignment on account of other structures, pipelines or conduits.

b. Unless permitted or directed, not less than 100 feet of pipe shall be laid at one operation except for the following reasons:

(1) Street and railroad crossings.
(2) Wet caving trenches.
(3) Business houses or institutions damaged by prolonged disconnection from street.
(4) Less than 100 feet distance between manholes or pipe control sections.

5. Bedding of Pipe

a. Six inch through 16 inch pipe shall be laid with bottom quadrant of barrel and bells of pipe bedded in at least 4-inch depth of crushed stone when on earth subgrade and in at least 6-inch depth of crushed stone, below the bottom of the barrel of pipe when on solid rock subgrade. Stone for bedding of 6 inch through 16 inch pipe shall be Kentucky Department of Highways Size 9 crushed rock as specified in Section 02235 of these Specifications, spaded into place. It shall be included in price for furnishing and laying pipe. Payment for the extra stone required for bedding pipe in solid rock for 6-inch through 16-inch pipe shall be included in the price bid for solid rock excavation in the case of classified excavation and in the price bid for trenching and backfilling in the case of unclassified excavation.

b. In case of pipe sizes 18-inch through 72-inch in both earth and solid rock trench, the subgrade shall be shaped to provide for a crushed stone pad, Kentucky Department of Highways Size 9, for a

105-14-03 (8/14)

depth under the pipe barrel at least 1/4 the outside diameter of the pipe, with a minimum of 6-inch depth and a maximum of 9-inch depth. The bedding material shall be thoroughly spaded into place, in order to give a uniform bearing for at least the bottom quadrant of the pipe. Payment for such bedding shall be included in the price paid for trenching and backfilling or laying, even when in or on solid rock.

c. For PVC or polyethylene pipe, alternate bedding materials will be allowed with permission of the ENGINEER. In order to qualify for use with sewer pipes of these compositions, the bedding material must be of the type of material delineated as Class IA embedment materials per Table 1 of ASTM D 2321, namely, coral, slag, cinders, crushed stone or crushed shells. The alternate bedding materials must also be of the same gradation of the crushed stone previously specified, namely, Kentucky Department of Highways Size 9. The crushed stone previously specified shall be used for all other piping materials.

d. No filling of trench with earth to bring pipe to grade will be permitted. If trenches are dug too deep, they must be brought to grade and supported by crushed rock for pipe bedding (No. 9) as specified in Section 02235 of these Specifications at the CONTRACTOR'S expense. No pipe shall be laid in the trench until the subgrade is inspected and found correct.

6. Laying of Pipe (Mains)

a. Laying crew foreman shall direct subgrade preparation and plumbing and leveling invert of pipe to grade and line, the pipe layer following his directions in placing the pipe. The pipe layer will be responsible for pipe bedding, cleaning joint, proper placement of joint annular ring or gasket, tight jointing and homing pipe, securing pipe against settlement or other movement, and inspecting and swabbing out any jointing material from inside of pipe.

b. No joints will be accepted that show leakage and, after backfilling and inspection, any joints are found that are allowing groundwater to enter the sewer must be excavated and repaired.

c. Plugs in branch fittings to future building sewers shall be protected from excavators by the method as shown on the Drawings for protecting the ends of laterals and shall be so constructed and joined in bell of pipe that they will be watertight, yet removable without breaking the bell or coupling when removed.

7. Laying of Branch Pipes and Laterals

a. Branch pipes shall be laid to serve the abutting property at points to be designated by the ENGINEER. Such pipes shall be connected

105-14-03 (8/14)

to sewer main through tees or Y-branches of size of running sewer barrel and 6 inch side opening, with 6-inch 30 degree or 45 degree bends. Branch fittings in sewer and the connected bend, shall be supported from bottom of trench per standard details shown on Drawings.

b. At locations where the sewer is within street or road rights-of-way, house lateral pipes shall be laid to the property line or right-of-way line.

c. At locations where the sewer is within easement obtained by the OWNER, house lateral pipes shall be laid to the permanent easement line.

d. Branch tees or wyes for house laterals will be located during construction, regardless of where shown on the Drawings. House lateral location shall be at the convenience of the property owner or as directed by the OWNER and/or ENGINEER.

e. The end openings of house laterals shall be plugged with appropriate watertight plugs of permanent materials in the bell of the sewer lateral, removable without breakage of the pipe bell. Dead ends of sewers shall be plugged similarly.

f. Under normal conditions, where elevations are not critical, branch service sewers to customers shall be laid on not less than .01 foot per foot of length grade. Where elevations are critical, minimum grade shall be .005 foot per foot laid with batter boards or laser, same as specified for street sewers.

g. In the case of deep sewers, branch pipes may be brought up to a depth of approximately 5 feet below ground level with suitable bends and sewer pipe. These pipes shall be laid on a slant outside sewer trench, so they will be supported on original earth and not dragged down and cracked by backfill settlement.

h. In case of deep sewers in rock or narrow places, branch pipes shall be of cast iron soil pipe installed vertically per standard details of Drawings, with branch fittings in sewer main encased in Class 2,500 concrete. Payment for such concrete and forms above wye or tee branch shall be at the price bid per encasement.

i. All lateral sewers and branch pipes installed on this Contract shall have a detectable mylar tape placed in the backfill over and running with the lateral sewer. The tape shall be readily detectable employing the same type metal locators as used for the location of metal pipelines. The tape shall be bright orange in color and have the words, "Caution, Sewer Line Below" printed on it. The tape shall be installed as shown on the standard details of the Drawings.

105-14-03 (8/14)

j. The tape shall be Type II, Detectable Mylar Marking Tape as manufactured by Line Guard, Inc. or equal. The cost of purchase and placement of the marking tape shall be included in the CONTRACTOR'S unit price bid for the lateral pipe and fittings.

8. Piping Connections at Structures

a. Lines

(1) Pipes shall be laid free from all structures other than manholes. Any pipe entering structures underground unsupported by original earth shall be supported by Class 2500 concrete, brick and mortar masonry, or Class 4000 concrete beams and columns as shown on detailed Drawings.

(2) Pipe shall be connected to manholes by fabricated manhole entry seals, specified in Section 03480 of these Specifications.

(3) Pipe stubbed out of manholes for future connections shall be plugged and tightly sealed with same jointing material used to plug laterals.

9. Installing Sewer Pipe in Cover Pipe

a. The installation of sewer pipe inside steel cover pipe is detailed in Section 02326 of these Specifications.

10. Protection of Pipe in Trench

a. No walking upon the completed pipelines will be permitted until trench has been backfilled to a depth of at least 6 inches over the top of the pipe. The interior of the pipe shall, as the work progresses, be cleaned of all dirt, jointing materials, and superfluous materials of every description. When laying of pipe is stopped for any reason, the exposed end of such pipe shall be closed with a suitable plug fitted into the pipe bell, so as to exclude earth and other material, precautions being taken to prevent flotation of pipe by runoff into trench.

11. Observation of Pipeline

a. No backfilling (except for securing pipe in place) over pipe will be allowed until the ENGINEER has had an opportunity to observe the joints, alignment and grade, in the section laid, but such observation shall not relieve the CONTRACTOR of further liability in case of defects occurring during or after placement of backfill.

105-14-03 (8/14)

B. Laying Sewer Pipe

1. PVC Pipe

a. PVC sewer pipe laying shall comply with the requirements of ASTM D 2321 and the additional requirements of these Specifications and standard details of the Contract Drawings.

b. Article 3.02.A of this Section 02700 shall apply to the installation of PVC sewer pipe. The pipe shall be bedded true to line and grade with uniform and continuous support from a firm base. The bedding material shall conform to that specified in Article 3.02.A of this Section 02700.

c. All PVC sewer pipe shall be installed in a manner to limit deflection of the pipe to 5 percent. A deflection test shall be performed on all flexible pipe. The test shall be conducted after the final backfill has been in place at least 30 days. No pipe shall exceed a deflection of 5 percent. If the deflection test is to be conducted using a rigid ball or mandrel, it shall have a diameter equal to 95 percent of the inside diameter of the pipe. The test shall be performed without mechanical pulling devices.

d. When laser equipment is being used for laying PVC sewer pipe, the CONTRACTOR shall provide adequate ventilation through the pipe to prevent distortion of the beams.

3.03 TRENCH BACKFILL - SEWER AND DRAIN PIPE

A. General

1. Excavated materials from trenches and tunnels, in excess of quantity required for trench backfill, shall be disposed of by the CONTRACTOR. It shall be the responsibility of the CONTRACTOR to obtain location or permits for its disposal. Unit prices for furnishing and laying pipe, which includes trench excavation, tunneling, and backfill, shall include the cost of disposition of excess excavated materials, as set forth herein, with no additional compensation being allowed for hauling.

2. No extra charge shall be made for backfilling of any kind, except as herein specified. Backfilling shall be included as a part of the price for furnishing, laying, trenching, and backfilling. No extra charge shall be made for supplying outside materials for backfill except where fills above existing ground are necessary and payment is designated on the Drawings or in the Specifications. If backfilling of the trench or surface restoration is not properly completed, a proportionate part of the unit price for furnishing, laying, trenching, and backfilling shall be retained from payment estimates.

105-14-03 (8/14)

3. Railroad company and Department of Highways requirements in regard to backfilling will take precedence over the above general Specifications where they are involved.

4. Mechanical tamping, where required by the ENGINEER in locations other than those specifically designated herein, shall be paid for per unit price bid for mechanical tamping.

5. Before completion of the Contract, all backfills shall be reshaped, holes filled, surplus materials hauled away, all permanent walks, street, drive-ways, highway paving replaced, and all sodding, seeding, and planting work performed.

B. Haunching

1. Upon completion of bedding and laying the sewer or drain pipe, the CONTRACTOR shall place crushed rock, Kentucky Department of Highways Size 9 dependent on size of pipe, or the same material used for pipe bedding on both sides simultaneously to the top of the pipe. This material shall be hand placed using shovel or other satisfactory tool to work the haunching material completely under the bottom quadrant and around the sides of the pipe to assure the maintenance of alignment of the pipe. No compaction of this material is required other than that obtained by the workmen walking on the material during placement.

2. The haunching material is required for all sewer or drain pipe installed in open trenches except where concrete pipe arch is required, in which case the haunching material is required to the bottom of the arch. Where concrete cradle is required, the haunching material shall be placed from top of cradle to top of pipe.

3. The cost of furnishing and placement of the haunching material shall be included in the CONTRACTOR'S bid for furnishing and laying the pipe.

C. Initial Backfill

1. Upon completion of the haunching material to the top of the pipe, initial backfill shall be placed as hereby specified. This material shall serve as protection for the top of pipe reducing the possibility of damage to the pipe during the placement of backfill for the remainder of the trench depth.

2. When sewer or drain pipe is located outside traffic areas, the initial backfill material shall be crushed rock (Kentucky Department of Highways No. 9) placed above the pipe to the level hereinafter stated.

3. When the sewer or drain pipe is located within traffic areas, the initial backfill shall be crushed rock, or the material used for bedding and haunching the pipe, of the same gradation of the pipe bedding material.

105-14-03 (8/14)

Other alternate materials may be used only with the specific written permission of the ENGINEER when the work is located inside traffic areas.

4. In the case of steel, cast iron, ductile iron pipe the initial backfill shall be hand placed to a point 6 inches above the barrel of the pipe. In case of plastic pipe, the initial backfill shall be hand placed and evenly spread to a point 12 inches above the pipe barrel for up to 4 feet cover, to a point 18 inches above the barrel for 4 feet to 10 feet cover, and 24 inches for over 10 feet cover.

5. The initial backfill material is required over sewer and drain pipe in all open trenches. The cost of the initial backfill material and placement of same shall be included in the CONTRACTOR'S bid for furnishing, laying, trenching and backfilling.

D. Final Backfill

1. Outside Traffic Areas

a. After the above specified initial backfill is hand placed, rock may be used in machine placed backfill in pieces no larger than 8 inches in any dimension and to an extent not greater than one-half the volume of the backfill materials required to backfill trench. Larger rock fill will be allowed in wide trenches where side slopes are low enough to prevent rock from dropping over pipe-line. If additional earth is required, it must be obtained and placed by the CONTRACTOR. Filling with rock and earth shall proceed simultaneously, in order that all voids or pockets, created by rock backfill, may be filled with earth. Machine backfilling may be employed with tamping, except as hereinafter restricted, provided caution is used in quantity per dump and in uniformity of level of backfilling. Backfill material must be uniformly ridged over trench, and excess hauled away, with no excavated rock over 1/2-inch diameter or pockets of crushed rock or gravel in top 12 inches of backfill, the top 12 inches reserved for topsoil or material more suited to sustain surface growth. Ridged backfill shall be confined to the width of the trench and not allowed to overlap onto firm original earth, and its height shall not be in excess of that required to provide for settlement of backfill.

2. Inside Traffic Areas

a. Where sewer and drain pipe is located in street, highway, railroad, sidewalk and driveway crossings or within any roadway paving, or about manholes, valve and meter boxes located in such paving, fill trench to within 6 inches of the surface with Kentucky Department of Highways No. 9 crushed stone, or other gradation acceptable to the ENGINEER. In order to accommodate compacted temporary surfacing it may be necessary to bulkhead or otherwise confine the stone fill at the open end of the trench.

105-14-03 (8/14)

E. Cleanup and Temporary Surfacing

1. General

a. Immediately following the placement of final backfill, all rock and debris, including crushed rock or gravel from construction operations, shall be removed from yards and fields. Streets, drives and walks shall be broomed to remove all earth and loose rock. The cleaning of streets, drives, and walks shall be of such extent to hold dust to a minimum. Loose earth and rock shall in no case be swept or washed into storm sewers or drains as a method of removal, all such material being loaded and hauled away from the site.

b. If acceptable cleanup operations are not completed within an acceptable period of time after the completion of final backfilling, a proportionate part of the price bid for trenching and backfilling shall be retained from partial payment estimates until acceptable cleanup is completed.

2. Temporary Surface Cover - Unpaved Areas

a. Upon completion of acceptable cleanup work, the ground surface shall be prepared for temporary seed, permanent seed or sod per the requirements of Section 02930 of these Specifications.

3. Temporary Surface Replacement - Paved Areas

a. Temporary surfacing of street, highway, railroad, sidewalk and driveway crossings, or within any roadway paving, or about manholes, valve and meter boxes located in such paving, shall consist of 6 inches compacted dense graded aggregate as specified under Section 02235 for temporary walkway or road surfacing, placed and compacted in the trench. Compaction shall be accomplished by methods which shall be sufficient to confine stone to the trench under normal traffic. Backfills shall be maintained easily passable to traffic at original paving level until acceptance of project or replacement of paving or sidewalks. The amount of crushed stone placed shall be paid for at the unit price per ton as shown in Section 02700 herein, titled "BASIS OF PAYMENT." No payment will be made for crushed rock surfacing required as a result of unnecessarily wide trenches, omission of sheeting and shoring, or damage by the CONTRACTOR'S equipment, or for maintenance of surface level.

b. After the initial placement of the 6-inch depth of temporary surfacing, the CONTRACTOR shall be required to maintain the temporary surfacing to street or road surface level at no additional

105-14-03 (8/14)

cost to the OWNER. This requirement shall continue until the replacement of permanent surfacing.

3.04 FIELD QUALITY CONTROL - TESTING SEWERS FOR LEAKS, INFILTRATION, AND DEFLECTION

A. Sewers

1. General

a. All sewers constructed under this Contract shall be tested for leaks and infiltration using methods as hereinafter specified.

b. The cost of all testing of sewer lines and manholes shall be included in the unit price bid for pipe and manholes. The CONTRACTOR shall furnish all materials, equipment and labor required for all types of tests, the ENGINEER being responsible only for directions, recording data and calculating air losses and/or infiltration rates.

2. Sequence

a. Testing

(1) As soon as it is practicable after installing and backfilling sewers, and before putting new sewers into service, low pressure air tests shall be made from manhole to manhole, or up to a maximum of 500 feet of sewer main and 500 feet of sewer laterals at a time, as directed by the ENGINEER. The maximum allowance for air loss during testing shall be determined by tables of minimum holding time for a pressure drop of 1.0 psi and are based on an average loss of 0.0015 cubic feet of air per minute per square foot of internal pipe surface, when tested at an average pressure of 3.0 psi greater than the average back pressure of any groundwater present.

(2) Upon completion of installation and backfilling of all sewers constructed under this Contract, the low pressure air test is required for all sewers so constructed.

b. Additional Testing

(1) Upon completion of the required initial (smoke) testing and required subsequent (low pressure air) testing, and prior to placing the sewer into operation, if ground and/or surface water flow is observed in the completed sewer, the ENGINEER may order infiltration tests be accomplished to determine whether the flow is within acceptable and allowable limits. This additional testing may be required even

105-14-03 (8/14)

though the results of the initial smoke testing and subsequent low pressure air testing indicate the sewers are substantially watertight. The infiltration tests shall be conducted, on order of the ENGINEER, as hereinafter specified.

3. Equipment

a. Low Pressure Air Testing

(1) The air test equipment used shall meet the following minimum requirements:

(a) Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be inspected.

(b) Pneumatic plugs shall resist internal test pressures without requiring internal bracing or blocking.

(c) All air used shall pass through a single control panel.

(d) Three individual hoses shall be used for the following connections:

(i) From control panel to pneumatic plugs for inflation.

(ii) From control panel to sealed line for introducing the low pressure air.

(iii) From sealed line to control panel for continually monitoring the air pressure rise in the sealed line.

4. Procedures

a. Safety Precautions

(1) The air test may be dangerous if a line is improperly prepared. It is extremely important that the various plugs be installed and braced in such a way as to prevent blowouts. Inasmuch as a force of 25 lbs. is exerted on an 8-inch plug by expulsion of a poorly installed plug or of a plug that is partially deflated before the pipe pressure is released can be dangerous.

105-14-03 (8/14)

(2) As a safety precaution, pressurizing equipment shall include a regulator set at 10 psi to avoid over-pressurizing and damaging an otherwise acceptable line. No one shall be allowed in the manholes during testing.

b. Low Pressure Air Test

(1) All pneumatic plugs shall be seal tested before being used in the actual test installation. One length of pipe shall be laid on the ground and sealed at both ends with the pneumatic plugs to be checked. Air shall be introduced into the plugs to 25 psig. The sealed pipe shall be pressurized to 5 psig. The plugs shall hold against this pressure without bracing and without movement of the plugs out of the pipe.

(2) Clean pipe to be tested by propelling snug fitting inflated rubber ball through the pipe with water.

(3) Plug all pipe outlets with suitable test plugs. Brace each plug securely.

(4) If the pipe to be tested is submerged in groundwater, insert a pipe probe by boring or jetting into the backfill material adjacent to the center of the pipe, and determine the pressure in the probe when the air passes slowly through it. This is the backpressure due to groundwater submergence over the end of the probe. All gauge pressures in the test shall be increased by this amount.

(5) Add air slowly to the portion of the pipe installation under test until the internal air pressure is raised to 4.0 psig.

(6) After an internal pressure of 4.0 psig is obtained, allow at least 2 minutes for air temperature to stabilize, adding only the amount of air required to maintain pressure.

(7) When pressure decreases to 3.5 psig, start stopwatch. Determine the time required for the internal air pressure to reach 2.5 psig. Minimum permissible pressure holding times for runs of single pipe diameter and for systems of 4 inch, 6 inch, or 8 inch laterals in combination with trunklines are indicated in the following table based on air loss calculations per ASTM F-1417.

105-14-03 (8/14)

Pipe Diameter, in.	Minimum Time, min:s	Length for Minimum Time, ft	Time for Longer Length, s	Specification Time for Length (L) shown, min:s							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	0.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	0.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	7:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:42	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:36
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	35:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91;10	102.33
27	35:30	88	17.306 L	28:51	43:16	57:41	72:07	8l:32	100:57	115:22	129.48
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	134:38	142:26	160:15
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193.53
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46

c. Infiltration Test

(1) Before putting new sewer lines into service, weir test shall be made of flow of water in the sewers from manhole to manhole or up to a maximum of 3,000 foot sections at a time, as directed by the ENGINEER. These tests shall be made when, in the ENGINEER'S judgment, groundwater level is equal to the highest groundwater condition in a normal year.

(2) The maximum allowance for all sewer pipe materials shall be 100 gallons per 24 hours per inch diameter per mile of sewer pipe and manholes.

d. Deflection Test

(1) A deflection test shall be performed on all flexible sewer pipe. The test shall be conducted after the final backfill has been in place at least 30 days. No pipe shall exceed a deflection of 5 percent. If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95 percent of the inside diameter of the pipe. The test shall be performed without mechanical pulling devices. Pipe deflection shall be measured and recorded by the CONTRACTOR in the presence of the ENGINEER using appropriate methods approved by the pipe manufacturer and acceptable to the ENGINEER.

105-14-03 (8/14)

5. Repairs and Acceptance

a. If the sewer fails to meet the requirements of the leakage and/or infiltration tests, the CONTRACTOR shall, at his own expense, determine the source of leakage and/or infiltration and make the necessary repairs or replacements.

b. If any sewer fails to meet the requirements of the deflection test, the CONTRACTOR shall, at his own expense, replace all failed pipe as necessary to comply with the deflection requirements. All replacement pipe shall also be tested for deflection.

c. On completion of sewer lines, all sewers and manholes will be inspected for foreign matter, including sand brought in by infiltration, and any such matter shall be removed before final acceptance of the lines. Any visible leakage at manholes or into lines shall be corrected regardless of the results of the required tests.

3.05 BASIS OF PAYMENT

A. Excavation and Backfilling

1. Trenching and Backfilling

a. Unit Price Contracts

(1) On unit price Contracts, payment for trenching and backfilling shall be included in the price bid for furnishing, laying, trenching and backfilling sewer and/or drain pipe.

(2) Where sewer lines and/or drain pipes are installed in bores or tunnels, no payment will be made for separate trench and backfill unit price items for the length of pipe installed in the tunnel or bore.

(3) Where pipe is installed on piers no payment will be made for separate trench and backfill unit price items for the length of pipe exposed and supported by piers.

b. Lump Sum Contracts

(1) The CONTRACTOR'S lump sum bid shall include all costs for trenching and backfilling.

2. Solid Rock Excavation

a. Unclassified Excavation

(1) Excavation shall be unclassified and the cost of all excavation of whatever nature and state, including solid rock, shall

105-14-03 (8/14)

be included in the CONTRACTOR'S unit price bid for each item of construction requiring excavation.

3. Search and Extra Depth Trench Excavation

a. "Search" trench excavation shall be the actual measured excavation within limits as acceptable to the ENGINEER.

b. "Extra Depth" trench excavation shall be the calculated yardage below the lowest point of excavation which would normally have been required for construction.

c. Trench width limitations for either condition shall be as listed in the following table:

For 6" Pipe 2'-6"	For 15" Pipe 2'-10"	For 27" Pipe 4'-0"
For 8" Pipe 2'-9"	For 16" Pipe 2'-11"	For 30" Pipe 4'-4"
For 10" Pipe 2'-9"	For 18" Pipe 3'-2"	For 33" Pipe 4'-9"
For 12" Pipe 2'-9"	For 20" Pipe 3'-5"	For 36" Pipe 5'-6"
For 14" Pipe 2'-9"	For 21" Pipe 3'-6"	For 42" Pipe 6'-0"
	For 24" Pipe 3'-8"	For 48" Pipe 6'-6"
		For 54" Pipe 7'-0"

d. Payment shall be by the cubic yard removed, including backfilling.

4. Mechanical Tamping

a. Mechanical tamping is defined as backfill placed and compacted by power driven mechanical equipment to a greater density than can be achieved by natural settlement or hand tamping methods. Mechanical tamping will be required when ordered by the ENGINEER with payment by the cubic yard so compacted. Measurement, but not actual extent of the mechanical tamping, shall be limited by the numerical maximum allowable trench width (for each size pipe) as shown in the table listed under "Search and Extra Depth Trench." Payment for mechanical tamping shall not include the specified haunching or initial backfill required above and below the top of pipe.

105-14-03 (8/14)

5. Crushed Rock Trench Backfill

a. When crushed rock trench backfill is listed as a pay item on the Form of Proposal, payment for the crushed stone or accepted granular material will be made by the ton so placed limited to the following calculation:

(1) Maximum trench widths as shown in the following table:

For 6" Pipe 2'-6"	For 15" Pipe 2'-10"	For 27" Pipe 4'-0"
For 8" Pipe 2'-9"	For 16" Pipe 2'-11"	For 30" Pipe 4'-4"
For 10" Pipe 2'-9"	For 18" Pipe 3'-2"	For 33" Pipe 4'-9"
For 12" Pipe 2'-9"	For 20" Pipe 3'-5"	For 36" Pipe 5'-6"
For 14" Pipe 2'-9"	For 21" Pipe 3'-6"	For 42" Pipe 6'-0"
	For 24" Pipe 3'-8"	For 48" Pipe 6'-6"
		For 54" Pipe 7'-0"

b. Payment shall be by the cubic yard removed, including backfilling.

(1) Depth of cover less the previously specified initial backfill and less the top 6 inches of trench.

(2) Weight of crushed stone or approved granular material not to exceed 100 lbs/cu ft.

(3) Length limited to 1 foot beyond edge of traffic area.

c. When crushed rock trench backfill is NOT listed as a pay item on the Form of Proposal, the cost of same shall be incorporated in the CONTRACTOR'S bid for trenching and backfilling.

B. Tunneling, Boring or Jacking

1. Permanent Tunnels

a. The payment for permanent tunnels shall be the length measured along its centerline from the entrance face on one side to the exit face on the other side. Payment per linear foot for each size tunnel shall include excavation, tunnel liner, pressure grouting, tunnel subgrade, closure plates and backfilling, complete.

105-14-03 (8/14)

2. Temporary Tunnels

a. Payment for temporary tunnels shall be made per linear foot based on the measured distance along the centerline of tunnel from the inlet face on one side to the outlet face on the other. Payment shall include all excavation, backfilling and all sheeting and shoring of tunnel, regardless of whether removed.

3. Boring or Jacking

a. In unit price Contracts, usable holes either bored or jacked shall be paid for per linear foot of hole actually bored or jacked, according to the diameter of the hole required, measured along the centerline from the point of entrance on one side to the point of exit on the other side. When cover pipe is installed inside the bore, boring or jacking and cover pipe shall be paid per linear foot based on the length of the cover pipe installed, according to the diameter of the cover pipe required.

C. Trench and Pipe Stabilization

1. Extra Excavation

a. Extra excavation required for trench or pipe stabilization shall be paid by the cubic yard so excavated under the item "Search and/or Extra Depth Trench Excavation" based on the limitations for that item.

2. Crushed Stone for Trench Stabilization

a. Crushed stone ordered by the ENGINEER for trench stabilization shall be paid by the ton so placed.

3. Crushed Stone for Pipe Bedding

a. Additional crushed stone bedding ordered by the ENGINEER for pipe stabilization shall be paid by the ton so placed.

4. Plain or Reinforced Concrete Arch

a. Plain or reinforced concrete arch called for on the Drawings and/or ordered by the ENGINEER shall be paid for by the linear foot of pipeline upon which it is placed. The Form of Proposal will indicate which method is to be used.

5. Plain or Reinforced Concrete Cradle

a. Plain or reinforced concrete cradle called for on the Drawings and/or ordered by the ENGINEER shall be paid for by the linear foot so placed.

105-14-03 (8/14)

D. Sewer and Drain Pipe and Accessories

1. Unit Price Contracts

a. Sewer and Drain Pipe

(1) Except where otherwise specified hereinafter, sewer and drain pipe laid shall include furnishing, laying, trenching and backfilling (all depths), and shall be paid for by the linear foot of sewer or drain line measured from center to center of manholes, transition in type of pipe, or junction fittings to ends of pipe. In case of transition of type of pipe at manhole, transition in pay will be at center of manhole.

(2) Where sewer lines and/or drain pipes are installed in bores or tunnels, pipe shall be paid for by the linear foot of sewer and/or drain pipe furnished and installed, in permanent tunnel, tunnel liner, temporary tunnel, boring or jacking, and/or cover pipe.

(3) Sewer lines and/or drain pipes installed on piers shall be paid for by the linear foot of sewer and drain pipe furnished and installed on piers.

(4) In case of drainage structures other than manholes, measurement of pipe will end at the inside wall of the structure.

b. Sewer Laterals

(1) Payment for sewer laterals, including furnishing, laying, trenching, and backfilling (all depths), shall be per linear foot measured from the branch fitting to end of pipe and shall include the cost of furnishing, laying, and plugging the end of the lateral and the required detectable mylar tape.

(2) Laterals consisting of fittings only and in the case of connecting to existing sewers with not more than 6 feet of pipe, no furnishing, laying, trenching, and backfilling payment for sewer pipe will be included.

c. Sewer Branch Fittings

(1) Wye or tee branches for sewer laterals will be paid per each unit installed.

105-14-03 (8/14)

d. Concrete Encasement of Wye or Tee Branches

(1) At locations where a vertical stack is to be installed on the sewer lateral, the wye or tee branch shall be encased in concrete with payment for same made for each branch encased.

2. Lump Sum Contracts

a. All work shall be included in the CONTRACTOR'S lump sum bid.

E. Temporary Surface Replacement

1. The amount of crushed stone placed shall be paid for at the unit price per ton up to the maximum limits of 225 pounds per linear foot of trench over which it is placed for pipe sizes through 16 inches, 300 pounds per linear foot for pipe sizes 18 through 24 inches and 400 pounds per linear foot for sizes 27 inches through 48 inches. The ENGINEER shall have control of thickness and width to be placed and paid for, and may order changes in depth and width as conditions dictate. No payment will be made for crushed rock surfacing required as a result of unnecessarily wide trenches, omission of sheeting and shoring, or damage by the CONTRACTOR'S equipment, or for maintenance of surface level.

END OF SECTION

***

105-14-03 (8/14)

SECTION 02930

SODDING AND SEEDING

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to perform sodding and seeding as shown on the Contract Drawings and as specified herein.

B. All areas disturbed by construction operations shall receive a protective cover of vegetation. The work shall consist of preparing the area for treatment, furnishing and placing soil amendments, fertilizer, sod, seed, inoculants, mulch and plantings as specified in the designated areas.

1.02 RELATED WORK

A. Special requirements for materials and equipment are given in Sections 01300 and 01600.

B. Special sequence or schedule requirements (if any) are specified in Section 01010 - Summary of Work.

1.03 QUALIFICATIONS

A. The work shall be done by a provider who is experienced, reputable, and qualified in the tasks required.

1.04 SUBMITTALS

A. Shop Drawings and other items needed to establish compliance with the Drawings and these Specifications shall be submitted to the ENGINEER in accordance with Section 01300 - Submittals.

B. Where fertilizer is furnished from bulk storage, the CONTRACTOR shall furnish a supplier's certification of analysis and weight. When required by the Contract, a representative sample of the fertilizer shall be furnished the OWNER for chemical analysis.

1.05 WARRANTY

A. Refer to Division 0 and 1 for warranty requirements.

105-14-03 (8/14)

PART 2 PRODUCTS

2.01 SOD

A. The sod to be used shall be Kentucky Bluegrass comparatively free from weeds or heavy root structure, cut in strips of 10 inches to 12 inches wide, 18 inches to 24 inches long, with a thickness of 1 1/2 inches to 2 inches.

2.02 SEED

A. All seed shall conform to the current rules and regulations of the state where it is being used and from the latest crop available. It shall meet or exceed the standards for purity and germination listed herein.

B. Seed shall be labeled in accordance with the state laws and the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of invitations for bids. Bag tag figures will be evidence of purity and germination. No seed will be accepted with a date of test of more than 9 months prior to the date of delivery to the site.

C. The seed for use on this project shall be of the type as listed below with the listed germination and purity qualifications.

Species	% Purity	% Germination
Tall fescue (KY-31) (Festuca arundinacea)	98.5	80
Ryegrass (Lolium multiflorium)	98.0	90
Oats (Avena sativa)	98.0	90
Rye, grain (Secale cereale)	97.0	85
Redtop (Agrostis alba)	90.0	80
Ky. Bluegrass (Poa pratensis)	81.0	70

2.03 FERTILIZER

A. Unless otherwise specified the fertilizer shall be a commercial grade fertilizer or as specified herein. The fertilizer shall meet the standard for grade and quality specified by state law.

2.04 INOCULANTS

A. The inoculant for treating legume seeds shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species and shall not be used later than the date indicated on the container or as otherwise specified. A mixing medium, as recommended by the manufacturer, shall be used to bond the inoculant to the seed. Two times the amount of the inoculant recommended by the manufacturer shall be used, except when seed is applied by use of hydraulic seeder, in which case 4 times the amount of inoculant recommended

105-14-03 (8/14)

by the manufacturer shall be used. Seed shall be sown within 24 hours of treatment and shall not remain in the hydraulic seeder longer than 4 hours.

2.05 SOIL AMENDMENTS

A. Lime shall consist of standard ground agricultural limestone, or equal. Standard ground agricultural limestone is defined as ground limestone meeting current requirements of the State Department of Agriculture. Agricultural lime or other needed soil amendments will be uniformly applied at the rate specified herein.

2.06 ASPHALT EMULSION

A. Asphalt emulsion shall conform to the requirements of ASTM D 977-80, "Emulsified Asphalt." The emulsified asphalt may be rapid, medium, or slow cure materials.

2.07 STRAW MULCH MATERIALS

A. Straw mulch materials shall consist of wheat, oat, or rye straw, hay, grass clippings cut from any native grasses or other plants acceptable to the ENGINEER. The mulch material shall be air dry, reasonably light in color, and shall not be musty, moldy, caked, or otherwise of low quality. The use of mulch that contains noxious weeds will not be permitted. The CONTRACTOR shall provide a method satisfactory to the ENGINEER for determining weight of mulch furnished.

2.08 OTHER MULCH MATERIALS

A. Mulching materials, such as wood cellulose fiber mulch, emulsion type, synthetic fiber mulch, netting, mesh, and other mulching materials that may be required for specialized locations and conditions, when specified, must be accompanied by the manufacturer's recommendations for methods of application.

PART 3 EXECUTION

3.01 EXTENT

A. Unit Price Contracts

1. Sodding

a. Where sod is destroyed in areas maintained equivalent to residence yards, it shall be replaced on slightly ridged backfill on trench, and where destroyed in areas adjacent to the trench, it shall be replaced by the CONTRACTOR with fresh sod. Sodding will be required only on those Contracts where specifically shown on the Drawings or called for in the Specifications or Form of Proposal.

105-14-03 (8/14)

2. Seeding

a. Where lawns, pastures, thin grass or cover crops are destroyed by trenching, laying, backfilling, or tunneling operations, surface shall be prepared by disking, fertilizing and seeding. Seeding, fertilizing, and mulching shall be included in the price for trenching and backfilling. The timing of this operation shall be controlled by the ENGINEER. Requirements of the Department of Highways for reseeding shall take precedence over these Specifications where they are involved.

b. When the construction project is located on privately owned property on easements acquired by the OWNER and the individual landowner requires the cover grass to be the same as present at the beginning of construction, the CONTRACTOR shall supply the seed required by the landowner. Seeding and fertilizing in such instances, shall be at the rate as recommended by the seed producer with soil preparation and mulching as stated herein.

c. When the construction project encroaches within the rights-of-way of the Department of Highways, the seed mixture, application rate and method of mulching shall be as required by the Department of Highways.

3. CONTRACTOR'S Options

a. Where surface grasses and cover are similar in nature throughout the length of the project, the CONTRACTOR may provide seed of one type or mixture for the entire project provided there are no objections by individual landowners involved and with permission of the OWNER and ENGINEER. In such cases, the seed type and/or mixture shall be that specified for lawn areas. Pasture and/or cover crop mixtures shall not be used for lawn application for any reason.

b. When construction facilities or construction operations are located on or encroach on privately owned properties, the CONTRACTOR may, at his election, negotiate with the individual landowners for restoration of the surface. This negotiation and settlement may be for materials or labor or both as agreeable to the individual property owner. In such cases, the CONTRACTOR shall obtain from the individual landowner a "Release of Claims" releasing the OWNER from any further liability for surface restoration, a copy of which shall be provided for the OWNER and ENGINEER. This option shall apply to surface restoration only. The CONTRACTOR shall be responsible for cleanup and regrading work and for any settlement of the trench or graded area within the one year guarantee period.

105-14-03 (8/14)

3.02 SOIL PREPARATION

A. All areas to be seeded or sodded shall be thoroughly cleaned, removing all debris of whatever nature. After the area has been cleaned, the soil for seeding and sodding shall be prepared as follows:

1. Loosen the soil to a depth of not less than 4 inches.

2. Work the soil until it is in good condition, raking with hand rake to complete the soil preparation and make final finished grade.

3. Broadcast 15 pounds of 8-8-8 or better fertilizer on each 1,000 square feet of area (for sodded areas only).

4. Rake area to receive sod, to spread fertilizer and work into soil.

5. On areas to be seeded, the raking in of fertilizer may be done concurrently with raking in of seed as hereinafter specified.

3.03 SODDING

A. The timing of resodding shall be controlled by the ENGINEER. Ground shall be prepared and fertilized as previously specified under Article 3.02 of this Specification Section. In small patches, supplying of 3 inches of topsoil and raking may be substituted for disking.

B. The strips of sod are to be laid so the joints will be broken. After the sod has been laid, it is to be watered thoroughly then rolled with a roller weighing 300 to 400 pounds, supplemented by hand tamping of sections inaccessible by roller.

C. After the sod has been put down, as described above, each piece is to have a minimum of 2 stakes to hold it in place, the stakes to be 1/2 inch square, 10 inches long, and driven into the ground with 2 inches of the stake left above the sod.

D. Sod shall be kept moist by watering for at least one month or until the Contract is completed and the facilities accepted by the OWNER for operation.

3.04 SEEDING

A. Temporary Cover (All Areas)

1. This item shall consist of seeding a temporary cover of grass, or grass and small grain, on areas disturbed on the construction site which will not be redisturbed within a 60 day period. The determination of the area to be temporarily seeded and the time of seeding shall be controlled by the ENGINEER.

105-14-03 (8/14)

2. The seed mixtures to be used for temporary cover will be governed by the time of year the seeding is accomplished. The mixtures and time of seeding shall be as follows:

   a. Time of Seeding - 2/15 to 6/1

      (1) Rye 1-1/2 bushels and ryegrass 25 pounds per acre; or tall fescue 30 pounds and ryegrass 20 pounds per acre.

   b. Time of Seeding - 6/2 to 8/15

      (1) Tall fescue 30 pounds and ryegrass 20 pounds per acre; or, spring oats 2 bushels and ryegrass 30 pounds per acre.

   c. Time of Seeding - 8/16 to 2/14

      (1) Rye 2 bushels and ryegrass 20 pounds per acre; or, tall fescue 30 pounds and ryegrass 20 pounds per acre.

   d. Lime will not be required for temporary seeding.

   e. Fertilize at the rate of 400 pounds per acre of 10-10-10 fertilizer, or equivalent, broadcast uniformly on the area to be seeded.

   f. All seed shall be broadcast evenly over the area to be seeded and cultipacked or otherwise pressed into the soil. Seed and fertilizer may be mixed together and applied after the seed bed has been prepared.

   g. Mulch for temporary seeding will not be required except on those areas, in the ENGINEER'S opinion, too steep to hold the seed without protective cover.

B. Seeding (Permanent Cover)

1. This item consists of seeding all areas disturbed during construction. All grading and/or filling of rills and gullies to a cross section acceptable to the ENGINEER shall be included in the seed bed preparation.

   a. Pastures and Cover Crops

      (1) All areas to be seeded shall be seeded with 50 pounds of tall fescue (KY-31) per acre, subject to the provisions hereinbefore stated in this Specification group.

      (2) Prepare seed bed as specified in Article 3.02 of this Specification Section unless instructed otherwise by the ENGINEER. Apply 2 tons of lime per acre.

105-14-03 (8/14)

(3) No mulch will be required except when seeding is done during the period October 16 through January 31, or May 2 through July 31, tall fescue straw shall be used at the rate of 2 tons per acre.

b. Lawns and Yards

(1) This item consists of seeding all areas equivalent to residence lawns or yards disturbed during construction. All grading and filling shall be accomplished in a manner acceptable to the ENGINEER prior to the placement of seed and materials. Seed shall consist of a mixture of one part Red Top and 3 parts high grade Kentucky Bluegrass seed mixed together and broadcast at the rate of 2 lbs. to each 1,000 square feet of surface, to be seeded. Apply 2 tons of lime per acre. Apply 1500 pounds of 10-20-20 fertilizer per acre. Apply mulch at the rate of 2 tons per acre. Mulch shall be applied to all lawn areas regardless of the time seeded.

3.05 MULCHING

A. Mulch materials, meeting the requirements of Part 2 of this Specification Section, shall be applied at the rate of 2 tons per acre.

B. The mulch shall be stabilized by running a "weighted" disk harrow with disks set straight, over the area on the contour, after the mulch has been applied, so as to imbed or press a part of the straw into the soil sufficiently to hold it in place. On earth embankments or areas too steep for use of mechanized equipment, the mulch shall be held in place by using small stakes and twine or other method acceptable to the ENGINEER.

C. Mesh, netting or other special protective cover shall be at locations as shown on the Drawings and shall be installed according to the manufacturer's recommendations.

END OF SECTION

***

105-14-03 (8/14)

SECTION 03480

PRECAST CONCRETE SPECIALTIES

PART 1 GENERAL

1.01 SUMMARY

A. All items supplied for use on this project shall be as specified herein.

1.02 RELATED WORK

A. Concrete specifications are included in Section 03300.

B. Castings are specified in Section 05540.

C. Connecting piping is specified in Section 02700.

1.03 REFERENCES

A. Where referenced specifications (ASTM, ACI, PCI, etc.), are mentioned, these standards are deemed to be the minimum standard of quality of materials or methods to apply to this project.

1.04 SUBMITTALS

A. Shop drawings shall be submitted in accordance with Section 00700 (00710).

1.05 QUALITY ASSURANCE

A. The precast fabricator shall be qualified in accordance with PCI MNL-116 - Manual for Quality Control for plants and production of precast concrete products.

1.06 DELIVERY, STORAGE AND HANDLING

A. Handle precast members in position consistent with their shape and design. Lift and support members only at such designated points.

B. Provide temporary lateral support during storage as necessary to prevent bowing and warping. Temporary lateral devices shall be clean, non-staining and shall not inhibit uniform curing of exposed surfaces.

C. Protect edges of members from chipping or spalling.

D. Mark units with date of production and final position in structure.

105-14-03 (8/14)

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete materials including cement, water, sand and coarse aggregate shall conform to ACI 301-84 (Revised 1988).

B. Reinforcing steel and prestressing wire and strand shall conform to ACI 301-84 (Revised 1988).

C. Initial Drawings shall be sent through the general CONTRACTOR to the ENGINEER in 3 copies for checking and return to the general CONTRACTOR in 2 copies.

D. Final Drawings shall be sent to the ENGINEER through the general CONTRACTOR in 5 copies for conformance and return in 3 copies.

2.02 PRECAST MANHOLES AND ACCESSORIES

A. Precast Reinforced Concrete Manhole Walls and Slabs

1. Precast reinforced concrete manhole walls and cone tops shall be of tongue-and-groove type conforming to ASTM C 478-80. Cone tops may be of concentric or eccentric configuration. Top slabs for manholes shall conform to details on the Drawings and to ASTM Designation C 478-80. All precast slabs shall be clearly marked "TRAFFIC" or "NONTRAFFIC" and "TOP" or "BOTTOM." Prior to use of precast reinforced concrete wall sections and top and bottom slabs, shop drawings covering details of construction including accessories shall be submitted to the ENGINEER for review.

2. Precast manholes with "knock-out panels" for pipe entry are not acceptable.

B. Manhole Adjustment Rings

1. Manhole frame adjustment rings shall be precast concrete rings for use between the top slab or top of cone and the manhole frame. Maximum allowable adjustment shall be 6 inches.

C. Mortar Materials

1. Portland Cement

a. Any standard brand, conforming to ASTM Specification C 150-81, Type 1, same as specified for concrete.

105-14-03 (8/14)

2. Sand

a. First quality, clean, natural Kentucky River or Ohio River sand. When dry, 100 percent shall pass a No. 8 sieve and not more than 35 percent shall pass a No. 50 sieve, and conforming to ASTM Standard Specification C 144-81.

D. Preformed Elastic Rope Joint Fillers

1. Gasket-type sealant to fill tongue-and-groove joints at top of precast manhole bases and between barrel sections shall be preformed, flexible, watertight, designed for specific joint requirements and meet Federal Specification SS-S-00210 and AASHTO M-198. Sealant shall be Con-Seal manufactured by Concrete Sealants, Inc., New Carlisle, Ohio or Ram-Nek manufactured by K.T. Snyder Co., Inc., Houston, Texas, or equal. Primers, if required by manufacturer, shall be supplied by the sealant manufacturer.

E. Pipe Entry Seal

1. Pipes entering manholes shall be attached by a rubberized entry seal. The seal shall encircle the pipe snugly for the prevention of groundwater leakage into or sewage leakage out of the manhole. The seal may be of the cast-in-place type or the boot type with stainless steel clamps. The manufacturer of the seal shall certify that the seal material is compatible with the pipe material used on the project.

2. Cast-in-place seal shall be flexible, multi-finned, push-in type of premolded neoprene meeting ASTM C-923, Dura-Seal as manufactured by Dura-Tech Inc., Dayton, Ohio or equal.

3. Boot seal shall be flexible of premolded neoprene (ASTM C 923-79) with stainless steel expanding snap-ring inserted into cored hole of manhole barrel and exterior stainless steel ring (minimum 2) to clamp boot around pipe, Kor-N-Seal as manufactured by Reliance Universal, Inc., Knoxville, Tennessee, or equal.

F. Steps

1. Manhole steps shall be cast into the manhole wall at intervals of not more than 15 inches where depths of manholes are greater than 4 feet unless otherwise shown on the Drawings.

G. Waterproofing Admixture

1. A waterproofing admixture such as Xypex Admix C-1000, Kryton KIM HS, or equal, shall be added to the concrete for manholes and wetwells during batching operations to provide waterproofing and improved chemical resistance. The Xypex Admix C-1000 or equal shall be added at 3.5 percent including dye to the required weight of Portland cement or as recommended by the admixture manufacturer. The amount of cement shall remain the same and shall not be reduced on account of the addition

105-14-03 (8/14)

of the waterproofing admixture. The colorant shall be added at the waterproofing manufacturing plant.

PART 3 EXECUTION

3.01 PRECAST MANHOLE CONSTRUCTION

A. General

1. Manhole construction will not be permitted under conditions where there is danger of freezing or when materials are frozen. Manholes shall be protected from freezing weather for a period of at least 48 hours after construction.

B. Excavation

1. Excavation for manholes, control chambers and interceptor structures shall be made of sufficient width to adequately accommodate all work and proper centering. Depth of excavation shall extend sufficiently to accommodate the type of manhole provided. Where a poured concrete base is used, the excavation must be of sufficient depth to allow for a minimum of 3 inches between the bottom of the lower pipe opening and bottom of manhole barrel and an 8 inch thickness for the poured concrete base. Where a precast concrete base is used, whether as a separate unit or integral with the bottom barrel section, the excavation shall be such to allow for a 12 inch depth crushed stone sub-base when in earth or a 9 inch depth crushed stone sub-base when in rock, below the bottom of the precast concrete base.

2. The cost for excavation of these structures is to be included in the linear foot price bid for trenching, backfill and structure unit price. Where the manhole subgrade is located in unstable material, the ENGINEER may order various methods of stabilization such as extra depths of crushed stone, concrete or other means as will prove effective. The CONTRACTOR will be paid for the extra work involved to stabilize the subgrade based on unit prices set up in the Contract unless instability is caused by the CONTRACTOR'S negligence. The limits for extra payment shall be from the elevation the CONTRACTOR would have had to complete based on the type of manhole base provided.

C. Manhole Installation

1. Manhole Base

a. Poured floor slabs of manholes shall be of Class 3,500 concrete according to Section 03300, and shall be placed ahead of sewer laying to avoid displacement of sewer ends while placing concrete. The part of the concrete slab under the manhole walls shall have a smooth trowel finish. Top of slab shall be 3 inches (or as shown on manhole details) below the lowest sewer invert grade. In sandy soils,

105-14-03 (8/14)

a 6 mil polyethylene film shall be used under manhole slabs to prevent loss of moisture in concrete during placement.

b. Precast concrete base slabs will be allowed based upon the ENGINEER'S acceptance of the particular base slab provided. The general requirements for poured slabs shall also apply to precast slabs. Precast base slabs shall be placed on a crushed stone subgrade which has been leveled and compacted to the proper elevation. Crushed stone shall be DGA or Kentucky Department of Highways size 57 and shall be 12 inches in depth when on earth and 9 inches in depth when on solid rock.

c. Precast concrete manhole bottoms with accurately formed channels will be allowed as alternate to standard design, provided smooth surfaces and accurate levels, widths and slopes are obtained. The forms shall be constructed according to the angles and invert elevations obtained from the "stakeout" operation, and variation of forms more than ±2°00' horizontally shall be cause for rejection. Changes in angles or elevations of manhole inverts, caused by relocation of a manhole after the original stakeout, shall be the responsibility of the CONTRACTOR if such relocation is necessitated by conflict with water, gas, drain or other utility lines or obstructions. Placement shall be as detailed for precast slabs above.

2. Manhole Barrel

a. Manhole structure walls shall be constructed of precast concrete as shown on standard detail Drawings and as specified in this Section 03480. Barrels shall be accurately centered on the base slab as staked in the field.

b. When poured or precast concrete base slabs are used, the first barrel section shall be seated in and sealed with cement mortar. Intermediate barrel sections may be seated in and sealed with cement mortar or rope joint filler both as specified in this Section. Where rope joint filler is used, it shall be placed on the outside lip of the tongue and groove barrel section. Where a primer or adhesive is to be used with the rope joint filler, it shall be that specified by the joint filler manufacturer. Precast concrete frame adjustment rings and cast iron frame shall set in a full bed of cement mortar.

c. Precast barrel sections shall have steps cast in place or slots for steps left in place with steps to be located over the manhole outlet sewer pipe. Pipe openings shall be positioned to this arrangement. Likewise, eccentric corbel sections and precast top slabs with offset entrance shall be positioned on center with the manhole steps over the outlet sewer pipe.

105-14-03 (8/14)

3. Manhole Inverts

a. Channels through manholes shall be formed of either split tiles, prefabricated forms, or hand finished of the same size as the sewer pipes connected.

b. After the first barrel section has been set, the floor shall be brought up within 1 inch of the top of the sewer channels with crushed stone or broken brick ballast which shall be shaped to provide a slope of at least 3 inches from manhole sides to main sewer channels. One and one-half inches thickness of mortar proportioned by volume, 1 part Portland cement and 2 parts concrete sand in a damp, loose condition (80 pounds per cubic foot dry basis), shall be placed over the ballast. This shall be wood float finished to provide a smooth and well drained floor to the manhole channels.

c. The completed channels shall provide a smooth, steady transition between manhole inlet and outlet pipes. Any roughness or ragged edges within the completed channel shall be corrected prior to acceptance of the manhole.

4. Manhole Drops

a. For joining sewer lines at different levels, drop manholes shall be provided. The drop inlets shall be as shown on the standard details of the Drawings.

D. Backfill

1. Backfill shall be accomplished per the requirements for sewer backfill as specified in Section 02700.

E. Vacuum Testing

1. General

a. All new manholes installed on this project shall be subjected to a vacuum test to determine the seal of all joints within the manhole. The vacuum test will not be required for existing manholes that are adjusted or partially reconstructed. The following test procedure is required for all new manholes:

(1) Lift holes shall be plugged with an approved nonshrinkable grout prior to testing.

(2) Drop connections shall be installed prior to testing.

(3) The manhole shall be finished and backfilled to design elevation prior to testing.

105-14-03 (8/14)

(4) The vacuum test shall include testing of the seal between the cast iron frame and top slab or cone section, slab, barrel sections, and/or grade rings.

2. Testing Procedure

a. Temporarily plug (and brace) all pipes entering the manhole at least 8 inches into the sewer pipe. The plug shall be inflated at a location beyond the manhole/pipe gasket.

b. The pressure gauge for the test hood shall be liquid filled, having a 3-1/2 inch face with scale reading from 0 to 30 inches of mercury.

c. The test head shall be placed inside the manhole frame and inflated according to the testing equipment manufacturer's recommendations.

d. A vacuum of 10 inches of mercury shall be drawn on the manhole. Upon reaching 10 inches of vacuum, close the valve on the vacuum line to the manhole and disconnect the vacuum line.

e. For the manhole to be considered as having passed the vacuum test, the time for the vacuum reading to drop from 10 inches of mercury to 9 inches of mercury must be equal to or greater than the following values, as referenced in ASTM C 1244:

Minimum Test Times for Various Manhole Diameters

Depth	Diameter, in.								
(ft)	30	33	36	42	48	54	60	66	72
	Time, s								
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	39	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	64	78	87	97
26	36	39	46	55	64	75	85	94	105

105-14-03 (8/14)

Depth	Diameter, in.								
(ft)	30	33	36	42	48	54	60	66	72
	Time, s								
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	98	108	121

f. Manholes failing the vacuum test shall be repaired with nonshrink grout or other suitable material and retested per the procedure shown previously.

g. All temporary plugs and braces shall be removed after each test.

h. The CONTRACTOR shall provide all equipment and labor required for vacuum testing of new manholes. The cost for this procedure shall be incorporated into the price bid for the manhole.

F. Basis of Payment

1. Standard Manholes

a. Payment for manholes shall be made by the unit price each bid for manholes 1.1 foot through 6.00 feet in height, measured from the lower invert of the manhole to the lowest side of top of the ring, with any height over 6.00 feet paid for at unit price bid per vertical foot measured and payment totaled to the nearest one-hundredth foot. Payment for manholes will include excavation, floor, barrel, top slap, all castings, sloped floor, pipe channels, weirs, orifices, and other accessories such as supports to connecting pipe, future connections and their channels (up to a maximum of 2 per manhole where not shown) and vacuum testing.

2. Drop Manholes

a. Drops, where required, shall be paid for at a unit price each. The unit price shall include concrete beam from drop to original ground and all other items of cost.

END OF SECTION

***

105-14-03 (8/14)

SECTION 05540

CASTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

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

1.02 SUBMITTALS

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

PART 2 MATERIALS

2.01 GENERAL

A. All castings shall be gray iron, conforming to the requirements of the ASTM Standards, Designation A 48-83, Class 20 for valve boxes.

2.02 VALVE BOXES

A. Screw Type for Iron Body Gate Valves

1. Valve boxes for sizes thru 12-inch valves shall be the cast iron slide type, without screw, of sufficient length to allow for 30 inches of cover over the top of the pipe. The inner section shall have a minimum inside diameter of 5-1/4 inches with a hood type base that will cover the packing gland on valves through 12 inches in size (minimum of 8 inches inside diameter). The base of the top section shall be flanged at least 1-1/4 inches. The caps shall be circular with a corrugated surface and have pick holes in the periphery and be marked "Water” or "Sewer” according to use. The valve boxes shall be Tyler Pipe/Utilities Division, 6855 Series, or equal.

2. For vertical valves larger than 12-inch size, provide Tyler Pipe/Utilities Division Series 6865 with No. 8 base, or equal.

3. Valve boxes for valves in the horizontal position shall be cast iron Tyler Pipe/Series 6855 or equal, with a base that is sized to allow covering of the bevel gear case and centering of the operating nut in the valve box.

105-14-03 (8/14)

PART 3 EXECUTION

3.01 INSTALLATION OF CASTINGS

A. Installation In or On Structures

1. The installation of castings is generally covered under specifications for pipe work and manholes. Castings shall be leveled, plumbed and secured before pouring concrete or attaching to masonry with solid, watertight, cement mortar joints.

B. Installation on Buried Valves

1. Valve box construction shall consist of the approved manufactured box and accessories. Line pipe shall not be accepted for use as valve boxes.

2. Mechanically tamp backfill, or backfill with crushed rock (per requirements of location - see Section 02610 of these Specifications) to the bottom of the packing gland of the operating nut. Install valve box base centered over operating nut.

3. Install valve box shafts, of the required height, and top section to proposed top elevation. Mechanically tamp backfill around box or backfill with crushed rock.

4. Place reinforced concrete collar around top section when shown on the Drawings.

5. Furnishing and installation of the valve box and accessories, including the concrete valve box collar, shall be included in the price bid for furnishing and installation of the valve.

END OF SECTION

***

105-14-03 (8/14)

SECTION 15100

SMALL PLUMBING VALVES, PLUMBING SPECIALTIES AND SERVICE ACCESSORIES

PART 1 GENERAL

1.01 WORK INCLUDED

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

1.02 RELATED WORK

A. Large Plumbing Valves and Appurtenances are included in this Division, Section 15102.

B. Mechanical Identification Markers, Tags and Plates are included in this Division, Section 15190.

C. Excavation, Backfill and Grading are included in Division 2.

1.03 SYSTEM DESCRIPTION

A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of wastewater, sludges, water, air or chemicals, depending on the applications.

1.04 QUALITY ASSURANCE

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

1.05 REFERENCES

A. Kentucky Building Code.

B. Kentucky State Plumbing Law, Regulations and Code.

105-14-03 (8/14)

1.06 SUBMITTALS

A. Copies of all materials required to establish compliance with these Specifications shall be submitted in accordance with the provisions of the General Conditions. Submittals shall include at least the following:

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

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

3. The total weight of each item.

4. A complete total bill of materials.

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

1.07 OPERATING INSTRUCTIONS

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

PART 2 PRODUCTS

2.01 GENERAL

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

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

C. Except as otherwise shown on the Drawings or specified herein, all valves with operators located 7 feet or more above the operating floor shall be provided with chain wheel operators complete with chain guides and galvanized steel chain, treated with a rust inhibitor.

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

2.02 GATE VALVES

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

105-14-03 (8/14)

1. Gate Valves for Water

   a. Gate valves for water service 3 inches and smaller shall be rated for safe operation at 125 psi saturated steam and 200 psi non-shock cold water, oil or gas (WOG).

   b. The valves shall be of the rising stem, inside screw, screw-in bonnet, solid wedge disc type.

   c. The body, bonnet, disc, packing nut and stem shall be bronze construction. Packing shall be the TFE non-asbestos suitable for a maximum temperature of 200 degrees Fahrenheit.

   d. Gate valves with threaded end connections shall be Milwaukee 148, Hammond IB640 or equal.

   e. Gate valves with solder end connections shall be Milwaukee 149, Hammond IB635 or equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.

B. Control valves in all locations shall be so grouped and located that they may be easily operated, through access panels, doors, or adjacent to equipment.

C. After installation, all valves and appurtenances shall be tested at least one hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the ENGINEER.

D. Install all brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the CONTRACTOR shall check all Drawings and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.

E. All materials shall be carefully inspected for defects in workmanship and materials; all debris and foreign material cleaned out of valve openings, etc.; all operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.

105-14-03 (8/14)

F. Fire hydrants shall be set at the locations as shown on the Drawings and bedded on a firm foundation. A drainage pit as detailed on the Drawings shall be filled with screened gravel and satisfactorily compacted.

G. During backfilling, additional screened gravel shall be brought up around and 6 inches over the drain port. Each hydrant shall be set in true vertical alignment and properly braced. Concrete thrust blocks shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Minimum bearing area shall be as shown on the Drawings. Felt roofing paper shall be placed around hydrant elbow before placing concrete. CARE SHALL BE TAKEN TO INSURE THAT CONCRETE DOES NOT PLUG THE DRAIN PORTS.

H. If directed, the hydrant shall be tied to the pipe with suitable rods or clamps, galvanized, painted, or otherwise rustproof treated. Concrete used for backing shall be no leaner than 1 part cement, 2-1/2 parts sand, and 5-1/2 parts stone. Hydrant paint shall be touched up as required after installation.

I. Buried flanged or mechanical joints shall be made with cadmium plated bolts. All exposed bolts and nuts shall be cadmium plated. All exposed bolts and nuts shall be heavily coated with 2 coats of bituminous paint.

J. Yard hydrants shall be installed in accordance with manufacturer's recommendation and applicable requirements of fire hydrants above.

K. Buried valves and valve boxes shall be set with the stem vertically aligned in the center of the gate box. Valves shall be set on a firm foundation and supported by tamping selected excavated material under the sides of the valve. The valve box shall be supported during backfilling and maintained in vertical alignment with the top flush with finish grade.

3.02 SHOP PAINTING

A. Interior surfaces of all valves, the exterior surfaces of buried valves and miscellaneous piping appurtenances shall be given a shop finish of an asphalt varnish conforming to Federal Specification TT-V51e for Varnish Asphalt.

B. The exterior surface of various parts of valves, operators, floor stands and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease or other foreign matter and thereafter one shop coat of an approved rust-inhibitive primer such as Inertol Primer No. 621 shall be applied in accordance with the instructions of the paint manufacturer.

C. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.

D. Field painting is specified under Division 9.

105-14-03 (8/14)

3.03 INSPECTION AND TESTING

A. The various pipelines in which the valves and appurtenances are to be installed are specified to be field tested. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.

B. Various regulating valves, strainer, or other appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

END OF SECTION

***

105-14-03 (8/14)

SECTION 15102

VALVES (WATER RELATED)

PART 1 GENERAL

1.01 SCOPE OF WORK

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

B. The equipment shall include but not be limited to, the following:

1. Gate valves
2. Tapping valves, sleeves and crosses
3. Flushing hydrants
4. Air releases

1.02 RELATED WORK

A. Excavation, backfill and grading is included in Division 2.

B. Piping is included in the respective sections of Division 2.

C. Painting is in Division 9.

D. Special sequence or schedule requirements (if any) are specified in Section 01010 - Summary of Work.

E. Valves and service accessories on all plumbing systems are included in this Division, Section 15100.

F. Mechanical identification markers, tag and plates are included in this Division, Section 15190.

1.03 DESCRIPTIONS OF SYSTEMS

A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of water.

B. See the valve schedule for valve sizes, quantities, connections, class, type of actuator and location.

1.04 QUALIFICATIONS

A. All of the types of valves and appurtenances shall be products of well established firms who are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be

105-14-03 (8/14)

designed, constructed and installed in accordance with the best practices and methods and shall comply with these specifications as applicable.

B. Acceptable Manufacturers

1. Gate Valves – M&H Style 7000.
2. Tapping Sleeves - Clow, American-Darling, Mueller, M&H or equal.
3. Flushing Hydrant – Mueller Super Centurion with Hydrant Wrench.
4. Blow-off Hydrant – Eclipse No. 85, w/accessories, and Gate Valve.
5. Air Release – Valmatic ¾" or equal

1.05 SUBMITTALS

A. Complete shop drawings of all valves and appurtenances shall be submitted to the ENGINEER in accordance with the requirements of Sections 00820 and 01300.

B. The ENGINEER shall be furnished 2 certified copies of reports covering the required leakages, hydrostatic and proof-of-design tests on the valves.

C. Gate Valves

1. The manufacturer shall furnish the ENGINEER 2 copies of an affidavit stating that the valve and all materials used in its construction conform to the applicable requirements of ANSI/AWWA C509-94, and that all tests specified therein have been performed and that all test requirements have been met.

2. The ENGINEER shall be furnished 2 copies of affidavit that the "Valve Protection Testing" has been done and that all test requirements have been met.

3. The ENGINEER shall be furnished with 2 copies of affidavit that inspection, testing and rejection are in accordance with AWWA C509-94 Section 6.1 through Section 6.2.

1.06 OPERATING INSTRUCTIONS

A. Manufacturer's operating and maintenance instructions shall be furnished to the ENGINEER as set forth in Section 01600.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. General

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

105-14-03 (8/14)

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

3. Except as otherwise shown on the Drawings or specified herein, all valves with operators located 7 feet or more above the operating floor shall be provided with chain wheel operators complete with chain guides and galvanized steel chain.

4. All buried valves shall open left (counter clockwise). Insofar as possible, **all** valves shall open counter clockwise.

5. All valves must be provided with suitable operating devices and adapted for operation in the position in which they are shown on the Drawings.

6. Valves shall have types of operators as shown on the Drawings and/or listed in the valve schedule.

7. All bolts and studs shall be in accordance with ASTM A-307 Grade B and nuts shall be in accordance with ASTM A-563. Bolts, studs and nuts shall be electrogalvanized according to ASTM B-633.

8. All bolts, studs and nuts in contact with water, in any moist atmosphere or damp area such as occurs above water, or exposed to weather shall be stainless steel.

9. All bolts delivered to the job shall be free of rust and dirt and shall be stored in a manner to protect them from rust and dirt. All bolts shall be tightened to the proper torque. They shall be of the size recommended for the pipe and fittings they are to be used on and shall be in the recommended quantity. Tightening of bolts shall be alternated, so as to not produce undue stress on the valves and fittings.

2.02 GATE VALVES

A. Resilient-Seated Gate Valve (AWWA Type)

1. General

a. Resilient-seated gate valves shall conform in all respects to ANSI/AWWA C509-94 with non-rising or rising stems, in sizes 3, 4, 6, 8, 10, and 12 inch NPS except as otherwise noted below. They shall be designed for a working water pressure of 200 psi.

b. Valves shall have a clear unobstructed water way, without pockets or ridges in the seating area of the valve body. When fully open the water way shall be at least as large as the pipe diameter to which it is connected.

105-14-03 (8/14)

c. All future references to section and paragraph numbers shall be those of ANSI/AWWA C509-94.

2. Materials

a. Physical and Chemical Properties

(1) Physical and chemical characteristics of the valve components shall be in accordance with Section 2.2, except that carbon steel castings for valves are not acceptable. Paint shall be as hereinafter specified under "Valve Protection."

3. Detailed Design

a. Valve Ends

(1) General

(a) Valve ends shall be flanged, mechanical joint, asbestos cement, PVC or rubber ring slip-on type as shown on the Drawings and/or as listed in the resilient seat valve schedule.

(b) In resilient seated tapping valves, end connections may be a combination of flanged and mechanical joint, flanged and asbestos cement or flange and flange.

(2) PVC Joints

(a) PVC joints shall be rubber ring slip-on type.

b. Stem Seal

(1) Stem seals shall be O-rings in accordance with Section 4.8, paragraph 4.8.2 and subparagraph 4.8.2.1, and materials shall be in accordance with paragraph 4.8.3.

c. Wrench Nuts and Handwheels

(1) Wrench nuts and handwheels shall be in accordance with Section 4.11 and subparagraphs 4.11.1 through 4.11.5, except that all valves whether NRS or O S & Y shall open by turning counterclockwise.

d. Gaskets

(1) Gaskets where used shall be in accordance with Section 4.15. O-rings of Buna-N or equal material.

105-14-03 (8/14)

e. Valve Seats

(1) Valve seats shall be in accordance with Section 4.16, except that seats applied to the valve body are not acceptable.

4. Valve Boxes

a. Valve boxes shall be provided for each buried valve. They shall be cast iron, of heavy pattern, adjustable type and provided with cast iron cover. The upper section of each box shall have a bottom flange of sufficient bearing area to prevent settling. The bottom of the lower section shall enclose the stuffing box and operating nut of the valve. Boxes shall have barrels of not less than 5 inch in diameter and be of length adapted to pipe cover. Boxes shall be adjustable, with a lap of at least 6 inch when in the most extended position. Covers shall have the word "OPEN" and an arrow indicating the direction of opening cast into covers in raised letters. Provide valve stem extensions for all buried valves.

5. Fabrication

a. Valve Protection (Painting and Coating)

(1) Exterior

(a) Exterior painting of the valve may be in accordance with section 2.2.7, or it may be the same as that specified for interior painting of the valves.

(2) Interior

(a) The interior of the valve shall be prepared for and painted in accordance with AWWA C550-90. The coating may be a fusion bonded epoxy, in 8 to 10 mil thickness or it may be a two-part thermosetting epoxy having the same mil thickness. After application the interior coating shall be visually examined and holiday tested in accordance with AWWA C550-90.

2.03 TAPPING VALVES AND TAPPING SLEEVES AND CROSSES

A. Tapping Valves

1. Tapping valves for use with tapping sleeve and crosses shall be in accordance with the specifications for resilient seated gate valves or in accordance with C-500-93 for double disc parallel seat gate valves, except that one end shall have a flanged connection and the other end either a hub or mechanical joint connection.

105-14-03 (8/14)

2. They shall be for 200 psi in sizes 2 inch thru 12 inch and 150 psi in sizes 14 inch and larger.

3. Valves shall open by turning counterclockwise.

4. Inlet flanges of valves shall meet ANSI B16.1, Class 125 standard.

B. Tapping Sleeves and Tapping Crosses

1. Tapping sleeves and tapping crosses shall have heavy cross sections to strengthen the existing water main at the point of installation.

2. Mainline end connections to existing pipeline shall be mechanical joint with large and small gaskets.

3. Mechanical joint tapping sleeves and crosses shall have a maximum working pressure of 200 psi. Sleeves and crosses with caulked-type joints shall have a maximum water working pressure of 150 psi.

4. Outlet end of tapping sleeves and crosses shall have ANSI B16.1, Class 125 flanges.

5. Stainless steel tapping sleeves shall be all stainless with stainless steel bolts, nuts, flanges and body.

C. Quality Standard

1. All tapping valves, tapping sleeves and tapping crosses shall be in features and quality equal to those of Mueller Company or Dresser Manufacturing Company, or OWNER'S standard specification shall govern.

D. Test and Certification

1. Tests on tapping valves shall be in accordance with these Specifications for resilient seated gate valve or in accordance with C-500-93 for double disc parallel seat gate valves.

E. Protection

1. Tapping Valves

a. Protection of tapping sleeves and valves shall be in accordance with these Specifications for double disc parallel seat gate valves.

2. Tapping Sleeves and Crosses

a. Protection for tapping sleeves and crosses shall be in accordance with these Specifications for cast iron pipe fittings.

105-14-03 (8/14)

F. Marking and Tagging Valves

1. Tagging of tapping valves shall be in accordance with these Specifications for resilient seated gate valves or in accordance with C-500-93 for double disc parallel seat gate valves.

2.04 DRY-BARREL FLUSHING HYDRANTS-MUELLER SUPERCENTURION WITH HYDRANTLOK™ WITH STEEL HASP PIN AND PADLOCK

A. General

1. This standard covers post-type dry barrel hydrants with compression type valves, operating against pressure. They shall meet all requirements of ANSI/AWWA Specification C502-94.

2. They shall have two 2 ½ inch hose connection nozzles and one 4 ½ inch steamer connection nozzle, all with caps and drains and have national standard threads.

3. Main valve opening size shall be 5-1/4 inch which must remain closed when the above ground breakable safety section of the hydrant barrel is broken off.

4. All hydrants shall have 6 inch mechanical joint bell connection designed for 200 pounds working water pressure, in accordance with ANSI/AWWA C110/A21.10-93. Joint accessories and a hydrant wrench are to be furnished with the hydrant.

5. Finish paint color of the hydrant barrel above ground line shall be selected by the OWNER.

6. All hydrants shall have an automatic drain feature providing positive barrel drainage after hydrant use.

7. The lowest outlet level of the hydrant shall be located sufficiently above the indicated ground level to permit a 360° swing of a 15 inch hydrant wrench. One standard hydrant wrench is to be provided. All hydrants shall open by turning counterclockwise.

8. Where the OWNER has standardized on one particular make and model hydrant and desires that the hydrants furnished under this project be such standard, that make and model hydrant, namely Mueller Supercenturion with HydrantLok™ tag, will govern.

9. All further reference to section and paragraph numbers shall be those of ANSI/AWWA C502-94.

105-14-03 (8/14)

B. Affidavit of Compliance

1. The manufacturer shall furnish the OWNER, through the ENGINEER, 3 copies of an affidavit in accordance with Section 1, paragraph 1.7.

C. Materials

1. All materials used in the production of dry-barrel fire hydrants shall conform to the referenced standards for each material as set forth in Section 2 - Materials, paragraphs 2.2.1 thru 2.2.5.

D. General Design and Detailed Design

1. General Design

a. General design of hydrants shall be in accordance with Section 3, paragraph 3.1 and subparagraphs 3.1.1 thru 3.1.6.

2. Detailed Design

a. Valves

(1) Valves shall be in accordance with Section 3, paragraph 3.4.1 and subparagraphs 3.4.1.1 thru 3.4.1.4.

b. Size

(1) Hydrant size shall be in accordance with Section 3, paragraph 3.2.4, except that main valve opening diameter may not be less than 5 1/4 inches.

c. Bury-length and Trench Depth

(1) Unless otherwise noted, depth of hydrant will be 3'-6". In the event that a hydrant is installed at a location requiring greater than the "standard bury" depth, the CONTRACTOR will be required to provide the riser sections required at no additional cost to the OWNER.

d. Barrel Sections

(1) Hydrant barrel sections shall be in accordance with Section 3, paragraph 3.2.2 and subparagraphs 3.2.2.1 and 3.2.2.2 except that the flange or other joint at 2 inches above the ground line shall be a breakable joint.

e. Outlet Nozzles

(1) Hydrant outlet nozzles shall be in accordance with Section 3, paragraph 3.2.3 and subparagraph 3.2.3.1 and 3.2.3.2

105-14-03 (8/14)

except that leading shall not be used in fastening nozzles to the hydrant barrel.

f. Operating Stem and Mechanism

(1) The hydrant operating mechanism shall be in accordance with Section 3, paragraph 3.2.5 and subparagraphs 3.2.5.1 thru 3.2.5.5.

g. Drain Outlet

(1) An automatic drain outlet shall be provided. The outlet shall be located in the base or barrel or between the base and barrel. Tapping of the outlet is not required. Other features of the drain outlet shall be in accordance with Section 3, paragraphs 3.4.2 thru 3.4.2.4.

h. O-ring Seals

(1) A seal that uses O-rings shall be used. O-rings and their ring groves shall be in accordance with Section 3, paragraph 3.6.1 and subparagraph 3.6.1.1.

i. Gaskets

(1) Gaskets shall be in accordance with Section 3, paragraph 3.6.4.

j. Bolts and Nuts

(1) With the exception of flange bolts at breakable hydrant barrel section, all bolts and nuts shall be of corrosion resistant material, in accordance with Section 3, paragraph 3.7. Breakable section bolts may be of steel.

k. Hydrant Inlet

(1) The base of the hydrant shall have a bottom inlet provided with a hub end for mechanical joint connection provided with strapping lugs for strapping hydrant to water main to prevent separation of the hydrant and hydrant branch from the main line, or the hub end may be plain mechanical joint, provided locked type pipe joints are used between the hydrant and water main. Refer to Section 02610 of these Specifications for optional methods of restraint for hydrants.

105-14-03 (8/14)

E. Workmanship and Painting

1. Workmanship shall be in accordance with Section 4, paragraph 4.1 and subparagraph 4.1.1 through 4.1.3.

2. Painting shall be in accordance with Section 4, paragraph 4.2 and sub-paragraphs 4.2.1 through 4.2.4.

F. Inspection, Testing and Rejection

1. Testing shall be in accordance with Section 5, paragraph 5.1 and (sub-paragraphs 5.1.1 through 5.1.3). The ENGINEER shall be furnished 2 copies of all tests.

2. Inspection and rejection shall be in accordance with Section 5, paragraph 5.3, with 2 copies of affidavit being supplied the ENGINEER.

G. Marking and Shipping

1. Marking and shipping shall be in accordance with Section 6, paragraphs 6.1 and 6.2, except that hydrants having a depth of bury greater than the standard 3'-6", shall be given a tag number which corresponds to the hydrants plant location number. Tags, if required, shall be of durable materials and markings.

PART 3 EXECUTION

3.01 INSTALLATION (In Structures, Vaults and Basins)

A. Interior

1. All valves and appurtenances shall be installed at the locations shown on the Drawings. All necessary materials, parts, operators and gaskets shall be furnished and installed under this Contract.

2. All valves shall be installed with their operators located in such a plane that it will not interfere with pedestrian traffic. All valves with the operator more than 7'-0" off the floor shall be modified for chain operation at no cost to the OWNER.

3. Particular attention shall be paid to the location and orientation of all valve operators to provide an accessible installation. Should any valve be located with the operator inaccessible and simple reorientation of the valve would make it accessible, the valve shall be moved at no cost the OWNER.

105-14-03 (8/14)

4. All pipe and valves shall be supported by pipe hangers, concrete piers or other special supports as required to prevent undue stress being placed on the pipe, any fitting, valve or item of equipment. Equipment shall not be used to support pipe and fittings. The pipe shall be free of all openings in walls and slabs when the final position of the piping is attained and before sealing the annular space about the pipe.

5. The CONTRACTOR shall thoroughly clean the valves fittings before starting erection. All scale, rust and dirt shall be removed by power brushing and/or solvent cleaning.

B. Exterior

1. Valves in ground shall be installed with operating stems vertical, unless otherwise shown on the Drawings or called for in these Specifications. Tops of operating nuts shall be not more than 30 inches below ground surface. Where valve operating nuts are more than 30 inches below tops of valve boxes, stems shall be provided to bring the operating nut to within 12 to 24 inches of box tops.

2. Valve boxes shall be accurately centered over valve operating nuts and the backfill shall be mechanically tamped about them, to prevent subsequent movement. Tops of boxes shall be flush with ground surface, paving, walk, or road surface.

3. The cost of the concrete collar, required about valve boxes, shall be included in the unit price for the valve and/or box.

C. For gate valves, installation shall be in accordance with Appendix A, Sections A.5.1 through A.5.7 of ANSI/AWWA C509-94.

3.02 SHOP PAINTING

A. Interior surfaces of all valves, the exterior surfaces of buried valves and miscellaneous piping appurtenances shall be given a shop finish of an asphalt varnish conforming to Federal Specification TT-V51e for Varnish Asphalt.

B. The exterior surface of various parts of valves, operators, floorstands and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease, or other foreign matter and thereafter 1 shop coat of an approved rust-inhibitive primer such as specified in Section 09900 shall be applied in accordance with the instructions of the paint manufacturer.

3.03 INSPECTION AND TESTING

A. The various pipelines in which the valves and appurtenances are to be installed are specified to be field tested. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.

105-14-03 (8/14)

B. Various regulating valves, strainer, or other appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

C. Testing shall be done in accordance with Section 02610 "TESTING" with no visible leaks allowed on valves.

3.04 FIELD PAINTING

A. Field painting is specified in Section 09900.

B. The CONTRACTOR and the equipment manufacturer shall coordinate shop paint and field paint to assure compatibility, in accordance with Section 09900.

3.05 TOOLS AND SPARE PARTS

A. "All special tools required for normal operation and maintenance shall be furnished by the valve manufacturer."

3.06 METHOD OF PAYMENT

A. Payment for the complete system shall be included in the lump sum or unit price bid for the project and shall include the furnishing of materials, equipment and parts and installation of all components to provide a completely functional system.

END OF SECTION

***

105-14-03 (8/14)

SECTION 15107

WATER METERS, SERVICE VALVES, STOPS AND MISCELLANEOUS APPURTENANCES FOR WATER LINE PROJECTS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Furnish all labor, materials, and accessories to install equipment required by the Project, shown on the Drawings or specified herein, including the following:

1. Miscellaneous stops
2. Blow-off hydrants

1.02 RELATED WORK

A. Excavation, backfill, and grading are included in Division 2.

B. Piping is included in the respective sections of Divisions 2 and 15.

C. Large plumbing valves and appurtenances are included in this Division, Section 15102.

D. Plumbing piping and fittings are included in Division 2.

1.03 QUALITY ASSURANCE

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

1.04 SUBMITTALS

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

105-14-03 (8/14)

PART 2 PRODUCTS

2.01 GENERAL

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

2.02 MISCELLANEOUS STOPS

A. Corporation Stops and Accessories

1. Corporation stops to be used with threaded pipe where connected into cast iron pipe, shall be brass ground joint type with AWWA CC or CS taper thread inlets and iron pipe thread outlets for threaded iron pipe. Stops shall be Mueller H-10045, H-9996, H-9966, or equal.

2. Corporation stops to be used with flared copper tubing where connected into ductile iron pipe, shall be brass ground joint type with AWWA CC or CS taper thread inlets and flared copper outlets and shall be Mueller 15050, or equal.

3. Corporation stops to be used with plastic tubing where connected into ductile iron pipe shall be brass ground joint type with AWWA CC or CS taper thread inlets and compression connection outlets shall be Mueller H-15008, H-15009, H-15013, or equal.

4. Corporation stops installed in plastic (PVC or PE) mains shall be attached and installed using a tapping saddle. For ASTM specification PVC pipe, the tapping saddle shall be a bronze, 2 section saddle for 2 inch through 8 inch size mains or a bronze, 3 section saddle for 10 inch and 12 inch mains, double strap; Mueller H-1434-2, Angle Dual Check Valve, through H-13435; corporation stops to be Mueller H-15008, ball-type compression connections to PE service line. For AWWA specification PVC pipe (C-900) use Mueller H-16123 through H-16137 or equal.

5. Corporation stops shall be factory tested to 250 psi to be compatible with the pipes in which they are installed.

B. Curb Stops and Accessories

1. Curb stops to be used with threaded pipe shall be brass inverted key round way with female threaded iron pipe connections for threaded iron pipe. Curb stops shall be Mueller H-10201 or equal.

2. Curb stops to be used with copper pipe, with flared type connections, shall be Mueller H-15200 or equal.

105-14-03 (8/14)

3. Curb stops to be used with plastic pipe shall be brass inverted key round way with compression type connections. Curb stops shall be Mueller H-15207 or equal.

4. Furnish and install with each curb stop, a cast iron curb valve box, cast iron extension type with arch pattern base, with lid marked "WATER." Also furnish 2 tee wrenches, 4 feet in length, for operation of curb stops.

2.03 BLOW-OFF HYDRANT

A. For Rural Locations

1. Blow-off hydrant shall be a preassembled unit consisting of a cast iron, lockable box at ground level, housing the valve operating nut, and 2 inch NST outlet for hose connection with 20 feet of hose and couplings. Hydrant shall be fitted with 3 inch ductile iron barrel of sufficient length to allow 30 inch bury. Inlet shall be 3 inch as shown on plans.

2. Blow-off hydrant assembly shall be Eclipse No. 85 by the John C. Kupferle Foundry Co. with hose and accessories, or equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. All water meters, miscellaneous water service valves, stops, and appurtenances shall be installed in locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.

B. All meters in boxes or vaults shall be located so that they may be easily read and serviced.

C. After installation, all valves and appurtenances shall be tested at least 1 hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the ENGINEER.

D. All materials shall be carefully inspected for defects in workmanship and materials; all debris and foreign material cleaned out of openings, etc.; all operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Equipment which does not operate easily, or is otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.

E. Blow-off hydrants shall be set at the locations as shown on the Drawings and bedded on a firm foundation.

F. The hydrant shall be tied to the pipe with suitable rods or clamps, galvanized, painted, or otherwise rustproof treated and/or as shown on plan detail sheets.

105-14-03 (8/14)

Concrete used for blocking shall be no leaner than 1 part cement, 2-1/2 parts sand, and 5-1/2 parts stone.

3.03 INSPECTION AND TESTING

A. The various pipelines in which the specified equipment is to be installed is specified to be field tested. During these tests any defective equipment shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.

B. Various meters regulating valves, strainers, or other appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

END OF SECTION

***

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2012* and *Standard Drawings, Edition of 2012 with the 2012 Revision.*

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

Subsection:	212.05 PAYMENT.
Revision:	Delete the following item code:
	Code Pay Item Pay Unit
	05966 Topdressing Fertilizer Ton
Subsection:	212.05 PAYMENT.
Revision:	Add the following pay items:
	Code Pay Item Pay Unit
	05963 Initial Fertilizer Ton
	05964 20-10-10 Fertilizer Ton
	05992 Agricultural Limestone Ton
Subsection:	213.03.02 Progress Requirements.
Revision:	Replace the last sentence of the third paragraph with the following:
	Additionally, the Department will apply a penalty equal to the liquidated damages when all aspects of the work are not coordinated in an acceptable manner within 7 calendar days after written notification.
Subsection:	213.03.05 Temporary Control Measures.
Part:	E) Temporary Seeding and Protection.
Revision:	Delete the second sentence of the first paragraph.
Subsection:	304.02.01 Physical Properties.
Table:	Required Geogrid Properties
Revision:	Replace all references to Test Method "GRI-GG2-87" with ASTM D 7737.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	B) Sampling.
Revision:	Replace the second sentence with the following:
	The Department will determine when to obtain the quality control samples using the random-number feature of the mix design submittal and approval spreadsheet. The Department will randomly determine when to obtain the verification samples required in Subsections 402.03.03 and 402.03.04 using the Asphalt Mixture Sample Random Tonnage Generator.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	3) VMA.
Revision:	Add the following paragraph below Number 3) VMA:
	Retain the AV/VMA specimens and one additional corresponding G_{mm} sample for 5 working days for mixture verification testing by the Department. For Specialty Mixtures, retain a mixture sample for 5 working days for mixture verification testing by the Department. When the Department's test results do not verify that the Contractor's quality control test results are within the acceptable tolerances according to Subsection 402.03.03, retain the samples and specimens from the affected sublot(s) for the duration of the project.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	4) Density.
Revision:	Replace the second sentence of the Option A paragraph with the following:
	Perform coring by the end of the following work day.

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

Subsection: **Revision:**	412.03.07 Placement and Compaction. Replace the first paragraph with the following: Use a MTV when placing SMA mixture in the driving lanes. The MTV is not required on ramps and/or shoulders unless specified in the contract. When the Engineer determines the use of the MTV is not practical for a portion of the project, the Engineer may waive its requirement for that portion of pavement by a letter documenting the waiver.
Subsection: **Revision:**	412.04 MEASUREMENT. Add the following subsection: 412.04.03. Material Transfer Vehicle (MTV). The Department will not measure the MTV for payment and will consider its use incidental to the asphalt mixture.
Subsection: **Part:** **Revision:**	501.03.19 Surface Tolerances and Testing Surface. B) Ride Quality. Add the following to the end of the first paragraph: The Department will specify if the ride quality requirements are Category A or Category B when ride quality is specified in the Contract. Category B ride quality requirements shall apply when the Department fails to classify which ride quality requirement will apply to the Contract.
Subsection: **Revision:**	603.03.06 Cofferdams. Replace the seventh sentence of paragraph one with the following: Submit drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	605.03.04 Tack Welding. Insert the subsection and the following: 605.03.04 Tack Welding. The Department does not allow tack welding.
Subsection: **Part:** **Number:** **Revision:**	606.03.17 Special Requirements for Latex Concrete Overlays. A) Existing Bridges and New Structures. 1) Prewetting and Grout-Bond Coat. Add the following sentence to the last paragraph: Do not apply a grout-bond coat on bridge decks prepared by hydrodemolition.
Subsection: **Revision:**	609.03 Construction. Replace Subsection 609.03.01 with the following: 609.03.01 A) Swinging the Spans. Before placing concrete slabs on steel spans or precast concrete release the temporary erection supports under the bridge and swing the span free on its supports. 609.03.01 B) Lift Loops. Cut all lift loops flush with the top of the precast beam once the beam is placed in the final location and prior to placing steel reinforcement. At locations where lift loops are cut, paint the top of the beam with galvanized or epoxy paint.
Subsection: **Revision:**	611.03.02 Precast Unit Construction. Replace the first sentence of the subsection with the following: Construct units according to ASTM C1577, **replacing Table 1 (Design Requirements for Precast Concrete Box Sections Under Earth, Dead and HL-93 Live Load Conditions) with KY Table 1 (Precast Culvert KYHL-93 Design Table)**, and Section 605 with the following exceptions and additions:

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

Subsection:	615.08.01 Type of Test Specimen.
Revision:	Replace the subsection with the following: Start-up slump, air content, unit weight, and temperature tests will be performed each day on the first batch of concrete. Acceptable start-up results are required for production of the first unit. After the first unit has been established, random acceptance testing is performed daily for each 50 yd^3 (or fraction thereof). In addition to the slump, air content, unit weight, and temperature tests, a minimum of one set of cylinders shall be required each time plastic property testing is performed.
Subsection:	615.08.02 Compression Testing.
Revision:	Delete the second sentence.
Subsection:	615.08.04 Acceptability of Core Tests.
Revision:	Delete the entire subsection.
Subsection:	615.12 Inspection.
Revision:	Add the following sentences to the end of the subsection: Units will arrive at jobsite with the "Kentucky Oval" stamped on the unit which is an indication of acceptable inspection at the production facility. Units shall be inspected upon arrival for any evidence of damage resulting from transport to the jobsite.
Subsection:	716.02.02 Paint.
Revision:	Replace sentence with the following: Conform to Section 821.
Subsection:	716.03 CONSTRUCTION.
Revision:	Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,
Subsection:	716.03.02 Lighting Standard Installation.
Revision:	Replace the second sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Revision:	Replace the third sentence with the following: Orient the transformer base so the door is positioned on the side away from on-coming traffic.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Number:	1) Breakaway Installation and Requirements.
Revision:	Replace the first sentence with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Revision:	Replace the first sentence with the following: Install each high mast pole as noted on plans.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Number:	2) Concrete Base Installation
Revision:	Modification of Chart and succeeding paragraphs within this section:

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

	<table><tr><td colspan="8">Drilled Shaft Depth Data</td></tr><tr><td colspan="2">Level Ground</td><td colspan="2">3:1 Ground Slope</td><td colspan="2">2:1 Ground Slope</td><td colspan="2">1.5:1 Ground Slope (2)</td></tr><tr><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td></tr><tr><td>17 ft</td><td>7 ft</td><td>19 ft</td><td>7 ft</td><td>20 ft</td><td>7 ft</td><td>(1)</td><td>7 ft</td></tr></table><table><tr><td colspan="4">Steel Requirements</td></tr><tr><td colspan="2">Vertical Bars</td><td colspan="2">Ties or Spiral</td></tr><tr><td>Size</td><td>Total</td><td>Size</td><td>Spacing or Pitch</td></tr><tr><td>#10</td><td>16</td><td>#4</td><td>12 inch</td></tr></table> (1): Shaft length is 22' for cohesive soil only. For cohesionless soil, contact geotechnical branch for design. (2): Do not construct high mast drilled shafts on ground slopes steeper than 1.5:1 without the approval of the Division of Traffic. If rock is encountered during drilling operations and confirmed by the engineer to be of sound quality, the shaft is only required to be further advanced into the rock by the length of rock socket shown in the table. The total length of the shaft need not be longer than that of soil alone. Both longitudinal rebar length and number of ties or spiral length shall be adjusted accordingly. If a shorter depth is desired for the drilled shaft, the contractor shall provide, for the state's review and approval, a detailed column design with individual site specific soil and rock analysis performed and approved by a Professional Engineer licensed in the Commonwealth of Kentucky. Spiral reinforcement may be substituted for ties. If spiral reinforcement is used, one and one-half closed coils shall be provided at the ends of each spiral unit. Subsurface conditions consisting of very soft clay or very loose saturated sand could result in soil parameters weaker than those assumed. Engineer shall consult with the geotechnical branch if such conditions are encountered. The bottom of the drilled hole shall be firm and thoroughly cleaned so no loose or compressible materials are present at the time of the concrete placement. If the drilled hole contains standing water, the concrete shall be placed using a tremie to displace water. Continuous concrete flow will be required to insure full displacement of any water. The reinforcement and anchor bolts shall be adequately supported in the proper positions so no movement occurs during concrete placement. Welding of anchor bolts to the reinforcing cage is unacceptable, templates shall be used. Exposed portions of the foundation shall be formed to create a smooth finished surface. All forming shall be removed upon completion of foundation construction.
Subsection: **Part:** **Revision:**	716.03.03 Trenching. A) Trenching of Conduit for Highmast Ducted Cables. Add the following after the first sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

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

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

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

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

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

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

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

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

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

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

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

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

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

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

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

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

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

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

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

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

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

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

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

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

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

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	618	ASTM D6241
Grab Strength (lbs)	700	ASTM D4632
Apparent Opening Size	U.S. #40[3]	ASTM D4751

[3] Maximum average roll value.

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

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

ATTACHMENTS

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

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

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

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

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

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

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

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

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

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

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

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

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

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

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

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

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

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

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

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

b. Trainees (programs of the USDOL).

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

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

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

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

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

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

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

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

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

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

VII. SAFETY: ACCIDENT PREVENTION

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

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

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

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

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

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

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

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

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

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

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

EMPLOYMENT REQUIREMENTS
RELATING TO
NONDISCRIMINATION OF EMPLOYEES
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)

AN ACT OF THE KENTUCKY GENERAL ASSEMBLY TO PREVENT DISCRIMINATION IN EMPLOYMENT

KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy). The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, disability or age (between forty and seventy), except that such notice or advertisement may indicate a preference, limitation, or specification based on religion, or national origin when religion, or national origin is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age (between forty and seventy), in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

REVISED: 12-3-92

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

> KRS 11A.040 (6) provides:
>
> No present or former public servant shall, within six (6) months of following termination of his office or employment, accept employment, compensation or other economic benefit from any person or business that contracts or does business with the state in matters in which he was directly involved during his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved in state government. This subsection shall not prohibit the performance of ministerial functions, including, but not limited to, filing tax returns, filing applications for permits or licenses, or filing incorporation papers.
>
> KRS 11A.040 (8) states:
>
> A former public servant shall not represent a person in a matter before a state agency in which the former public servant was directly involved, for a period of one (1) year after the latter of:
> a) The date of leaving office or termination of employment; or
> b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, Room 136, Capitol Building, 700 Capitol Avenue, Frankfort, Kentucky 40601; telephone (502) 564-7954.

General Decision Number: KY140123 01/03/2014 KY123

Superseded General Decision Number: KY20130124

State: Kentucky

Construction Type: Highway

Counties: Adair, Barren, Bell, Breathitt, Casey, Clay, Clinton, Cumberland, Estill, Floyd, Garrard, Green, Harlan, Hart, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lincoln, Magoffin, Martin, McCreary, Menifee, Metcalfe, Monroe, Morgan, Owsley, Perry, Pike, Powell, Pulaski, Rockcastle, Russell, Taylor, Wayne, Whitley and Wolfe Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/03/2014

SUKY2013-001 12/06/2013

	Rates	Fringes
BOILERMAKER	$ 24.65	12.94
BRICKLAYER		
Bricklayer	$ 22.90	8.50
Stone Mason	$ 21.50	8.50
CARPENTER		
Carpenter	$ 24.15	13.50
Piledriver	$ 23.80	13.50
ELECTRICIAN		
Equipment Operator	$ 26.90	10.31
Groundsman	$ 17.79	8.51
Lineman	$ 30.09	10.94

When workmen are required to work from bosum chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and T.V. towers, structural steel (open, unprotected, unfloored raw steel), and bridges or similar hazardous locations where workmen are subject to fall, except where using JLG's and bucket trucks up to 75 feet: Add 25% to workman's base rate for 50 to 75 feet, and add 50% to workman's base rate for over 75 feet.

IRONWORKER	$ 26.34	18.84
LABORER		
Group 1	$ 21.15	11.41
Group 2	$ 21.40	11.41
Group 3	$ 21.45	11.41
Group 4	$ 22.05	11.41

GROUP 1: Aging and Curing of Concrete (Any Mode or Method), Asbestos Abatement Worker, Asphalt Plant Laborers, Asphalt Laborers, Batch Truck Dumpers, Carpenter Tenders, Cement Mason Tenders, Cleaning of Machines, Concrete Laborers, Demolition Laborers, Dredging Laborers, Drill Tender, Environmental

Laborer - Nuclear, Radiation, Toxic and Hazardous Waste - Level D, Flagmen, Grade Checkers, All Hand Digging and Hand Back Filling, Highway Marker Placers, Landscaping Laborers, Mesh Handlers and Placers, Puddler, Railroad Laborers, Rip-rap and Grouters, Right of Way Laborers, Sign, Guard Rail and Fence Installers (All Types), Signalmen, Sound Barrier Installer, Storm and Sanitary Sewer Laborers, Swampers, Truck Spotters and Dumpers, Wrecking of Concrete Forms, General Cleanup

GROUP 2: Batter Board Men (Sanitary and Storm Sewer), Brickmason Tenders, Mortar Mixer Operator, Scaffold Builders, Burner and Welder, Bushammers, Chain Saw Operator, Concrete Saw Operators, Deckhand Scow Man, Dry Cement Handlers, Environmental Laborers - Nuclear, Radiation, Toxic and Hazardous Waste - Level C, Forklift Operators for Masonry, Form Setters, Green Concrete Cutting, Hand Operated Grouter and Grinder Machine Operator, Jack Hammers, Lead Paint Abatement, Pavement Breakers, Paving Joint Machine, Pipe Layers - Laser Operators (Non-metallic), Plastic Pipe Fusion, Power Driven Georgia Buggy and Wheel Barrow, Power Post Hole Diggers, Precast Manhole Setters, Walk-behind Tampers, Walk-behind Trenchers, Sand Blasters, Concrete Chippers, Surface Grinders, Vibrator Operators, Wagon Drillers

GROUP 3: Air Track Driller (All Types), Asphalt Luteman and Rakers, Gunnite Nozzleman, Gunnite Operators and Mixers, Grout Pump Operator, Powderman and Blaster, Side Rail Setters, Rail Paved Ditches, Screw Operators, Tunnel Laborers (Free Air), Water Blasters

GROUP 4: Caisson Workers (Free Air), Cement Finishers, Environmental Laborer - Nuclear, Radiation, Toxic and Hazardous Waste - Level A and B, miners and Drillers (Free Air), Tunnel Blasters, and Tunnel Mockers (Free Air), Directional and Horizontal Boring, Air Track Drillers (All Types), Powder Man and Blasters, Troxler and Concrete Tester if Llaborer is Utilized

PAINTER		
All Excluding Bridges	$ 19.92	9.57
Bridges	$ 23.92	10.07
PLUMBER	$ 22.52	7.80
POWER EQUIPMENT OPERATOR:		
Group 1	$ 27.35	13.40
Group 2	$ 24.87	13.40
Group 3	$ 25.26	13.40
Group 4	$ 24.60	13.40

GROUP 1: Auto Patrol, Batcher Plant, Bituminous Paver, Cable-Way, Clamshell, Concrete Mixer (21 cu ft or over), Concrete Pump, Crane, Crusher Plant, Derrick, Derrick Boat, Ditching and Trenching Machine, Dragline, Dredge Engineer, Elevating Grader and all types of Loaders, Hoe-type Machine, Hoisting Engine, Locomotive, LeTourneau or Carry-all Scoop, Bulldozer, Mechanic, Orangepeel Bucket, Piledriver, Power Blade, Roller (Bituminous), Roller (Earth), Roller (Rock), Scarifier, Shovel, Tractor Shovel, Truck Crane, Well Point, Winch Truck, Push Dozer, Grout Pump, High Lift, Fork Lift (regardless of

lift height), all types of Boom Cats, Multiple Operator, Core Drill, Tow or Push Boat, A-Frame Winch Truck, Concrete Paver, Grade-All, Hoist, Hyster, Material Pump, Pumpcrete, Ross Carrier, Sheepfoot, Sideboom, Throttle-Valve Man, Rotary Drill, Power Generator, Mucking Machine, Rock Spreader attached to Equipment, Scoopmobile, KeCal Loader, Tower Cranes, Hydrocrane, Tugger, Backfiller Gurries, Self-propelled Compactor, Self-Contained Hydraulic Percussion Drill

GROUP 2: All Air Compressors (200 cu ft/min or greater), Bituminous Mixer, Concrete Mixer (under 212 cu ft), Welding Machine, Form Grader, Tractor (50 hp and over), Bull Float, Finish Machine, Outboard Motor Boat, Brakeman, Mechanic Tender, Whirly Oiler, Tract-air, Road Widening Trencher, Articulating Trucks

GROUP 3: Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4: Bituminous Distributor, Cement Gun, Conveyor, Mud Jack, Paving Joint Machine, Pump, Tamping Machine, Tractor (under 50 hp), Vibrator, Oiler, Air Compressor (under 200 cu ft per minute), Concrete Saw, Burlap and Curing Machine, Hydro Seeder, Power Form Handling Equipment, Deckhand Oiler, Hydraulic Post Driver

SHEET METAL WORKER	$ 20.40	7.80
TRUCK DRIVER		
Driver (3 Tons and Over), Driver (Truck Mounted Rotary Drill)	$ 22.99	13.50
Driver (3 Tons and Under), Tire Changer and Truck Mechanic Tender	$ 22.78	13.50
Driver (Semi-Trailer or Pole Trailer), Driver (Dump Truck, Tandem Axle), Driver of Distributor	$ 22.65	13.50
Driver on Mixer Trucks (All Types)	$ 22.70	13.50
Driver on Pavement Breakers	$ 22.80	13.50
Driver, Euclid and Other Heavy Earth Moving Equipment and Low Boy	$ 23.56	13.50
Driver, Winch Truck and A-Frame when used in Transporting Materials	$ 22.55	13.50
Greaser on Greasing Facilities	$ 23.65	13.50
Truck Mechanic	$ 22.75	13.50
Truck Tender and Warehouseman	$ 22.45	13.50

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

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 union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows 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. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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.

==========

END OF GENERAL DECISION

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

Determination No. CR-14-II-HWY

Project No.
Highway

Date of Determination: July 14, 2014

This schedule of the prevailing rate of wages for Locality No. II including the counties of ADAIR, BARREN, BELL, BREATHITT, CASEY, CLAY, CLINTON, CUMBERLAND, ESTILL, FLOYD, GARRARD, GREEN, HARLAN, HART, JACKSON, JOHNSON, KNOTT, KNOX, LAUREL, LAWRENCE, LEE, LESLIE, LETCHER, LINCOLN, MCCREARY, MAGOFFIN, MARTIN, MENIFEE, METCALFE, MONROE, MORGAN, OWSLEY, PERRY, PIKE, POWELL, PULASKI, ROCKCASTLE, RUSSELL, TAYLOR, WAYNE, WHITLEY, and WOLFE has been determined in accordance with the provisions of KRS 337.505 to 337.550. This determination shall be referred to as Prevailing Wage Determination No. CR-14-II-HWY.

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

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

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

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

Anthony Russell, Commissioner
Department of Workplace Standards

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

*When workmen are required to work from bosum chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and T.V. towers, structural steel (open, unprotected, unfloored raw steel), and bridges or similar hazardous locations where workmen are subject to a direct fall, except where using JLG's and bucket trucks up to 75 feet: Add 25% to workman's base rate for 50 to 75 feet, and add 50% to workman's base rate for over 75 feet.

LINEMAN:	*BASE RATE	$30.09
	FRINGE BENEFITS	10.94
EQUIPMENT OPERATOR:	*BASE RATE	$26.90
	FRINGE BENEFITS	10.31
GROUNDSMAN:	*BASE RATE	$17.79
	FRINGE BENEFITS	8.51
IRONWORKERS:	BASE RATE	$ 26.97
	FRINGE BENEFITS	20.01

CLASSIFICATIONS — RATE AND FRINGE BENEFITS

LABORERS:

GROUP 1: Aging and curing of concrete (any mode or method), asbestos abatement worker, asphalt plant laborers, asphalt laborers; batch truck dumpers; carpenter tenders, cement mason tenders, cleaning of machines, concrete laborers, demolition laborers, dredging laborers, drill helper, environmental laborer - nuclear, radiation, toxic and hazardous waste – Level D, flagmen, grade checkers, all hand digging and hand back filling, highway marker placers, landscaping laborers, mesh handlers and placers, puddler, railroad laborers, rip-rap and grouters, right of way laborers, sign, guard rail and fence installers (all types), signalmen, sound barrier installer, storm and sanitary sewer laborers, swampers, truck spotters and dumpers, wrecking of concrete forms, general cleanup:

HEAVY & HIGHWAY	BASE RATE	$21.80
	FRINGE BENEFITS	12.36

GROUP 2: Batter board men (sanitary and storm sewer), brickmason tenders, mortar mixer operator, scaffold builders, burner and welder, bushammers, chain saw operator, concrete saw operators, deckhand scow man, dry cement handlers, environmental laborers – nuclear, radiation, toxic and hazardous waste – Level C, forklift operators for masonry, form setters, green concrete cutting, hand operated grouter and grinder machine operator, jack hammers, lead paint abatement, pavement breakers, paving joint machine, pipe layers – laser operators (non-metallic), plastic pipe fusion, power driven Georgia buggy and wheel barrow, power post hole diggers, precast manhole setters, walk-behind tampers, walk-behind trenchers, sand blasters, concrete chippers, surface grinders, vibrator operators, wagon drillers:

HEAVY & HIGHWAY	BASE RATE	$22.05
	FRINGE BENEFITS	12.36

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

HEAVY & HIGHWAY	BASE RATE	$22.10
	FRINGE BENEFITS	12.36

GROUP 4: Caisson workers (free air), cement finishers, environmental laborer – nuclear, radiation, toxic and hazardous waste – Level A and B, miners and drillers (free air), tunnel blasters, and tunnel mockers (free air), directional and horizontal boring, air track drillers (all types), powder man and blasters, troxler and concrete tester if laborer is utilized:

HEAVY & HIGHWAY	BASE RATE	$22.70
	FRINGE BENEFITS	12.36

OPERATING ENGINEERS:

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

BASE RATE	$29.95
FRINGE BENEFITS	14.15

CLASSIFICATIONS — RATE AND FRINGE BENEFITS

OPERATING ENGINEERS (CONTINUED):

Group A:

Auto patrol, batcher plant, bituminous paver, cable-way, clamshell, concrete mixer (21 cu. ft. or over), concrete pump, crane, crusher plant, derrick, derrick boat, ditching and trenching machine, dragline, dredge engineer, elevator (regardless of ownership when used for hoisting any building material), elevating grader and all types of loaders, hoe-type machine, hoisting engine, locomotive, LeTourneau or carry-all scoop, bulldozer, mechanic, orangepeel bucket, piledriver, power blade, roller (bituminous), roller (earth), roller (rock), scarifier, shovel, tractor shovel, truck crane, well points, winch truck, push dozer, grout pump, high lift, fork lift (regardless of lift height), all types of boom cats, multiple operator, core drill, tow or push boat, A-Frame winch truck, concrete paver, gradeall, hoist, hyster, material pump, pumpcrete, ross carrier,sheepfoot, sideboom, throttle-valve man, rotary drill, power generator, mucking machine, rock spreader attached to equipment, scoopmobile, KeCal loader, tower cranes (French, German and other types), hydrocrane, tugger, backfiller gurries, self-propelled compactor, self-contained hydraulic percussion drill:

BASE RATE	$28.85
FRINGE BENEFITS	14.15

Group B:

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

BASE RATE	$26.24
FRINGE BENEFITS	14.15

Group B2:

Greaser on grease facilities servicing heavy equipment:

BASE RATE	$26.65
FRINGE BENEFITS	14.15

Group C:

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

BASE RATE	$25.95
FRINGE BENEFITS	14.15

PAINTERS:

All Excluding Bridges:

BASE RATE	$19.92
FRINGE BENEFITS	9.57

Bridges:

BASE RATE	$23.92
FRINGE BENEFITS	10.07

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

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

These rates are listed pursuant to the Kentucky Determination No. CR-14-II- HWY dated July 14, 2014.

NOTE: Both Kentucky Determination No. CR-14-II-HWY and Federal Decision No. KY140123 apply to this project. Both sets of wage rates are included. If there is a difference in the two wages for the same classification, the Contractor is required to pay the higher of the two listed wages.

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

Diana Castle Radcliffe, P.E.
Director, Division of Construction Procurement
Frankfort, Kentucky 40622

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

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
2.5%	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 Johnson County.

PART IV

INSURANCE

INSURANCE

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

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

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

3) Employers Liability:

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

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

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

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

PART V

BID ITEMS

141066

PROPOSAL BID ITEMS

Report Date 10/29/14

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	818.00	TON		$	
0020	01830		STANDARD INTEGRAL CURB	2,400.00	LF		$	
0030	01876		STANDARD HEADER CURB MOD	164.00	LF		$	
0040	01902		REMOVE INTEGRAL CURB	2,400.00	LF		$	
0050	02058		REMOVE PCC PAVEMENT	3,020.00	SQYD		$	
0060	02073		JPC PAVEMENT-9 IN	3,020.00	SQYD		$	
0070	02101		CEM CONC ENT PAVEMENT-8 IN	152.00	SQYD		$	
0080	24110EC		PERM PAINT-BARRIER CURB	2,400.00	LF		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0090	01792		ADJUST MANHOLE	1.00	EACH		$	
0100	02014		BARRICADE-TYPE III	14.00	EACH		$	
0110	02562		TEMPORARY SIGNS	240.00	SQFT		$	
0120	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0130	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0140	02720		SIDEWALK-4 IN CONCRETE	445.00	SQYD		$	
0150	02721		REMOVE CONCRETE SIDEWALK	296.00	SQYD		$	
0160	02726		STAKING	1.00	LS		$	
0170	03425		ADJUST WATER VALVE	3.00	EACH		$	
0180	05990		SODDING	40.00	SQYD		$	
0190	06551		PAVE STRIPING-TEMP REM TAPE-Y	3,200.00	LF		$	
0200	06554		PAVE STRIPING-DUR TY 1-4 IN W	200.00	LF		$	
0210	06555		PAVE STRIPING-DUR TY 1-4 IN Y	1,604.00	LF		$	
0220	23158ES505		DETECTABLE WARNINGS	312.00	SQFT		$	
0230	23252ES717		PAVE MARK TY 1 TAPE STOP BAR-12 IN	108.00	LF		$	
0240	23264ES717		PAVE MARK TY 1 TAPE X-WALK-12 IN	871.00	LF		$	
0250	23269ES717		PAVE MARK TY 1 TAPE-COMBO ARROW	6.00	EACH		$	
0260	23270ES717		PAVE MARK TY 1 TAPE-CURV ARROW	2.00	EACH		$	
0270	40109		REMOVE & RE-INSTALL	1.00	EACH		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0280	00522		STORM SEWER PIPE-18 IN	100.00	LF		$	
0290	01204		PIPE CULVERT HEADWALL-18 IN	1.00	EACH		$	
0300	01720		RECONSTRUCT INLET	6.00	EACH		$	
0310	02484		CHANNEL LINING CLASS III	40.00	TON		$	
0320	02555		CONCRETE-CLASS B	4.00	CUYD		$	
0330	03260		CLEAN ROADWAY DRAINS	10.00	EACH		$	
0340	03383		PVC PIPE-4 IN	12.00	LF		$	
0350	20904ED		RECONSTRUCT CURB BOX INLET	2.00	EACH		$	
0360	23143ED		KPDES PERMIT AND TEMP EROSION CONTROL	1.00	LS		$	

PROPOSAL BID ITEMS

141066

Report Date 10/29/14

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0370	24543EC		CLEAN STORM SEWER SYSTEM	510.00	LF		$	

Section: 0004 - SEWER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0380	00071		CRUSHED AGGREGATE SIZE NO 57	100.00	TON		$	
0390	00082		CRUSHED AGGREGATE SIZE NO 9	100.00	TON		$	
0400	01051		SEWER PIPE-6 IN	460.00	LF		$	
0410	01052		SEWER PIPE-8 IN	758.00	LF		$	
0420	01053		SEWER PIPE-10 IN	15.00	LF		$	
0430	01054		SEWER PIPE-12 IN	15.00	LF		$	
0440	20426EC		SANITARY SEWER CLEANOUT-2 WAY	16.00	EACH		$	
0450	21213ED		CONCRETE PAVING REPLACEMENT	750.00	LF		$	
0460	23314EC		CONCRETE TRENCH SIDEWALK	80.00	LF		$	
0470	23483EC		SANITARY SERVICE & LATERAL CONN REINST	16.00	EACH		$	
0480	23657EC		SANITARY SEWER MANHOLE-INSTALL	3.00	EACH		$	
0490	23983EC		CRUSHED STONE BACKFILL IN TRENCH	2,200.00	CUYD		$	
0500	24447EC		PVC WYE-8 X 6	16.00	EACH		$	

Section: 0005 - TRAFFIC LOOPS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0510	04793		CONDUIT-1 1/4 IN	125.00	LF		$	
0520	04795		CONDUIT-2 IN	250.00	LF		$	
0530	04811		ELECTRICAL JUNCTION BOX TYPE B	3.00	EACH		$	
0540	04820		TRENCHING AND BACKFILLING	250.00	LF		$	
0550	04844		CABLE-NO. 14/5C	800.00	LF		$	
0560	20093NS835		INSTALL PEDESTRIAN HEAD-LED	8.00	EACH		$	
0570	21743NN		INSTALL PEDESTRIAN DETECTOR	8.00	EACH		$	
0580	23222EC		INSTALL SIGNAL PEDESTAL	4.00	EACH		$	
0590	24133EC		INSTALL SIGNAL SENSOR SYSTEM	3.00	EACH		$	

Section: 0006 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0600	00071		CRUSHED AGGREGATE SIZE NO 57	20.00	TON		$	
0610	00082		CRUSHED AGGREGATE SIZE NO 9	20.00	TON		$	
0620	01093		DUCTILE IRON PIPE-6 IN	75.00	LF		$	
0630	01095		DUCTILE IRON PIPE-8 IN	95.00	LF		$	
0640	03460		TIE-IN TO WATER LINE 8 IN	2.00	EACH		$	
0650	03460		TIE-IN TO WATER LINE 6 IN	3.00	EACH		$	
0660	03550		CUT & CAP EXIST WATER MAIN	1.00	EACH		$	

PROPOSAL BID ITEMS

141066

Report Date 10/29/14

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0670	23314EC		CONCRETE TRENCH SIDEWALK	10.00	LF		$	
0680	23517EC		GATE VALVE-6 IN-INSTALL	2.00	EACH		$	
0690	23695EC		GATE VALVE-8 IN-INSTALL	4.00	EACH		$	
0700	23705EC		CUT-CAP AND BLOCK-6 IN	3.00	EACH		$	
0710	23983EC		CRUSHED STONE BACKFILL	50.00	CUYD		$	

Section: 0007 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0720	02569		DEMOBILIZATION	1.00	LS		$	