**CALL NO. 112**

**CONTRACT ID. 195078**

**CLAY COUNTY**

**FED/STATE PROJECT NUMBER STP 9030 (052)**

**DESCRIPTION KY 577**

**WORK TYPE BRIDGE REPLACEMENT**

**PRIMARY COMPLETION DATE 9/1/2019**

**LETTING DATE: March 22,2019**

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME March 22,2019. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

**NO PLANS ASSOCIATED WITH THIS PROJECT.**

**DBE CERTIFICATION REQUIRED - 5%**

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

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# PART I

# SCOPE OF WORK

# ADMINISTRATIVE DISTRICT - 11

**CONTRACT ID - 195078**

**STP 9030 (052)**

**COUNTY - CLAY**

**PCN - BR02605771988**
**STP 9030 (052)**

KY 577 (MP 6.991) ADDRESS DEFICIENCIES OF KY 577 BRIDGE OVER LITTLE SEXTON CREEK (026B00093N) (MP 6.999), A DISTANCE OF 0.01 MILES.BRIDGE REPLACEMENT SYP NO. 11-10004.00.

GEOGRAPHIC COORDINATES LATITUDE 37:19:10.00 LONGITUDE 83:46:24.00

**COMPLETION DATE(S):**

COMPLETED BY 09/01/2019 APPLIES TO ENTIRE CONTRACT

# CONTRACT NOTES

## PROPOSAL ADDENDA

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

## BID SUBMITTAL

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

## JOINT VENTURE BIDDING

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

## UNDERGROUND FACILITY DAMAGE PROTECTION

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

## REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

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

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

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

## SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

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

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

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

## HARDWOOD REMOVAL RESTRICTIONS

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

## INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

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

## ACCESS TO RECORDS

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

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

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

# FEDERAL CONTRACT NOTES

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

102.02 Current Capacity Rating 102.10 Delivery of Proposals
102.8 Irregular Proposals 102.14 Disqualification of Bidders
102.9 Proposal Guaranty

## CIVIL RIGHTS ACT OF 1964

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

## NOTICE TO ALL BIDDERS

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

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

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

## SECOND TIER SUBCONTRACTS

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

## DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

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

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

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

## DBE GOAL

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

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

## OBLIGATION OF CONTRACTORS

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

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

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

**CERTIFICATION OF CONTRACT GOAL**

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

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

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

**DBE PARTICIPATION PLAN**

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

The DBE Participation Plan shall include the following:

1 Name and address of DBE Subcontractor(s) and/or supplier(s) intended to be used in the proposed project;
2 Description of the work each is to perform including the work item , unit, quantity, unit price and total amount of the work to be performed by the individual DBE. The 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 complete and submit a signed and notarized affidavit (TC 18-7) and copies of checks for any monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These documents must be submitted within 10 days of being paid by the Cabinet.

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

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, signed and notarized affidavit must be submitted by the Prime Contractor 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.

1/27/2017

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

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

SECTION 7 is expanded by the following new Article:

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

Pursuant to Title 46CFR Part 381, the Contractor agrees

- To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
- To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
- To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

**EXPEDITE PROJECT WORK ORDER**

The Contractor may request that the Department expedite the work order for this project to allow for maximization of time to complete the work. In order for the Department to accomplish this task, the Contractor may be required to "hand carry" all required project documentation to facilitate the process. Immediately UPON NOTIFICATION OF AWARD OF THE CONTRACT, deliver required project documentation to:

Division of Construction Procurement
200 Mero St.
Frankfort, KY 40602

**ASPHALT MIXTURE**

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

**INCIDENTAL SURFACING**

The Department has included in the quantities of asphalt mixtures established in the proposal estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, curve widening, ramp gores and tapers, and road and street approaches, as applicable. Pave these areas to the limits as shown on Standard Drawing RPM-110-06 or as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, pave the crossroads to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. Surface or resurface these areas as directed by the Engineer. The Department will not measure placing and compacting for separate payment but shall be incidental to the Contract unit price for the asphalt mixtures.

**OPTION B**

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

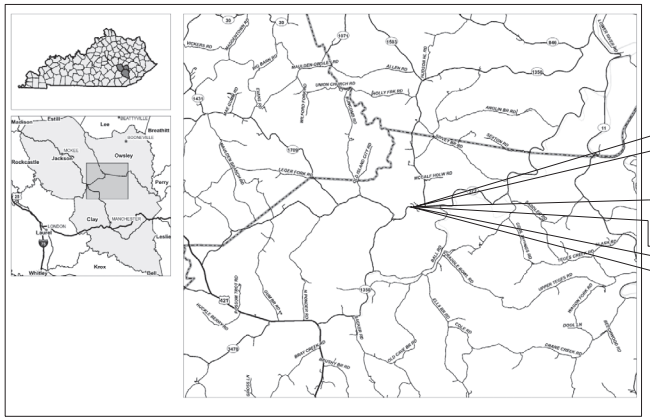
**PREAPPROVED UTILITY CONTRACTORS**

The Preapproved Utility Contractors that must be used on this project will be listed under the General Utility Notes.

| COUNTY OF | ITEM NO. | SHEET NO. |
|---|---|---|
| CLAY | 11-10004 | R1 |

# TRANSPORTATION CABINET
# DEPARTMENT OF HIGHWAYS

## CLAY COUNTY
## KY 577 OVER LITTLE SEXTON CREEK
## STA. 50+03.00




LOCATION MAP

0' 1000' 2000' 4000'

EXISTING BRIDGE ID# 026B00093N

### STANDARD DRAWINGS

| | |
|---|---|
| BGX-006-10 | STENCILS FOR STRUCTURES |
| BJE-001-13 | NEOPRENE EXPANSION DAMS AND ARMORED EDGES |
| BDP-001-05 | BOX BEAM GENERAL NOTES & REFERENCES |
| BDP-002-03 | BOX BEAM BEARING DETAILS |
| BDP-003-03 | BOX BEAM MISCELLANEOUS DETAILS |
| BDP-004-03 | BOX BEAM TENSION ROD DETAILS |
| BDP-005-05 | RAILING SYSTEM TYPE 11 |
| BDP-007-04 | BOX BEAM B17 & CB17 DETAILS |
| | |
| RBI-002-07 | TYPICAL GUARDRAIL INSTALLATIONS |
| RBR-005-11 | GUARDRAIL COMPONENTS |
| RBR-010-06 | GUARDRAIL TERMINAL SECTIONS |
| RBR-015-05 | STEEL GUARDRAIL POSTS |
| RDI-040-01 | EROSION CONTROL BLANKET SLOPE INSTALLATION |
| RDX-210-03 | TEMPORARY SILT FENCE |
| RDX-220-05 | SILT TRAP TYPE A |
| RDX-225-01 | SILT TRAP TYPE B |
| RDX-230-01 | SILT TRAP TYPE C |
| RGX-001-06 | MISCELLANEOUS STANDARDS |
| RGX-200-01 | ONE POINT PROCTOR FAMILY OF CURVES |

### ACTIVE SEPIAS

| | |
|---|---|
| SEPIA 009 | TREATMENT OF EMBANKMENTS AT END BENTS |
| SEPIA 010 | TREATMENT OF EMBANKMENTS AT END BENTS - DETAILS |
| SEPIA 024 | TYPICAL GUARDRAIL INSTALLATIONS |
| SEPIA 025 | INSTALLATION OF GUARDRAIL END TREATMENT TYPE I |
| SEPIA 027 | STEEL BEAM GUARDRAIL ('W' BEAM) |
| SEPIA 028 | STEEL GUARDRAIL POSTS |
| SEPIA 029 | GUARDRAIL END TREATMENT TYPE I |
| SEPIA 032 | DELINEATORS FOR GUARDRAIL |
| SEPIA 035 | RAILING SYSTEM TYPE II GUARDRAIL TREATMENT |

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- TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS
- BRIDGE OVERLAY APPROACH PAVEMENT
- EROSION PREVENTION AND SEDIMENT CONTROL
- PORTABLE CHANGEABLE MESSAGE SIGNS
- CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES
- CONCRETE COATING

### SPECIAL PROVISIONS

- 69 EMBANKMENT AT BRIDGE END BENT STRUCTURE

### SPECIFICATIONS

2012 Standard Specifications for Road and Bridge Construction.

2017 AASHTO LRFD Bridge Design Specifications with Current Interims.

### DESIGN CRITERIA

CLASS OF HIGHWAY: RURAL MINOR COLLECTOR
TYPE OF TERRAIN:
DESIGN SPEED:
REQUIRED NPSD:
REQUIRED PSD:
LEVEL OF SERVICE:
ADT PRESENT ( 2018 ): 437
ADT FUTURE ( ):
DHV:
D %:
T %:

### GEOGRAPHIC COORDINATES

LATITUDE 37 DEGREES 19 MINUTES 10 SECONDS NORTH
LONGITUDE 83 DEGREES 46 MINUTES 24 SECONDS WEST

### DESIGNED

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

STATE OF KENTUCKY — LEE M. SEWELL — 25363 — LICENSED PROFESSIONAL ENGINEER

STATE OF KENTUCKY — DONALD E. HORN — 21504 — LICENSED PROFESSIONAL ENGINEER

PREPARED BY: IE INTEGRATED ENGINEERING

BRIDGING KENTUCKY

**Commonwealth of Kentucky**
**DEPARTMENT OF HIGHWAYS**
**COUNTY OF**

**CLAY**

KY 577 OVER LITTLE SEXTON CREEK

ITEM NO. 11-10004
DRAWING NO. 27888
PROJECT NUMBER:
LETTING DATE: MARCH 22, 2019

RECOMMENDED BY: _____ PROJECT MANAGER DATE:

PLAN APPROVED BY: _____ STATE HIGHWAY ENGINEER DATE:

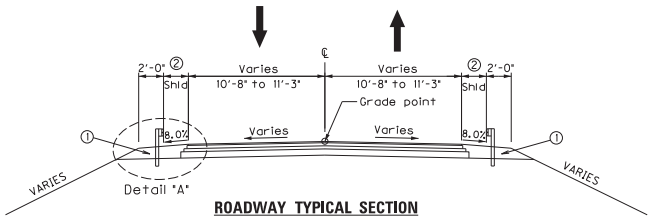
FILE NAME: ...\Roadway\Design\R00100LS.dgn
USER: LeeS
DATE PLOTTED: 2/6/2019 6:33:54 AM
E-SHEET NAME:
Power InRoads v8.11.9.397

| COUNTY OF | ITEM NO. | SHEET NO. |
|---|---|---|
| CLAY | 11-10004 | R2 |

NOTES:

① DGA Base needed for shoulders outside of paved area will be measured and paid as GRANULAR EMBANKMENT in accordance with the Special Note for Bridge Overlay Approach Pavement

② Width varies 0' to 2'-0"




**ROADWAY TYPICAL SECTION**

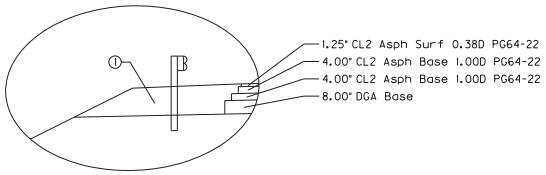
KY 577 PAVEMENT

16.00" Base
- 8.00" DGA Base
- 4.00" CL2 Asph Base 1.00D PG64-22
- 4.00" CL2 Asph Base 1.00D PG64-22

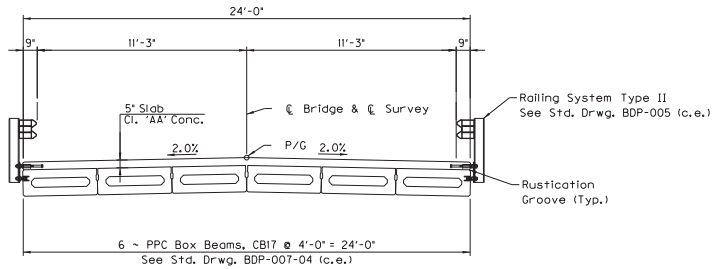
1.25" Surface
- 1.25" CL2 Asph Surf 0.38D PG64-22

SHOULDERS

Granular Embankment




**Detail "A"**




**TYPICAL DECK SECTION**

## RIGHT OF WAY SUMMARY

| PARCEL NO. | OWNER(S) | TOTAL AREA OF TRACT | | PERMANENT R/W ACQUIRED | | EASEMENTS | | PORTION REMAINING | | SEWER SYSTEM TYPE | SEWER SYSTEM AFFECTED BY PROJECT | | BUILDINGS ACQUIRED NUMBER | | | | SOURCE OF TITLE | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PERMANENT | TEMPORARY | | | | | | | | | | | |
| | | ACRES | SQ. FT. | ACRES | SQ. FT. | SQ. FT. | SQ. FT. | ACRES | SQ. FT. | | YES | NO | C | R | F | S | | |
| 1 | DAW HUNTER & LISA W. HUNTER, H.&W. | 163.928 | | | | | 3,010 | 163.928 | | 5 | | X | | | | | DB 192, PG 455 | AREA FROM PVA |

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

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

**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.

SCALE: NTS

PREPARED BY
INTEGRATED ENGINEERING

BRIDGING KENTUCKY

TYPICAL SECTIONS & ROW SUMMARY
KY 577
OVER LITTLE SEXTON CREEK

FILE NAME: ...\Design\026B00093N_TS.dgn
USER: LeeS
DATE PLOTTED: 1/17/2019 4:48:09 PM
E-SHEET NAME:
Power InRoads v8.11.9.397

| COUNTY OF | ITEM NO. | SHEET NO. |
|---|---|---|
| CLAY | 11-10004 | R3 |

## CONVENTIONAL SIGNS

SURVEY LINE
GRADE LINE
GROUND LINE
COUNTY LINE
CORPORATE LIMITS
EXIST. PROPERTY LINE
EXIST. RIGHT OF WAY & PROPERTY LINE
PROPOSED RIGHT OF WAY
RIGHT OF WAY MONUMENT
BENCH MARK
EXISTING R/W MARKER
RIGHT OF WAY MONUMENT EXISTING/PROPOSED
UTILITY TEST HOLE
EXISTING ROAD
RAILROAD
FENCE (CONTROLLED ACCESS)
FENCE (EXCEPT STONE AND HEDGE)
TREE LINE
TREES
PIPE CULVERT
CULVERT
BRIDGE
BUILDINGS
GUARDRAIL

| | EXISTING | PROPOSED |
|---|---|---|
| LIGHTING POLE | | |
| POWER POLE | | |
| JOINT POWER & TELEPHONE POLE | | |
| TELEPHONE & TELEGRAPH POLE | | |
| ANCHOR, POWER OR TELEPHONE | | |
| STUB POWER | | |
| STUB TELEPHONE | | |
| WATER MAIN | WM | 6" WM |
| GAS MAIN | GM | GM |
| TELEPHONE DUCT | T | T |
| ELECTRIC DUCT | E | E |
| DIRECT BURIAL TV CABLE | TV | TV |
| SANITARY SEWER (WITH MANHOLE) | SAN | SAN |
| STORM SEWER (WITH MANHOLE) | STORM | STORM |
| DIRECT BURIAL ELECTRIC CABLE | E | E |
| DIRECT BURIAL TELEPHONE CABLE | T | T |
| OVERHEAD WIRE | | |
| TRAFFIC LIGHTS | | |
| ELECTRIC MANHOLE | EMH | EMH |
| TELEPHONE MANHOLE | TMH | TMH |

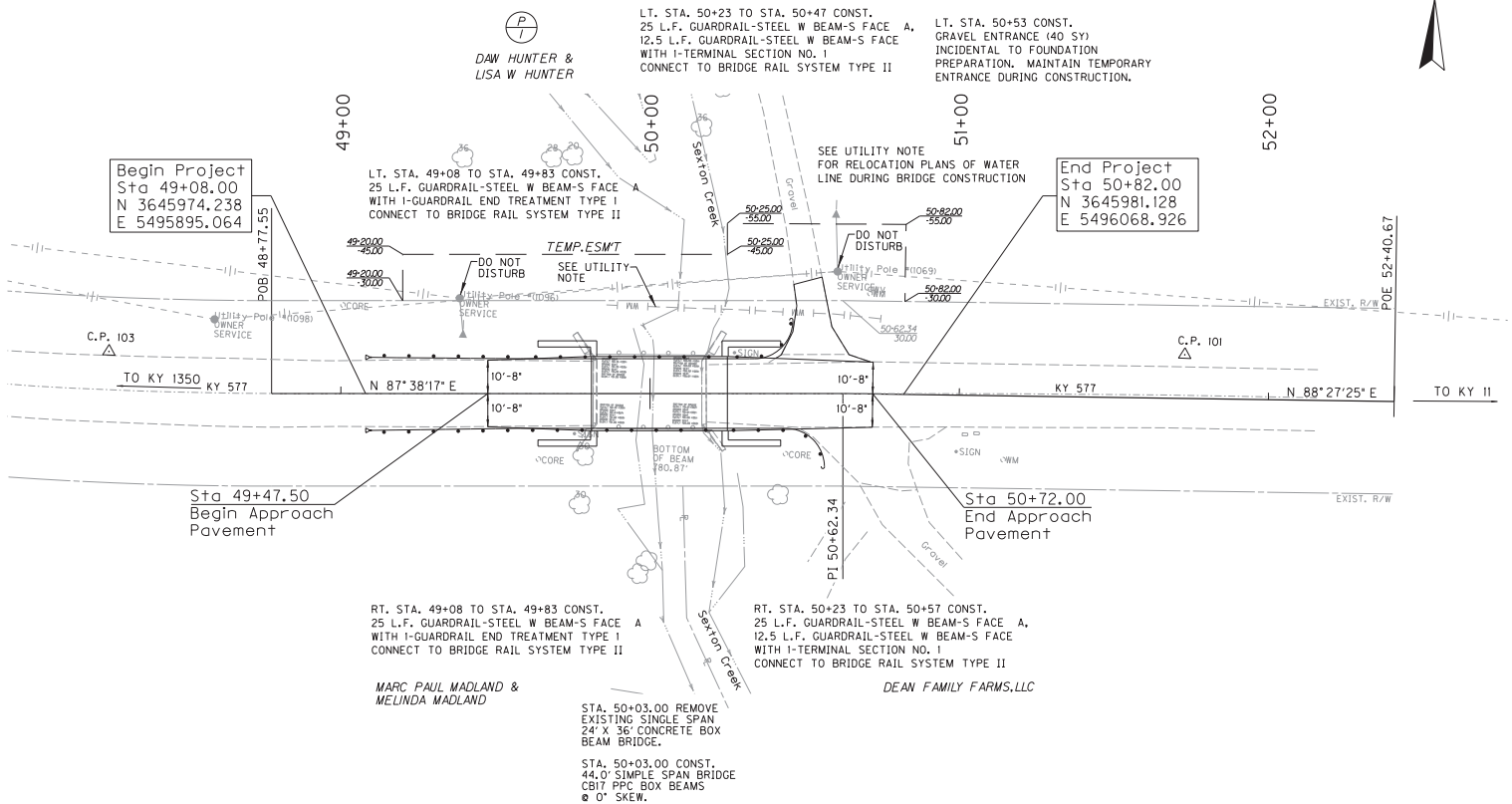
STONE FENCE
HEDGE FENCE
SWAMP OR MARSH
SPRINGS
SINKHOLE
QUARRY SITE
BLUE LINE STREAM
INTERMITTENT STREAM OR DITCH
LAKES OR PONDS
REGULATED FLOODWAY
NORTH POINT

## COORDINATE CONTROL POINTS

| POINT | DESCRIPTION | State Plane Coordinates NORTH (Y) | EAST (X) | ELEV. (Z) | STATION | OFFSET |
|---|---|---|---|---|---|---|
| CP 101 | 5/8" REBAR & CAP | 3645997.63 | 5496159.32 | 782.14 | STA. 51+72.81 | 14.06' LT. |
| CP 102 | 5/8" REBAR & CAP | 3646126.65 | 5496058.33 | 783.83 | STA. 50+75.33 | 145.75' LT. |
| CP 103 | 5/8" REBAR & CAP | 3645984.34 | 5495811.62 | 785.32 | STA. 48+24.48 | 12.37' LT. |

## CENTERLINE COORDINATE DATA

| POINT | State Plane Coordinates NORTH (Y) | EAST (X) | STATION |
|---|---|---|---|
| POB | 3645972.98 | 5495864.64 | STA. 48+77.55 |
| PI | 3645980.60 | 5496049.27 | STA. 50+62.34 |
| POE | 3645985.40 | 5496227.54 | STA. 52+40.67 |




**PROJECT COORDINATES**
Coordinates for horizontal control were obtained by redundant GPS observations using Spectra SP80 GNSS receivers on the NAD83 Kentucky State Plane Coordinate System, KY Single Zone, US Survey Feet utilizing NGS OPUS solutions dated October 25, 2018. Coordinates shown are State Plane Coordinates, US Survey Feet. No project datum factor was calculated or used for this project.

**BASIS OF ELEVATIONS**
Elevations were established by redundant GPS observations on the NAVD88 vertical datum, GEOID12B utilizing NGS OPUS solutions dated October 25, 2018 and were adjusted by closed differential level loop based on the elevation of CP 101 = 782.14'.

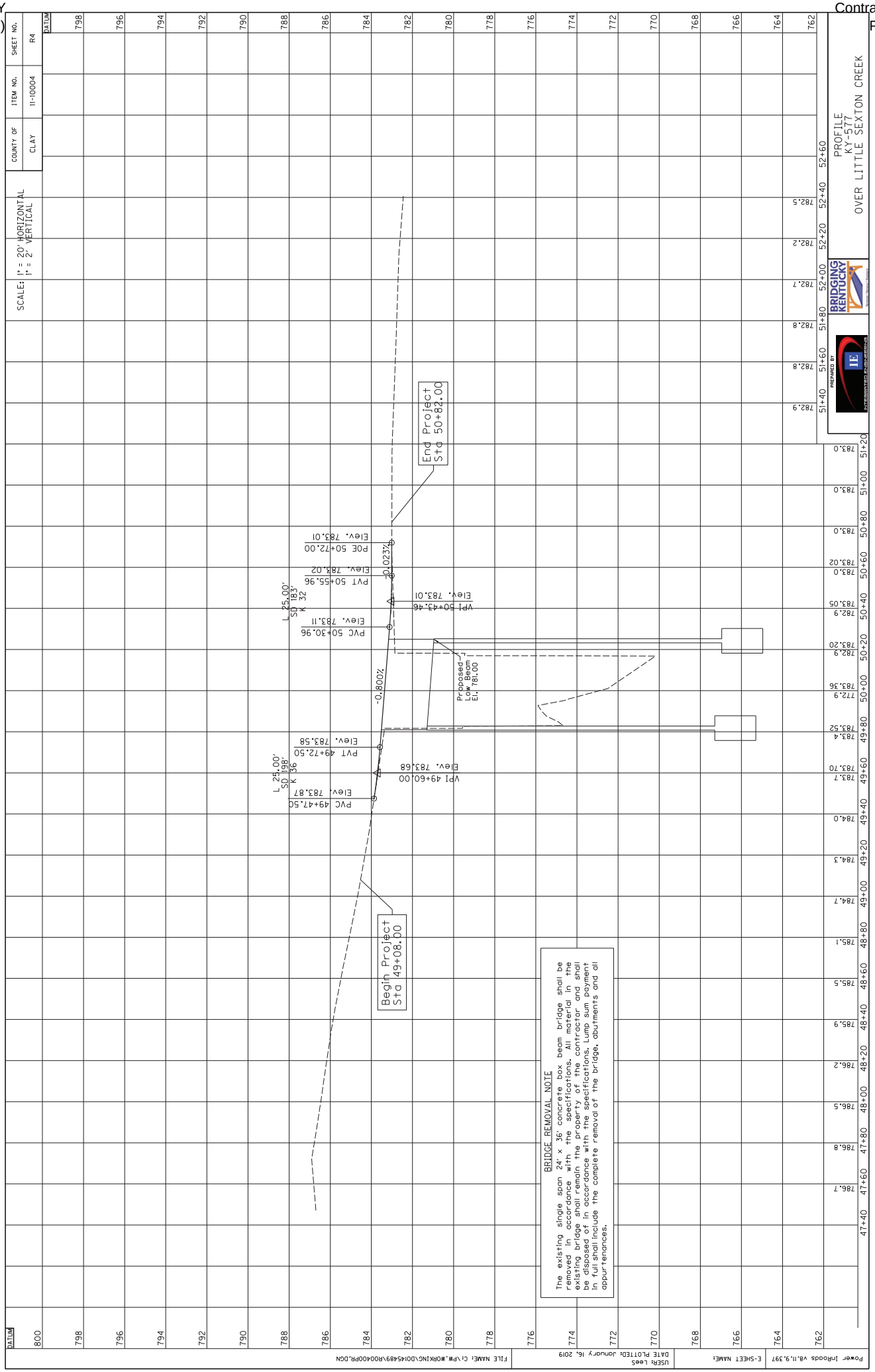
0' 20' 40' 80'
SCALE: 1"=20'

PREPARED BY INTEGRATED ENGINEERING

BRIDGING KENTUCKY

PLAN & LEGEND
KY 577
OVER LITTLE SEXTON CREEK

FILE NAME: ...\Roadway\Design\RR030OPL
USER: LeeS
DATE PLOTTED: 1/17/2019 5:15:34 PM
E-SHEET NAME:
Power InRoads v8.11.9.397


PROFILE
KY-577
OVER LITTLE SEXTON CREEK
SCALE: 1" = 20' HORIZONTAL
1" = 2' VERTICAL
COUNTY OF CLAY
ITEM NO. 11-10004
SHEET NO. R4
DATUM
PREPARED BY
BRIDGING KENTUCKY
Begin Project Sta 49+08.00
End Project Sta 50+82.00
PVC 49+47.50
Elev. 783.87
L 25.00'
SD 198'
K 36
PVT 49+72.50
Elev. 783.58
VPI 49+60.00
Elev. 783.68
-0.800%
Proposed Low Beam El. 781.00
PVC 50+30.96
Elev. 783.11
L 25.00'
SD 183'
K 32
PVT 50+55.96
Elev. 783.02
-0.023%
VPI 50+43.46
Elev. 783.01
POE 50+72.00
Elev. 783.01
BRIDGE REMOVAL NOTE
The existing single span 24' x 36' concrete box beam bridge shall be removed in accordance with the specifications. All material in the existing bridge shall remain the property of the contractor and shall be disposed of in accordance with the specifications. Lump sum payment in full shall include the complete removal of the bridge, abutments and all appurtenances.
Power Inroads v8.11.9.397
E-SHEET NAME:
USER: tebs
DATE PLOTTED: January 16, 2019
FILE NAME: C:\PW_WORKING\D0145489\R00400PR.DGN

# General Notes

Specifications: References to the specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction including any current supplemental specifications. All references to the AASHTO specifications are to the AASHTO LRFD Bridge Design Specifications, 8th edition with interims.

Design Load: This bridge is designed for KYHL-93 live load, (i.e. 1.25xAASHTO HL93 live load). This bridge is designed for a future wearing surface of 15 psf.

Design Method: All reinforced concrete members are designed to be equivalent or greater than the load and resistance factor design method as specified in the current AASHTO Specifications.

Materials Design Specifications:

| | |
|---|---|
| For Class 'A' Reinforced Concrete | f'c = 3500 psi |
| For Class 'AA' Reinforced Concrete | f'c = 4000 psi |
| For Steel Reinforcement | fy = 60000 psi |

Material Specifications: AASHTO Specifications or ASTM, current edition, as designated below shall govern the materials furnished.

| | |
|---|---|
| AASHTO M153 | Premolded Cork Filler, Type II |
| AASHTO M-31 | Deformed and Plain Billet-Steel for Concrete Reinforcement, Grade 60 |

Preformed Cork Expansion Joint Material: Preformed Cork Expansion Joint Material shall conform to subsection 807.04.02 (Type II) of the Kentucky Department of Highways Standard Specifications.

Concrete: Class 'AA' Concrete is to be used throughout the superstructure. Class 'A' concrete is to be used in the substructure. Prestressed beam concrete shall be in accordance with the plans and specifications.

Reinforcement: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Any reinforcing bars designated by suffix 'e' in the plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix 's' in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

Construction Identification: The names of the Prime Contractor and the Sub-Contractor shall be imprinted in the concrete with 1 inch letters at a location designated by the engineer. The contractor shall furnish all plans, equipment and labor necessary to do the work for which no direct payment will be made.

Beveled Edges: All exposed edges shall be beveled ¾", unless otherwise shown.

Payment for Precast Concrete Beams: The basis of payment for the Prestressed Concrete Beams shall be at the contract unit price per linear foot of beam, in accordance with the specifications.

Slope Protection: Slope Protection at abutments shall be dry cyclopean stone riprap in accordance with the plans and specifications. Geotextile Fabric, Type I shall be placed between the embankment and the slope protection in accordance with Standard Specifications 214 and 843. Payment for Geotextile Fabric, Type I, shall be considered incidental to the unit price bid for Dry Cyclopean Stone Riprap.

Completion of the Structure: The contractor is required to complete the structure in accordance with the plans and specifications. Material, labor, or construction operations not otherwise specified, are to be included in the bid item most appropriate to the work involved. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

Shop Drawings: Fabricators shall submit all required shop plans, by e-mail, to the design consultant for review. These submissions shall depict the shop plans, in .pdf format, as either 11" x 17" or 22" x 36" sheets. Designers will make review comments on these electronic submissions as needed and return them to the fabricator. Upon reconciliation of the designer's comments, files shall be returned to the designer. Each sheet will be electronically stamped by the designer and plans will be forwarded to the Construction Management Team for distribution. Only plans submitted directly to the Construction Management Team will be distributed, and only plans electronically stamped 'Distributed by Construction Management Team' are to be used for fabrication. While this process does not require the submission of paper copies, Construction Management Team reserves the right to require such copies on a case by case basis.

When any changes in the design plans are proposed by the fabricator or supplier, the shop drawings reflecting these changes shall be submitted to the consultant through the contractor.

Utilities: The contractor shall be responsible for locating any and all existing utilities prior to excavation of material or installation of guardrail or other construction activities that may involve utilities (overhead or underground).

Verifying Field Conditions: The contractor shall field verify all dimensions before ordering material. New material that is unsuitable because of variations in the existing structure shall be replaced at the contractor's expense.

Dimensions: Dimensions are for a normal temperature of 60 degrees fahrenheit. Layout dimensions are horizontal dimensions.

Superstructure Slab: The superstructure slab shall be poured continuously from end to end of slab before the concrete is allowed to set.

Mastic Tape: Mastic Tape used to seal joints is to meet the requirements of ASTM C-877 Type I, II, or III. The joint is to be covered with 12" wide mastic tape. Prior to application, the joint surface shall be clean and free of dirt, debris, or deleterious material. Primer, if required by the tape manufacturer, shall be applied for a minimum width of 9" on each side of the joint.

Mastic Tape shall be either:

EZ-Wrap Rubber by Press-seal Casket Corporation,
Seal Wrap by Mar Mac Manufacturing Co. Inc.,
Cadilloc by The UP Rubber Co. Inc.
or approved equal.

Mastic Tape shall cover the joint continuously unless otherwise shown in the plans. Mastic Tape shall be spliced by taping a minimum of 6" and in accordance with the manufacturer's recommendations with the overlap running downhill.

The cost of labor, materials, and incidental items for furnishing and installing Mastic Tape shall be considered incidental to the unit price bid for concrete class 'AA' and no separate measurement of payment shall be made.

Temporary Supports: Temporary Supports or shoring will not be permitted under the beams when pouring the concrete deck slab or when taking 'top of beam' elevations.

Armored Edge: Fabricate armored edge to match cross slope and parabolic crown at each end of bridge.

Concrete Coating: Concrete Coating is estimated at 2113 SF. It is the responsibility of the contractor to verify this estimate and bid appropriately. No payment adjustments will be made if the actual quantity is different than this estimate.

Foundation Preparation: Foundation Preparation shall be in accordance with Section 603 of the specifications.

Structural Granular Backfill: Materials for Structural Granular Backfill shall be in accordance with Section 805 of the Specifications.

Contrary to the Specifications, Structural Granular Backfill will not be measured for payment but shall be included in the Lump Sum Bid for Foundation Preparation.

Spread Footing:

Based on a review of the existing subsurface conditions, drillings logs and anticipated structural loads, it is recommended that rock bearing foundation system consisting of spread footings be used for all bridge substructure elements. A presumptive bearing resistance of 20,000 psf on unweathered bedrock is being recommended.

Excavation for footings at the structure locations should be level and free of loose, water softened material, etc. Additional rock excavation to achieve suitable bearing conditions may be required depending upon topography and bedrock weathering conditions.

Solid rock excavation will be required for installation of the substructure's spread footings. The contractor shall take care during blasting and other excavation methods to avoid over-breakage and damage to the bedrock beneath the footings.

Footing excavations in bedrock shall be cut neatly so that no forming or backfilling is necessary in the construction of the portions of the footings located in rock. Concrete shall be placed directly against the cut rock faces. Mass concrete should be placed in the excavation from the top of the footing to the bedrock surface where the footing does not extend to the bedrock surface.

Bearing elevation of footings may be adjusted at the discretion of the Engineer if competent, unweathered bedrock is found at a higher elevation than specified for the respective substructure element. The top of new spread footings should be fully embedded into unweathered bedrock. At a minimum, two-feet of embedment into competent bedrock shall be maintained.

Prior to placement of any concrete or reinforcing steel in a foundation excavation, the excavation bottom should be clean and all soft, wet, or loose materials should be removed. In no case should concrete be placed upon compressible or water-softened materials. Any clay seams or suspect weak materials at or near the bearing elevation will need to be undercut and replaced with mass concrete.

Concrete placement for footings should be placed as soon as practical after completion of the footing excavation. If the bedrock becomes softened at bearing elevation, the softened material should be undercut to unweathered material prior to placement of reinforcing steel and concrete. Seasonal groundwater fluctuations may cause groundwater infiltration into the footing excavation, and a dewatering method may be necessary.

Temporary shoring, sheeting, cofferdams, and/or dewatering methods may be required to facilitate foundation construction. It should be anticipated that groundwater will be encountered at foundation locations within the flood plain.

Any clay seams or suspect weak materials at or near the bearing elevation will need to be undercut and replaced with mass concrete.

| REVISION | DATE |
|---|---|
| | |
| | |
| | |

| | |
|---|---|
| DATE: MARCH 2019 | CHECKED BY |
| DESIGNED BY: L. SEWELL | B. DRECKMAN |
| DETAILED BY: L. SEWELL | B. DRECKMAN |

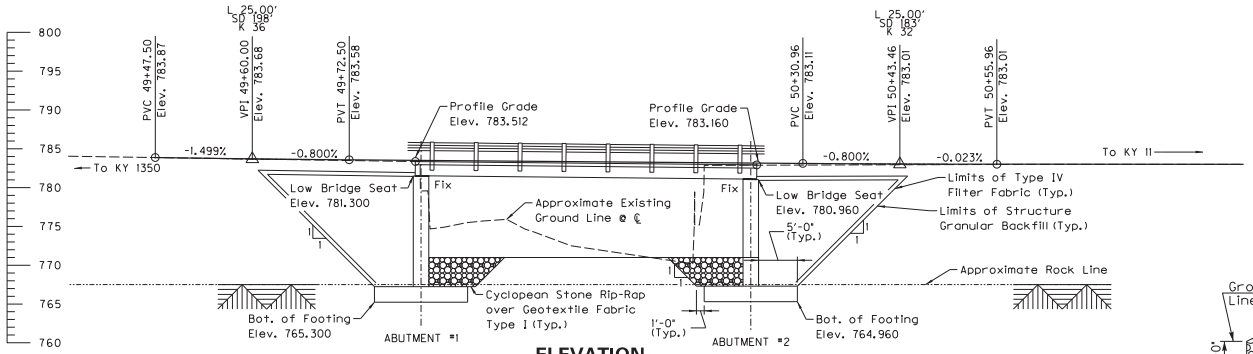
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CLAY

ROUTE: KY 577 | CROSSING: LITTLE SEXTON CREEK

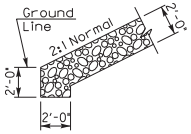
**GENERAL NOTES**

| ITEM NUMBER | PREPARED BY | SHEET NO. |
|---|---|---|
| 11-10004 | IE INTEGRATED ENGINEERING | S1 |
| | BRIDGING KENTUCKY | DRAWING NO. 27888 |

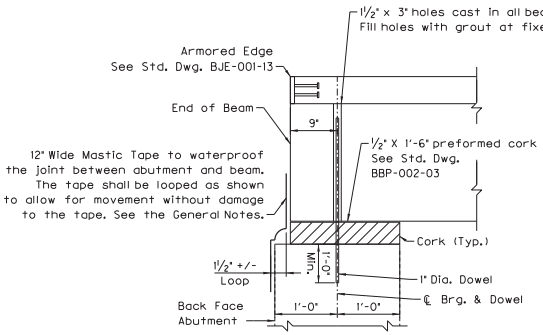



## ELEVATION

42'-6" PPC Box Beam Span, CB17, Simple Span
1.25xHL-93 (KYHL-93) Live Load
22'-6" Bridge Roadway Width ~ 0° Skew

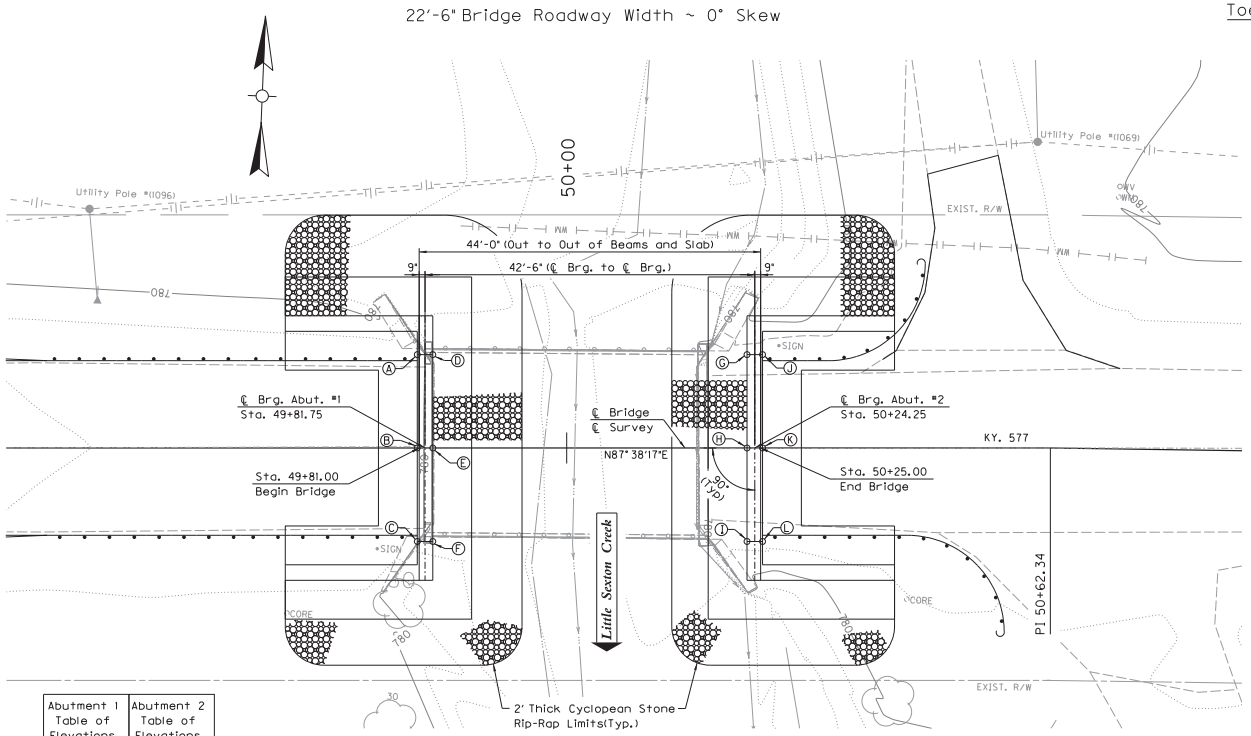



Toe of Slope
Detail




## TYPICAL SECTION AT ABUTMENT

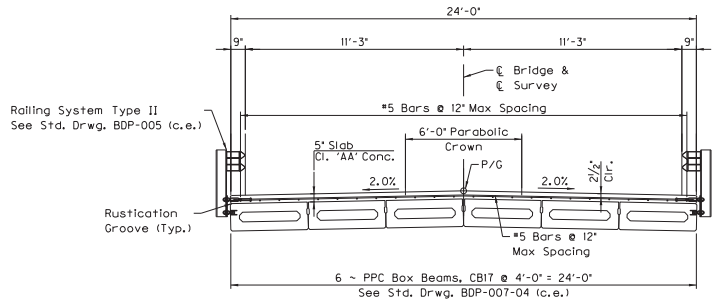
Beam End Notes:
1. Dowel bar shall be #8 epoxy coated measuring 2'-0".
2. After cutting prestress strands flush with surface, paint with approved bituminous material. Incidental to Precast Box Beams.
3. Place plastic film or other bond breaker between tape loop and expansion joint material




## PLAN

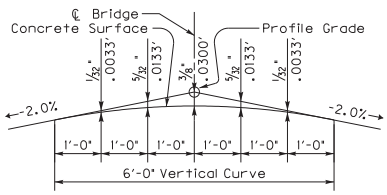
(Superstructure Not Shown)

| Abutment 1 Table of Elevations | | Abutment 2 Table of Elevations | |
|---|---|---|---|
| A | 781.316 | G | 780.976 |
| B | 781.556 | H | 781.216 |
| C | 781.316 | I | 780.976 |
| D | 781.300 | J | 780.960 |
| E | 781.540 | K | 781.200 |
| F | 781.300 | L | 780.960 |




Note: All slab bars shall be epoxy coated.

## TYPICAL SECTION




## PARABOLIC CROWN

| REVISION | DATE |
|---|---|
| | |
| | |
| | |
| | |
| DATE: MARCH 2019 | CHECKED BY |
| DESIGNED BY: L. SEWELL | B. DRECKMAN |
| DETAILED BY: L. SEWELL | B. DRECKMAN |

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CLAY

ROUTE: KY 577

CROSSING: LITTLE SEXTON CREEK

**LAYOUT**

ITEM NUMBER: 11-10004

PREPARED BY: IE INTEGRATED ENGINEERING

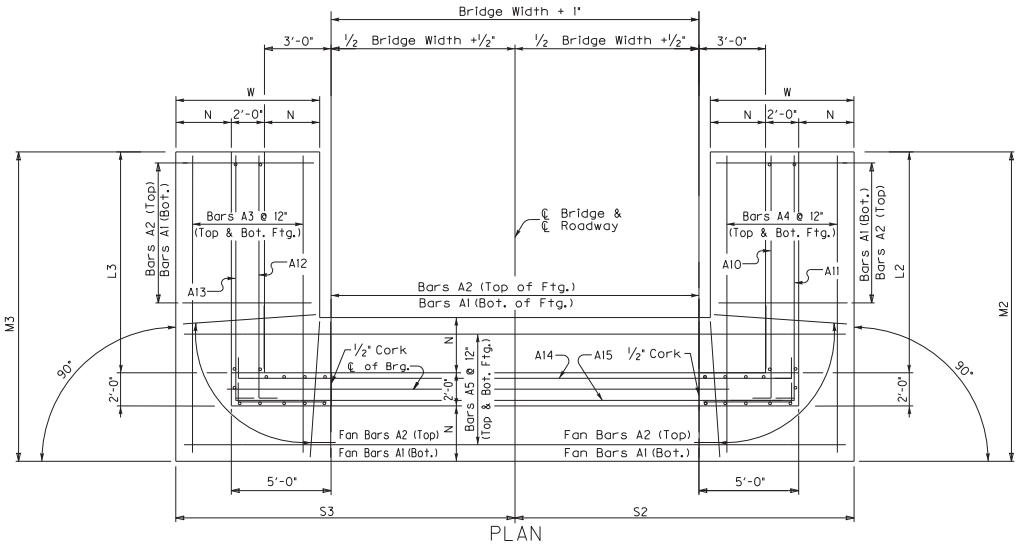
BRIDGING KENTUCKY

SHEET NO. S2

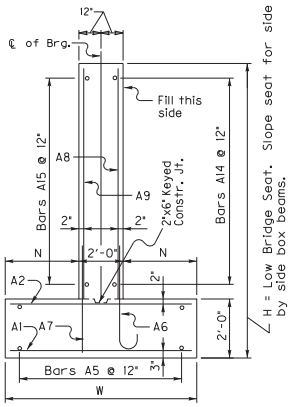
DRAWING NO. 27888

# 0° SKEW VARIABLE BRIDGE WIDTH 2:1 FILL SLOPES WINGS PARALLEL TO ROADWAY

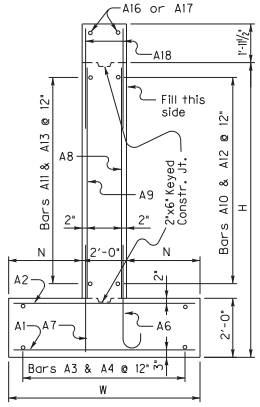
ABUTMENT SKEW CORRECTION FACTOR (SCF) = 1.000




PLAN

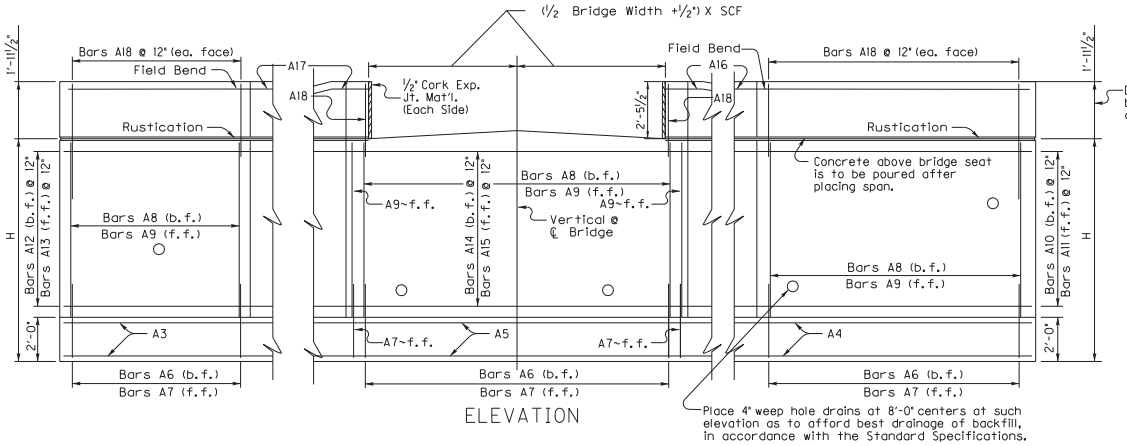



WALL SECTION

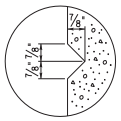



WING SECTION

Note: Trim A16 & A17 bars if necessary




ELEVATION




RUSTICATION GROOVE


PLAN OF SUPERSTRUCTURE SLAB

| REVISION | DATE |
|---|---|
| DATE: MARCH 2019 | CHECKED BY |
| DESIGNED BY: L. SEWELL | B. DRECKMAN |
| DETAILED BY: L. SEWELL | B. DRECKMAN |

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: CLAY

ROUTE: KY 577

CROSSING: LITTLE SEXTON CREEK

**ABUTMENT DETAILS (1 OF 2)**

| ITEM NUMBER | PREPARED BY | SHEET NO. | DRAWING NO. |
|---|---|---|---|
| 11-10004 | IE INTEGRATED ENGINEERING | S3 | 27888 |

BRIDGING KENTUCKY

# 0° SKEW VARIABLE BRIDGE WIDTH 2:1 FILL SLOPES WINGS PARALLEL TO ROADWAY

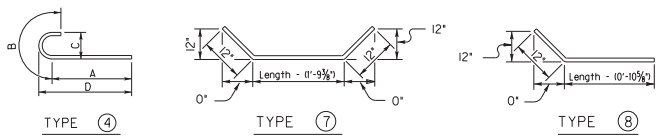
## Bill of Reinforcement

| MARK | A1 | | | | | A2 | | | | | A3 | A4 | A5 | | | A6 | | | | | | | | | | | A7 | | | | A8 | | | | A9 | | | | A10 | A11 | A12 | A13 | A14 | | | | A15 | | | | A16 | A17 | A18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TYPE | Str. | | | | | Str. | | | | | Str. | Str. | Str. | | | 4 | | | | | | | | | | | Str. | | | | Str. | | | | Str. | | | | 8 | 8 | 8 | 8 | 7 | | | | 7 | | | | Str. | Str. | Str. | |
| SIZE | | | | | | | | | | | #5 | #5 | #5 | | | | | | | | | | | | | | | | | | | | | | | | #5 | #5 | #5 | #5 | #5 | | | | #5 | | | | #5 | #5 | #5 | |
| H | No. | Size | Length ft. | Length in. | Spacing | No. | Size | Length ft. | Length in. | Spacing | No. Length ft. | No. Length ft. | No. Length ft. | No. Length in. | +Lb = Length ft. | No. | Size | Length ft. | Length in. | Spacing | A ft. | A in. | B ft. | B in. | C ft. | C in. | D ft. | D in. | No. | Size | Length ft. | Length in. | Spacing | No. | Size | Length ft. | Length in. | Spacing | No. Length ft. | No. Length ft. | No. Length ft. | No. Length ft. | No. Length ft. | No. | Length ft. | Length in. | +Lb = | No. | Length ft. | Length in. | No. Length ft. | No. Length ft. | No. Length ft. | |
| 16 | 68+Nb= | 10 | 11 | 8 | 12 | 68+Nb= | 7 | 11 | 8 | 12 | 24 | 24 | 24 | 23 | 8 | 24 | 23 | 8 | 24 | 19 | 9 | +Lb= | 43 | 9 | 41+Nb= | 9 | 9 | 11 | 12 | 8 | 1/8 | 1 | 10 | 0 | 11 3/4 | 8 | 6 | 49+Nb= | 5 | 4 | 11 | 12 | 41+Nb= | 6 | 12 | 10 | 12 | 49+Nb= | 12 | 10 | 12 | 14 | 19 | 6 | 14 | 19 | 8 | 14 | 19 | 6 | 14 | 19 | 8 | 14 | 11 | 5 | +Lb= | 35 | 5 | 14 | 11 | 5 | +Lb= | 35 | 5 | 2 | 23 | 11 | 2 | 23 | 11 | 94 | 5 | 9 |

## Table of Dimensions

| H | W Length ft. | W Length in. | N Length ft. | N Length in. | M2 Length ft. | M2 Length in. | M3 Length ft. | M3 Length in. | T2 Length ft. | T2 Length in. | T3 Length ft. | T3 Length in. | L2 Length ft. | L3 Length ft. | S2 Length ft. | S2 Length in. | S2 + Lb/2 = | S3 Length ft. | S3 Length in. | S3 + Lb/2 = | S3 Length ft. | S3 Length in. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 12 | 0 | 5 | 0 | 24 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 17 | 17 | 10 | 1/2 | +0.5Lb= | 22 | 1/2 | +0.5Lb= | 22 | 1/2 |

## Reinforcement Details




ABUTMENT SKEW CORRECTION FACTOR (SCF) = 1.0

NUMBER OF BARS TO ADD (Nb) = Bridge Width (feet) x SCF (round up to nearest whole number)

LENGTH OF ABUTMENT TO ADD (Lb) = Bridge Width (feet) x SCF (convert decimal to architectural)


**PLAN OF SUPERSTRUCTURE SLAB**

## GENERAL NOTES

SPECIFICATIONS: Construct abutments according to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction. Abutments are designed for side by side box beams as detailed in Standard Drawings BDP-001 through BDP-012, current edition. Dimensions may be adjusted to allow for any out to out bridge width. Abutments are also adequate for Std. Dwg. slabs or steel beam superstructures

FOUNDATION PRESSURE: Construct abutment footings on solid rock bearing material that can support a pressure of 8000 psf service or 10,800 psf strength factored, as recommended by a geotechnical engineer.

WING LENGTHS: Calculated based on existing field conditions.

FOOTING ELEVATION: Construct bottom of footing below the anticipated scour elevation. Embed the footings 2'-0" into rock and pour concrete directly against cut rock faces.

NOTE: Distances to bars shown are clear dimensions unless otherwise noted.

MATERIAL SPECIFICATIONS:
Concrete, Class "A" = 3500 psi
Steel Reinforcement = Grade 60

| REVISION | DATE |
|---|---|
| | |
| | |
| | |

| | |
|---|---|
| DATE: MARCH 2019 | CHECKED BY |
| DESIGNED BY: L. SEWELL | B. DRECKMAN |
| DETAILED BY: L. SEWELL | B. DRECKMAN |

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

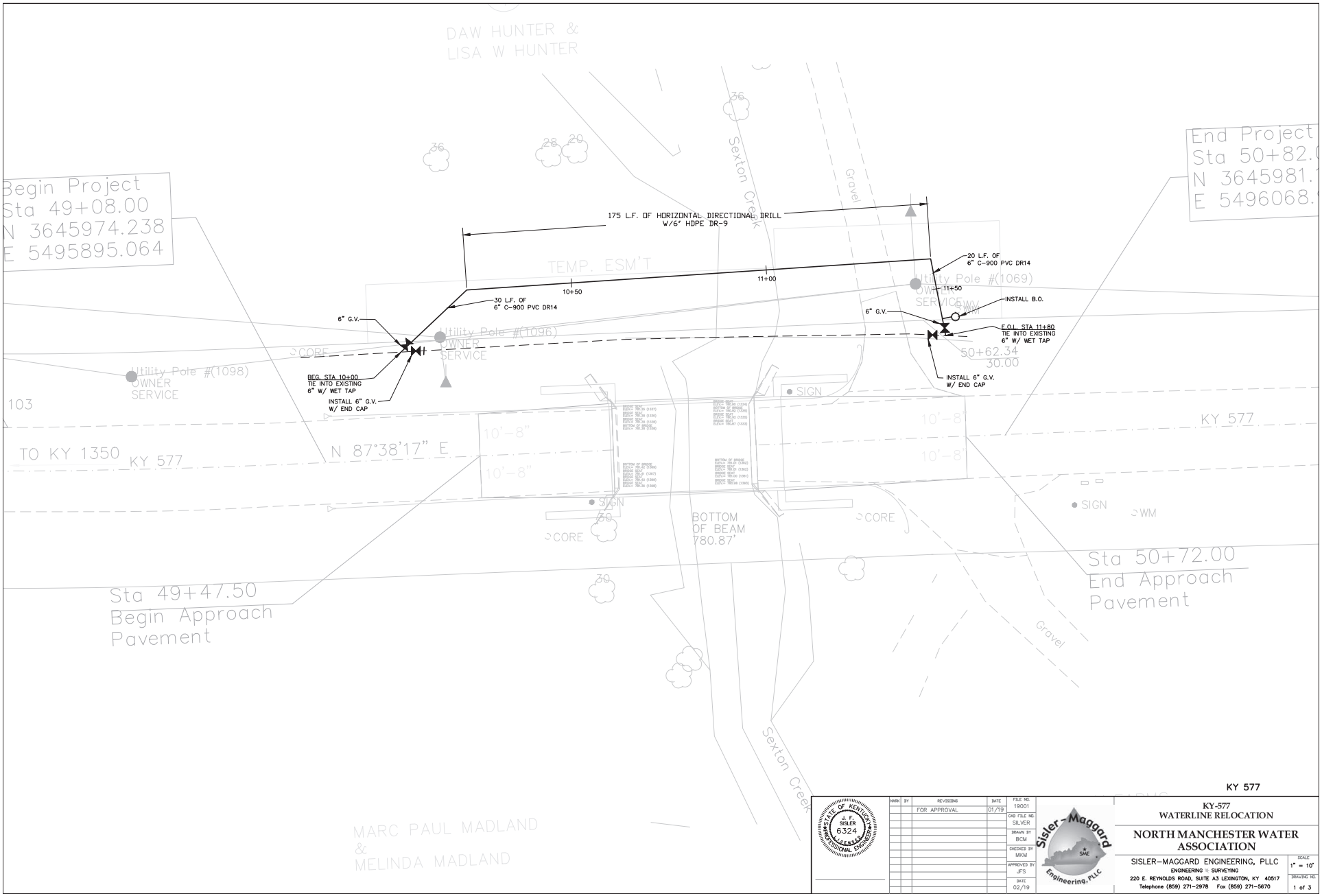
COUNTY: CLAY

ROUTE: KY 577 | CROSSING: LITTLE SEXTON CREEK

**ABUTMENT DETAILS (2 OF 2)**

| ITEM NUMBER | PREPARED BY | SHEET NO. | DRAWING NO. |
|---|---|---|---|
| 11-10004 | INTEGRATED ENGINEERING | S4 | 27888 |

BRIDGING KENTUCKY




| MARK | BY | REVISIONS | DATE |
|---|---|---|---|
| | | FOR APPROVAL | 01/19 |

FILE NO. 19001
CAD FILE NO. SILVER
DRAWN BY BCM
CHECKED BY MKM
APPROVED BY JFS
DATE 02/19

J. F. SISLER 6324 LICENSED PROFESSIONAL ENGINEER STATE OF KENTUCKY

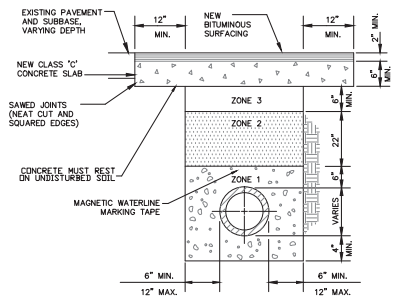
Sisler-Maggard Engineering, PLLC

**KY-577**
**WATERLINE RELOCATION**

**NORTH MANCHESTER WATER ASSOCIATION**

SISLER–MAGGARD ENGINEERING, PLLC
ENGINEERING ⚙ SURVEYING
220 E. REYNOLDS ROAD, SUITE A3 LEXINGTON, KY 40517
Telephone (859) 271-2978 Fax (859) 271-5670

SCALE 1" = 10'
DRAWING NO. 1 of 3

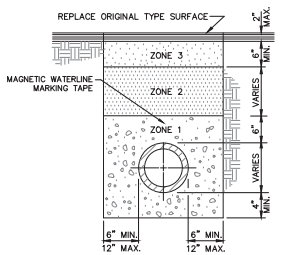



**BITUMINOUS SURFACING OVER 2" PAVEMENT**

ZONE 3 – DENSE GRADE AGGREGATE
ZONE 2 – NATURAL SAND
ZONE 1 – NO. 9 STONE (6" ABOVE TOP OF PIPE)
COMPACTION SHALL BE 98% OF STANDARD PROCTOR
PIPE MUST BE LAID A MINIMUM OF 42" DEPTH

## PAVEMENT REPLACEMENT FOR TRENCHES UNDER STREETS OR ROADS, HEAVY DUTY (H.D.)

NOT TO SCALE




NOTE:
REPLACE BITUMINOUS PAVEMENT WITH SAME TYPE AND DEPTH AS EXISTING PAVEMENT.

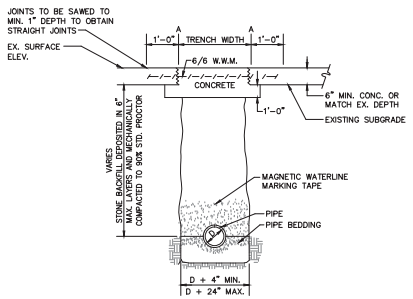
PIPE MUST BE LAID A MINIMUM OF 30" DEPTH

ZONE 3 – DENSE GRADE AGGREGATE
ZONE 2 – NATURAL SAND
ZONE 1 – NO. 9 STONE (6" ABOVE TOP OF PIPE)

COMPACTION SHALL BE 98% OF STANDARD PROCTOR

## PAVEMENT REPLACEMENT FOR TRENCHES UNDER DRIVEWAY PAVEMENT LIGHT DUTY (L.D.)

NOT TO SCALE

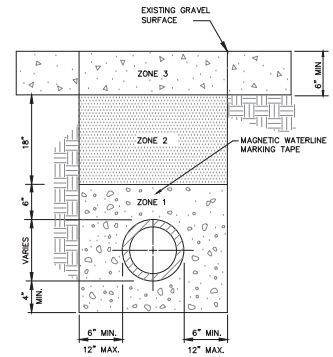



NOTES

1. SEE PIPE BEDDING STANDARDS FOR BEDDING DETAILS.
2. FROM POINTS 'A' (CONC. PAVEMENT) THE DISTANCE TO NEAREST POINT OR BREAK IN PAVEMENT MUST BE 6 FEET OR MORE. IF LESS THAN 6 FEET, REMOVE PAVEMENT TO JOINT OR BREAK AND REPLACE ENTIRE SLAB.
3. MAXIMUM PAY LIMITS SHALL BE 'D' + 48". PAY LIMITS IN SQUARE YARDS.

## CONCRETE PAVEMENT REPLACEMENT STATE AND LOCAL ROADS AND DRIVEWAYS

NOT TO SCALE



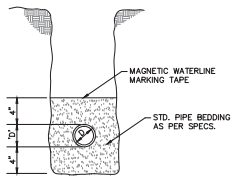

ZONE 3 – 6" MIN. CRUSHED STONE
ZONE 2 – CONSOLIDATED SOIL AND/OR NATURAL SAND
ZONE 1 – NO. 9 STONE (6" ABOVE TOP OF PIPE)

PIPE MUST BE LAID A MINIMUM OF 30" DEPTH

COMPACTION: 95% STANDARD PROCTOR

## CRUSHED STONE SURFACE REPLACEMENT

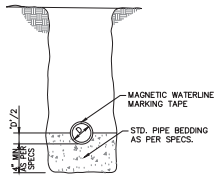
NOT TO SCALE




## PIPE BEDDING

NOT TO SCALE

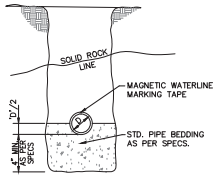
PIPE MUST BE LAID A MINIMUM OF 30" DEPTH




## STANDARD PIPE BEDDING

NOT TO SCALE

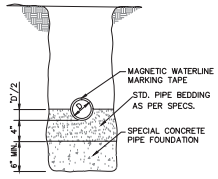
PIPE MUST BE LAID A MINIMUM OF 30" DEPTH




## STANDARD PIPE BEDDING IN SOLID ROCK

NOT TO SCALE

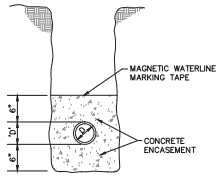
PIPE MUST BE LAID A MINIMUM OF 30" DEPTH




## SPECIAL PIPE FOUNDATION

NOT TO SCALE

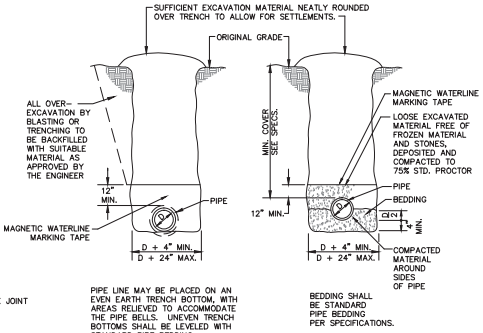
PIPE MUST BE LAID A MINIMUM OF 30" DEPTH




## STANDARD CONCRETE ENCASEMENT

NOT TO SCALE

PIPE MUST BE LAID A MINIMUM OF 30" DEPTH




PIPE LINE MAY BE PLACED ON AN EVEN EARTH TRENCH BOTTOM, WITH AREAS RELIEVED TO ACCOMMODATE THE PIPE BELLS. UNEVEN TRENCH BOTTOMS SHALL BE LEVELED WITH STANDARD PIPE BEDDING.

BEDDING SHALL BE STANDARD PIPE BEDDING PER SPECIFICATIONS.

NOTE:
ALSO REFER TO PAVEMENT REPLACEMENT STANDARDS FOR ADDITIONAL BACKFILL AND COMPACTION DETAILS.

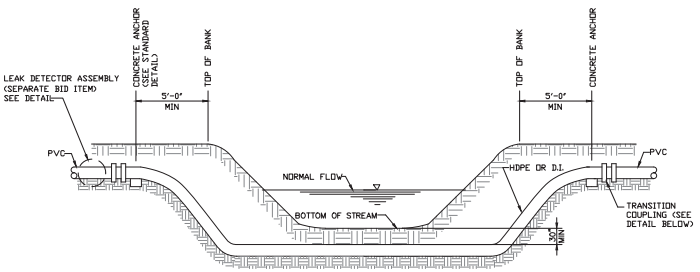
PIPE MUST BE LAID A MINIMUM OF 30" DEPTH

**PIPE BEDDING "PARING METHOD"**
(6" AND SMALLER PIPE)

**PIPE BEDDING "UNDERCUTTING METHOD"**
(8" AND LARGER PIPE)

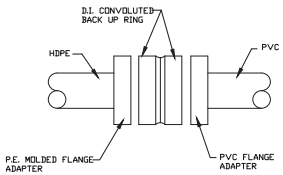
## TYPICAL PIPE BEDDING AND TRENCH BACKFILL IN OPEN AREAS

NOT TO SCALE



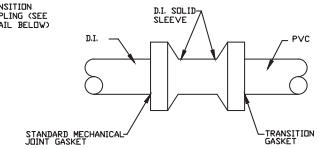

## TYPICAL LARGE STREAM CROSSING W/HDPE OR D.I. (SEE PLANS FOR LOCATIONS)

NOT TO SCALE



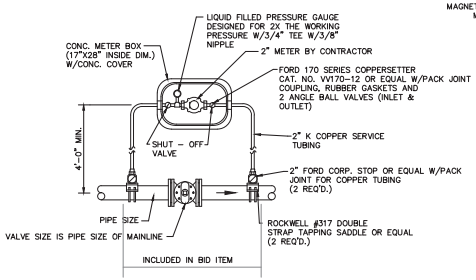

## COUPLING DETAIL FOR HDPE

NOT TO SCALE




## COUPLING DETAIL FOR D.I.

NOT TO SCALE




## GATE VALVE WITH METER ASSEMBLY LEAK DETECTION BY-PASS INSTALLATION

NOT TO SCALE

DETAILS

| MARK | BY | REVISIONS | DATE |
|---|---|---|---|
| | | FOR APPROVAL | 01/19 |

PROJECT NO. 19001
CAD FILE NO. PLANS
DRAWN BY BCM
CHECKED BY MKM
APPROVED BY JFS
DATE 01/19

STATE OF KENTUCKY
J. F. SISLER
6324
LICENSED PROFESSIONAL ENGINEER

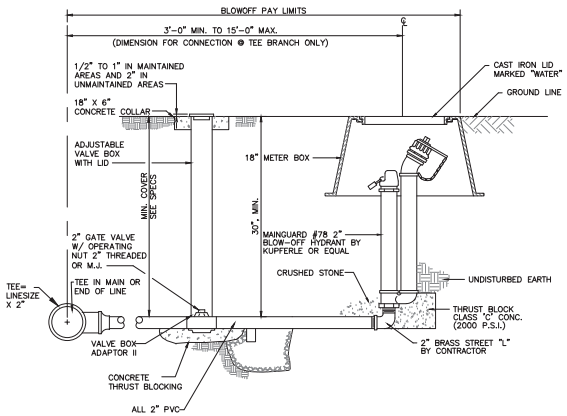
Sisler-Maggard Engineering, PLLC

**KY 577**
**WATERLINE RELOCATION**

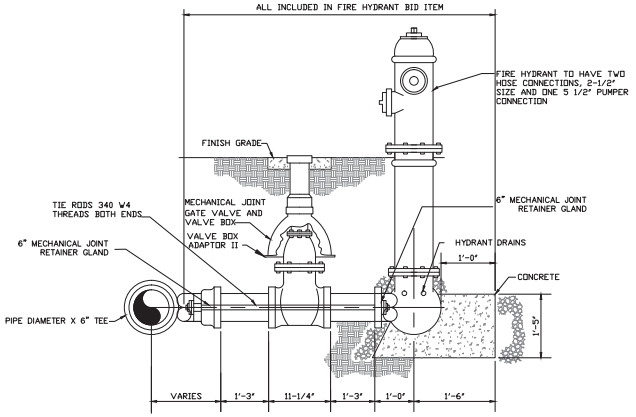
**NORTH MANCHESTER WATER ASSOCIATION**

SISLER-MAGGARD ENGINEERING, PLLC
ENGINEERING ▪ SURVEYING
220 E. REYNOLDS ROAD, SUITE A3 LEXINGTON, KY 40517
Telephone (859) 271-2978 Fax (859) 271-5670

SCALE AS NOTED
DRAWING NO. 2 of 3

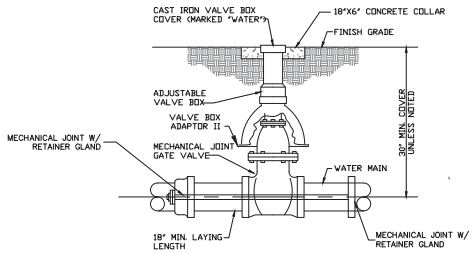



BLOWOFF DETAIL
NOT TO SCALE



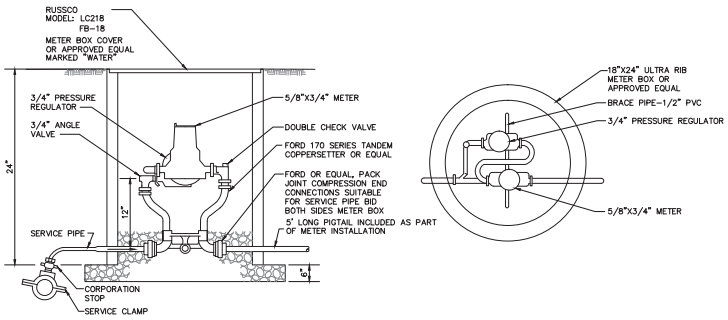

NOTE:
WHERE THE WATER MAIN IS LOCATED IN A STREET OR ROAD, THE VALVE AND BOX ARE TO BE LOCATED OFF THE ROAD AS DIRECTED BY THE ENGINEER.

FLUSH HYDRANT DETAIL
NOT TO SCALE



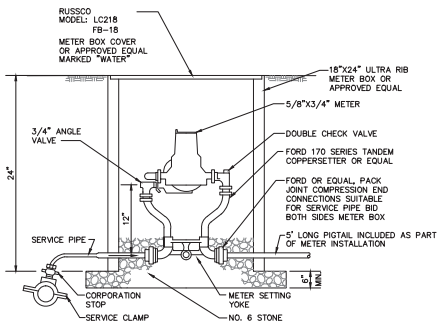

NOTE:
WHERE THE WATER MAIN IS LOCATED IN A STREET OR ROAD, THE VALVE AND BOX ARE TO BE LOCATED OFF THE ROAD AS DIRECTED BY THE ENGINEER.

TYPICAL VALVE SETTING DETAIL
NOT TO SCALE



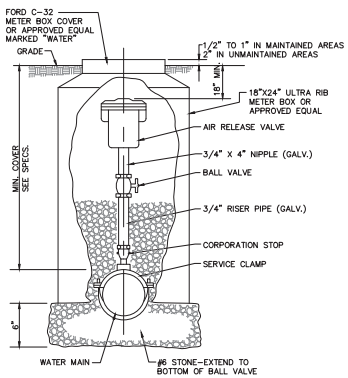

NOTE:
1. #6 STONE TO EXTEND ABOVE METER SETTING YOKE.
2. PRESSURE REGULATOR TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
3. METER TO BE FURNISHED TO OWNER AND INSTALLED BY OWNER.

STANDARD METER SETTING DETAIL WITH PRESSURE REGULATOR
NOT TO SCALE



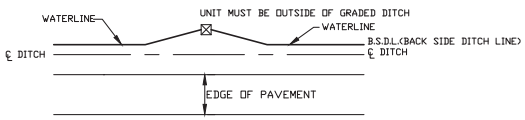

NOTE:
1. METER SETTING YOKE SHALL BE BRACED WITH 1/2" PVC PIPE.
2. STONE TO EXTEND ABOVE METER SETTING YOKE
3. METER TO BE FURNISHED TO OWNER AND INSTALLED BY OWNER.

STANDARD METER SETTING DETAIL
NOT TO SCALE




NOTE:
WHERE THE WATER MAIN IS LOCATED IN A STREET OR ROAD, THE AIR RELEASE VALVE AND BOX ARE TO BE LOCATED OFF THE ROAD AS DIRECTED BY THE ENGINEER AND CONNECTED TO THE MAIN BY THE 3/4" SERVICE PIPE. THE SERVICE PIPE WILL BE A SEPARATE PAY ITEM.

AIR RELEASE VALVE-WATER
NOT TO SCALE




LOCATION DETAIL

VALVES, BLOWOFFS, PRV'S, ARV'S, ETC.
(ON STATE AND COUNTY ROADWAYS)

NOT TO SCALE

DETAILS

STATE OF KENTUCKY
J. F. SISLER
6324
LICENSED PROFESSIONAL ENGINEER

| MARK | BY | REVISIONS | DATE |
|---|---|---|---|
| | | FOR APPROVAL | 01/19 |

FILE NO. 19001
CAD FILE NO. DETAILS
DRAWN BY BCM
CHECKED BY MKM
APPROVED BY JFS
DATE 01/19

Sisler-Maggard Engineering, PLLC

KY 577
WATERLINE RELOCATION

NORTH MANCHESTER
WATER ASSOCIATION

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ENGINEERING ▪ SURVEYING
220 E. REYNOLDS ROAD, SUITE A3 LEXINGTON, KY 40517
Telephone (859) 271-2978 Fax (859) 271-5670

SCALE AS NOTED
DRAWING NO. 3 of 3

# SPECIAL NOTE FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS

## I. TRAFFIC CONTROL GENERAL

Except as provided herein, traffic shall be maintained in accordance with the 2012 standard specifications, section 112. The contractor will be responsible for developing and implementing the maintenance of traffic details with guidance through standard drawings and the MUTCD current editions. The developed traffic control plan must be approved by the Engineer prior to implementation. The contractor is expected to provide at a minimum the items listed in this note, however this note does not relieve the contractor of other items that may be necessary to comply with current standards. 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".

Contrary to section 106.01, traffic control devices used on this project may be new or used in new condition, at the beginning of the work and maintained in like new condition until completion of the work.

The contractor must notify the engineer and public information officer at least 14 calendar days prior to the beginning work. Please see the Special Note for Liquidated Damages for additional information.

## II. TRAFFIC COORDINATOR

Furnish a traffic coordinator as per section 112. The traffic coordinator shall inspect the project maintenance of traffic, at least three times daily, or as directed by the engineer, during the contractor's operations and at any time a bi-directional lane closure or road closure is in place. The personnel shall have access on the project to a radio or telephone to be used in case of emergencies or accidents. The traffic coordinator shall report all incidents throughout the work zone to the engineer on the project. The contractor shall furnish the name and telephone number where the traffic coordinator can be contacted at all times.

## III. SIGNS

The contractor is responsible for all signage during construction. The contractor shall adhere to the standard drawings and manual on uniform traffic control devices (MUTCD) for guidance. If, at any time, the engineer requests a change in the maintenance of traffic signage, the contractor shall implement the change within 8 hours. Failure to implement these changes within the required eight hours will result in liquidated damages of $5,000 per day.

The contractor shall provide all detour signing needed for the bridge closure, if allowed in the contract documents. All signing required will be incidental to the lump sum bid item "Maintain and Control Traffic".

The department will not measure installation, maintenance, or removal for payment of any detour signage or standard construction signage, and will consider these incidental to "Maintain and Control Traffic"

Closure signs, detour signs, and bi-directional lane closure signs should be placed no sooner than two weeks prior to the closing of the bridge (when applicable) or placing lane closures. Wayfinding detour signs should be placed a maximum of 2 miles apart unless specified by the engineer. Signs shall be covered or removed within 24 hours of opening the bridge to traffic.

Road closed signs (when applicable) should be double signed and placed a minimum of 1500', 1000', and 500' in advance of the closure, in addition to signage required by the MUTCD and standard drawings.

## IV. TEMPORARY PAVEMENT STRIPING

For projects where road closures are allowed in the contract documents, it is not anticipated that temporary pavement striping will be needed since the bridge will be closed. However, if the contractor's means and methods allows for need for temporary striping, conflicting pavement marking will be covered with 6" black removable tape. However, for bi-directional lane closures or if the plans call for a diversion, temporary striping will be required per the plans and MUTCD. Contrary to the standard specifications, no direct payment will be made for any temporary striping, pavement striping removal, or any other temporary striping item. If temporary striping is used, the contractor shall replace any temporary striping that becomes damaged or fails to adhere to the pavement before dark on the day of the notification. Liquidated damages shall be assessed to the contractor at a rate of $500 per day for failing to replace temporary striping within this time limit.

## V. PROJECT PHASING & CONSTRUCTION PROCEDURES

Project phasing shall be as directed by the plans, special notes, and the approved Traffic Control Plan prepared by the contractor. Maintain traffic over the bridge as long as possible. Once work on the structure begins that impacts traffic, ensure work progresses to minimize the effected time to the public. All materials that must be made specific for the project should be ordered and made prior to closure of the bridge or implementation of bi-directional lane closures so that delivery does not delay progress of the work, unless approved by the Engineer. If the bridge is reopened prior to safety devices being in place, an approved protective barrier wall shall be placed in accordance to the standard drawings. Contrary to standard specifications, no direct payment would be made for the barrier wall and will be considered incidental to "Maintain and Control Traffic".

For projects which require an on-site diversion to be constructed to maintain traffic, the traffic control plan and project schedule prepared by the contractor shall include provisions such that traffic is not switched to the diversion until all materials that must be made specific for the project are ordered and made so that use of the diversion is minimized, unless approved by the Engineer.

## VI. PAVEMENT DROP-OFF

Less than two inches - no protection required. Warning signs should be placed in advance and throughout the drop-off area.
Two to four inches - plastic drums, vertical panels or barricades every 100 feet on tangent sections for speeds of 50 mph or greater. Cones may be used in place of plastic drums, panels and barricades during daylight hours. For tangent sections with speeds less than 50 mph and curves devices should be placed every 50 feet. Spacing of devices on tapered sections should be in accordance with the manual on uniform traffic control devices, current edition.

Greater than four inches - positive separation or wedge with 3:1 or flatter slope needed. If there is five feet or more distance between the edge of the pavement and the drop-off, then drums, panel, or barricades may be used. If the drop-off is greater than 12 inches, positive separation is strongly encouraged. If concrete barriers are used, special reflective devices or steady burn lights should be used for overnight installations.

For temporary conditions, drop-offs greater than four inches may be protected with plastic drums, vertical panels or barricades for short distances during daylight hours while work is being done in the drop-off area.

## VII. VARIABLE MESSAGE SIGNS AND TEMPORARY TRAFFIC SIGNALS

At the direction of the Engineer, the contractor is expected to provide up to four (4) message boards for use at locations determined by the Engineer. These message boards are expected to be in place one week prior to the closure of the roadway and remain in place for the duration of the closure. The message boards will be paid for as per the standard specifications.

For projects that involve the use of lane closures, all lane closures shall be bi-directional. The contractor shall provide temporary traffic signals and all labor, materials, and incidentals needed to maintain bi-directional traffic for the project. For short term bi-directional lane closures, the use of flaggers in lieu of temporary traffic signals may be acceptable if approved by the Engineer.

## VIII. BARRICADES

For projects which allow full closure of the bridge, , ensure a minimum of (4) type III barricades are used at each end of the bridge during closures for a total of (8) type III barricades. Contrary to the standard specifications, no direct payment will be made for barricades but they will be included in the lump sum price for “Maintain and Control Traffic”.

## VIII. DETOUR AND ON SITE DIVERSIONS

For projects which allow a full closure of the bridge, or if necessary to detour trucks, the traffic control plan proposed by the contractor shall include a signed detour route for the road closure. The traffic control plan along with the proposed detour plan will be delivered to the engineer at the pre-construction meeting. The proposed detour route shall meet the following requirements:

1) Detour routes must remain at minimum on the same classification of roadway (i.e. AA, AAA, state, county, etc.) Unless written approval is obtained through the owner of the facility.
2) The contractor must coordinate with other projects along the detour route in order to avoid ongoing construction projects along those routes.
3) It may be determined that two detour routes would be needed if the first selected route cannot accommodate truck traffic. If this occurs, the contractor is expected to sign both detours per the standard drawings and MUTCD. Additional clarification signage between the detours may be needed at points where they diverge.
4) For projects that involve the use of bi-directional lane closures and the temporary lane width per the plans or as proposed by the contractor is less than 10 feet, the contractor shall be required to provide a signed detour for oversized vehicles.

The traffic control plan must be submitted and approved to allow for coordination of the public information officer with the closure notification. The public must be notified of the proposed detour route when they are notified of the closure, 2 weeks before closure. All time and expenses necessary for the development of the detour plan(s) will be incidental to the lump sum bid item “Maintain and Control Traffic”.

For projects with an on-site diversion included in the construction, the preparation of traffic control plans for a detour and implementation of a detour will not be required, unless specified in the plans.

# SPECIAL NOTE FOR PLACING BRIDGE OVERLAY APPROACH PAVEMENT

## I. DESCRIPTION

Perform all work in accordance with the Kentucky Transportation Cabinet, Department of Highway's 2012 Standard Specifications for Road and Bridge Construction and applicable Supplemental Specifications, the Standard Drawings, this Note, and the Contract Documents. Section references are to the Standard Specifications.

This work consists of the following:

1. Furnish all labor, materials, tools, and equipment.
2. Removal of existing abutment backfill, if needed.
3. Structural Granular Backfill, as needed.
4. Mill the existing pavement.
5. Place new DGA, asphalt base, and asphalt surface
6. Repair the roadway shoulders, if needed.
7. Provide Pavement Markings if needed.
8. Any other work specified as part of this contract.

## II. MATERIALS

**A. Structural Granular Backfill.** See Section 8.05.11

**B. DGA**. See Section 302.

**C. Tack Coat.** This material shall be in accordance with the Standard Specifications.

**D. CL2 ASPH BASE 1.0D PG 64-22.** See Standard Specifications

**E. ASPHALT LEVEL AND WEDGE.** See Standard Specifications

**F. CL2 ASPH SURF 0.38D PG 64-22.** This material shall be in accordance with the Standard Specifications.

**G. GRANULAR EMBANKMENT.** This material shall be in accordance with the Standard Specifications.

**H. Pavement Striping.** See Section 713.

## III. CONSTRUCTION – DECK, SUPERSTRUCTURE, AND FULL BRIDGE REPLACEMENTS

**A. Foundation Preparation**. For projects involving the removal and replacement of the asphalt and backfill behind the existing abutments and new abutments or end bents, the required excavation, Type IV geotextile fabric, 4" perforated pipe, and new Structural Granular Backfill as shown in Figure 1 as well as any excavation and grading needed to shape the bridge approaches to match the existing roadway template, will be paid for by the bid item for Foundation Preparation. See Special Provision 69 and the Standard Drawings regarding additional construction details as required.

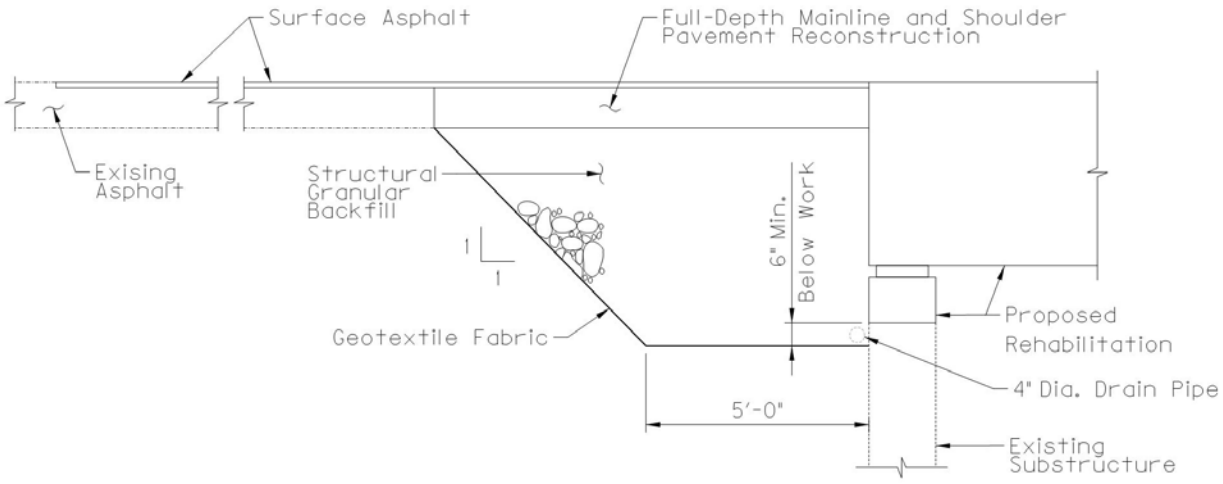


Figure 1: Detail showing proposed work for deck and superstructure replacements

**B. Remove Existing Asphalt Surface.** Remove the existing pavement material beyond the limits of full depth asphalt replacement to provide for a minimum of 1¼" new pavement surface from the bridge end extending approximately 25 feet, or as shown in the plans, into the approach pavement and across the width of the approach pavement. The Engineer shall determine the actual length and width of the milling depending on site conditions at each bridge approach. Mill the existing surface so that the new asphalt surface will match the elevation of the end of the full depth asphalt replacement and the bridge end. The Engineer shall approve the Contractor's plan for restoring the approach grade prior to the removal of the existing surface. Dispose of all removed material entirely away from the job site or as directed by the Engineer.

**C. Produce and Place New Asphalt Base.** Replace any full depth mainline and shoulder pavement removed as part of bridge backwall construction, superstructure replacement, or other work (if included in the Contract Documents) with a minimum of 8 inches of DGA, placed in two lifts of 4 inches each compacted and 8 inches of CL2 ASPH BASE 1.0D PG 64-22, placed in two lifts of 4 inches each compacted. Final elevation of the Asphalt Base at the approaches to match the width and new elevation of the riding surface on the bridge less the New Asphalt Surface to be placed. Shoulders shall receive identical treatment to the mainline pavement.

**D. Produce and Place New Asphalt Surface**. Apply an asphalt tack coat in accordance with Section 406. Produce and place the new 1 ¼" Asphalt Surface in accordance with Section 403 and compact under Option B. The new asphalt surface mixture required for this project shall be "CL2 ASPH SURF 0.38D PG 64-22". Place the new asphalt surface to smoothly connect the existing roadway grade at the end of the project, and/or the new abutment backwall.

**E. Granular Embankment for Guardrails**. When necessary to ensure compliance with

standards, widen shoulders behind guardrail with granular embankment and cap with DGA in accordance with plans or as directed by the Engineer. Remove existing topsoil as needed and place embankment in a manner to ensure proper compaction.

**F. Pavement Markings.** Pavement striping will be required to match the existing pavement striping on both approaches and the structure. Pavement striping shall be in accordance with applicable sections of the Standard Specifications and shall be incidental to the work. Raised pavement markers within the limits of the "Bridge Overlay Approach Pavement" shall be removed prior to the milling operation. The marker castings shall be cleaned and returned to the Engineer.

## IV. CONSTRUCTION – OVERLAY PROJECTS

**A. Remove Existing Materials.** Remove the existing pavement material to provide for a minimum of 1¼" new pavement surface from the bridge end extending approximately 25 feet, or as shown in the plans, into the approach pavement and across the width of the approach pavement. The Engineer shall determine the actual length and width of the milling depending on site conditions at each bridge approach. Mill the existing surface so that the new asphalt surface will tie into the new armored edge, if applicable, and matches the elevation of the bridge end. The Engineer shall approve the Contractor's plan for restoring the approach grade prior to the removal of the existing surface. Dispose of all removed material entirely away from the job site or as directed by the Engineer.

**B. Mainline and Shoulder Reconstruction.** Replace shoulders in kind at the approaches to match the width and new elevation of the riding surface on the bridge. Shoulders shall receive identical treatment to the mainline pavement.

**C. Produce and Place New Asphalt Surface**. Apply an asphalt tack coat in accordance with Section 406. Produce and place the new 1 ¼" Asphalt Surface in accordance with Section 403 and compact under Option B. The new asphalt surface mixture required for this project shall be "CL2 ASPH SURF 0.38D PG 64-22". Place the new asphalt surface to smoothly connect the existing roadway grade at the end of the project and the bridge end.

For bridge decks specified to receive a new asphalt overlay as part of the work, place asphalt level and wedge and CL2 ASPH SURF 0.38D PG 64-22 as detailed in the plans to smoothly connect to the bridge approaches. If plans call for use of a waterproof membrane, this shall be addressed as a separate bid item.

**D. Granular Embankment for Guardrails**. When necessary to ensure compliance with standards, widen shoulders behind guardrail with granular embankment and cap with DGA in accordance with the plans or as directed by the Engineer. Remove existing topsoil as needed and place embankment in a manner to ensure proper compaction.

**E. Pavement Markings.** Pavement striping will be required to match the existing pavement striping on both approaches and the structure. Pavement striping shall be in accordance with applicable sections of the Standard Specifications and shall be incidental to the work. Raised pavement markers within the limits of the "Bridge Overlay Approach

Pavement" shall be removed prior to the milling operation. The marker castings shall be cleaned and returned to the Engineer.

## V. MEASUREMENT

A. Granular Embankment: The Department will measure the quantity in cubic yards. The Department will measure along the centerline to determine a linear foot of placement multiplied by a theoretical cross section of 12 square feet to achieve the quantity per side of the roadway.

B. Bridge Overlay Approach Pavement: The Department will measure the quantity of in square yards. The Department will measure along the centerline from each end of the limits of the work as detailed on the plans to the point where the new pavement ties into the exiting pavement and across the width of the new pavement perpendicular to the centerline of the roadway.

C. Foundation Preparation: See Section 603.

## VI. PAYMENT

A. Granular Embankment: Payment at the contract unit price per cubic yard of granular embankment is full compensation for granular embankment and DGA used for widening the shoulder for guardrail as directed. Variance of actual cross sectional quantities versus theoretical quantities will not be considered for additional payment.

B. Bridge Overlay Approach Pavement: Payment at the contract unit price per square yard of is full compensation for removing existing pavement markers, mobilization of milling equipment, removing specified existing pavement material, reconstruct shoulders as needed, furnishing and installing the asphalt tack coat, producing and placing the new asphalt and DGA, and all incidental items necessary to complete the work within the specified pay limits as specified by this note and as shown in the Contract Documents.

C. Foundation Preparation: See Section 603. Payment for Structural Granular Backfill to be incidental to Foundation Preparation.

| ***Code*** | ***Pay Item*** | ***Pay Unit*** |
|---|---|---|
| 02223 | Granular Embankment | Cubic Yards |
| 03304 | Bridge Overlay Approach Pavement | Square Yards |
| 08803 | Foundation Preparation | Lump Sum |

The Department will consider payment as full compensation for all work required.

# SPECIAL NOTE FOR CONCRETE COATING

## I. DESCRIPTION

Perform all work in accordance with the Kentucky Transportation Cabinet, Department of Highways 2012 Standard Specifications for Road and Bridge Construction and applicable Supplemental Specifications, the Standard Drawings, this Note, and the Contract Documents. Section references are to the Standard Specifications.

This work consists of the following:

1. Furnish all labor, materials, tools, equipment, and incidental items necessary to complete the work.
2. Provide safe access to the bridge, in accordance with Section 107.01.01, for the Engineer to sound possible repair areas and for workers to complete the construction.
3. Repair cracks as applicable in accordance with the Special Note for Epoxy Injection Crack Repair.
4. Repair delaminated or spalled areas as applicable in accordance with the Special Note for Concrete Patching.
5. Apply Ordinary Surface Finish
6. Prepare the surfaces to receive coating.
7. Apply concrete coating.
8. Any other work as specified as part of this contract.

## II. MATERIALS

One of the following coating systems shall be used:

| ***Manufacturer*** | ***Prime Coat*** | ***Finish Coat*** |
|---|---|---|
| Sherwin Williams | Macropoxy 646 | Acrolon 218 HS |
| PPG | Amerlock 2 | Devoe Devflex HP |
| Carboline | Carboguard 890 | Carbothane 133 HB |
| Tnemec | Elastogrip 151 | Envirocrete 156 |

The finish product shall be opaque and satin or semi-gloss. The contractor must apply sufficient coats as required to achieve this goal. The finish coat shall be gray and will meet the following values:

| | L* | a* | b* |
|---|---|---|---|
| Grey | 74.94 | -1.54 | 3.92 |

Furnish to the Engineer copies of the manufacturer's technical data sheets, installation guidelines, material safety data sheets, and other pertinent data at least two (2) days prior to beginning the work.

## III. CONSTRUCTION

**A. Perform Concrete Repairs.** Repair concrete surface in accordance with the Special Note for Epoxy Injection Crack Repair and/or the Special Note for Concrete Patching Repair if included in the contract documents.

**B. Apply Ordinary Surface Finish.** Areas receiving epoxy injection, concrete patching, and other surface imperfections, including areas of minor cracking, should receive Ordinary Surface Finish in accordance with Section 601.03.18 of the Standard Specifications. Use mortar of the same cement and fine aggregate as the concrete patching, or as directed by the Engineer. Payment will be incidental to Concrete Sealing.

**C. Areas to Receive Concrete Coating:**

1. Every exposed surface above a point 6" below ground or fill line of abutments, wing walls, end bent and pier caps, pedestals, back walls, columns, and exposed footings.
2. All exposed surfaces of concrete barrier walls, parapets, curbs, and plinths. Do not apply to the riding surface of the concrete deck.
3. The underneath surfaces of slab overhangs outside of exterior girders and to the exterior side and bottom of exterior concrete girders, beams, and box beams.

**D. Prepare Concrete Surfaces for Repair.** All areas specified shall be pressure washed. Equip the pressure washers with calibrated gages and pressure regulators to ascertain and regulate water pressure. All equipment for pressure washing shall be operated at a minimum pressure of up 3,500 to 4,500 psi with 0 degree spinner tip and/or fan tips as determined by the engineer at the working location with a minimum flow rate of 3.5 gal/minute provided that these pressures do not damage any components of the structure. Pressure and flow rates shall be reduced to a level satisfactory to the Engineer should any damage occur due to power washing procedures. The washing wand must be approximately perpendicular to the washed surface and within a maximum of 12 inches of the surface. Wand extensions greater than 36 inches will be subject to Division of Construction approval. Pressure washing of any bridge element will proceed from top of wash area to bottom of wash area. Preform all pressure washing at temperatures above 40 degrees Fahrenheit.

**E. Apply Concrete Coating.** All areas specified shall have concrete coating applied to as specified after debris removal and power washing. New concrete shall be allowed to properly cure in accordance with the manufacturer's recommendations prior to application. Use compressed air to remove any loose debris from the surfaces that are to be coated after power washing. All coatings shall be applied within manufacturers recommended dry film thickness range. Comply with KYTC "Standard Specifications for Road and Bridge Construction" Section 614.03.02 and coatings supplier recommended conditions for application. Allow the surfaces to be coated to dry a minimum of 24 hours before any coating is applied. The coating must be applied with 72 hours of pressure washing. The coating must be applied to a clean and dry surface.

All coating application shall be executed using brushes, rollers, etc. No spray application will be permitted.

The Department requires acceptance testing of samples obtained on a per-lot basis per-shipment. The Division of Materials shall perform acceptance testing. Test samples shall be taken at the Contractor's paint storage site. Department personnel shall perform sampling. Allow (10) working days for testing and approval of the sampled paint. It is the Contractor's responsibility to maintain an adequate inventory of approved paint. The Department shall assume no responsibility for lost work due to rejection of paint or approved paint subsequently found to be defective during the application process. Preform all concrete coating application at temperatures above 40 degrees Fahrenheit or in accordance with manufactures specifications.

## IV. MEASUREMENT

The Department will measure the quantity in square feet. The Department will not measure preparation of the site for the Engineer's access or removal and reapplication of coatings that do not satisfy the Engineer's approval for payment and will consider them incidental to "Concrete Coating".

## V. PAYMENT.

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

| ***Code*** | ***Pay Item*** | ***Pay Unit*** |
|---|---|---|
| 24982EC | Concrete Coating | Lump Sum |

The plans may show an estimate quantity in square feet. The Department will consider payment as full compensation for all work required as described in this note.

# SPECIAL NOTE FOR EROSION PREVENTION AND SEDIMENT CONTROL

When required, 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 August 1, 2009 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.

The Contractor shall perform all final seeding and protection, in accordance with the plans and Section 212 of the 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. If corrections are not made within the 5 days specified, liquidated damages will apply at the rate specified in the Liquidated Damages note in the contract.

Contrary to Section 212. 05 and 213.05, bid items for temporary BMPs and items for permanent erosion control 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". The contractor may use any temporary BMPs and permanent BMPs that fall within the guidance of the 2012 Standard Specifications, KYTC's Best Management Practices manual, and 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.

## 11-10004.00 CLAY COUNTY

## PLAN SHEETS

PLAN SHEETS WHICH ARE TO SCALE ARE AVAILABLE TO VIEW AND PRINT IN THE PROJECT-RELATED INFORMATION FOLDER FOR THIS LETTING AT THE CONSTRUCTION PROCUREMENT WEBSITE:

http://transportation.ky.gov/Construction-Procurement/Pages/default.aspx

# SPECIAL NOTE FOR CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACTS

Clay County SYP 11-10004.00

## I. COMPLETION DATE.

Upon Notice to Proceed, the Contractor has the option of selecting the Begin Work date. Once selected, notify the Department in writing of the date selected at least two weeks prior to beginning work and provide a proposed project schedule. All work is to be completed by the specified contract completion date. The Contractor is allotted 45 calendar days once the bridge is closed to complete all work to safely reopen the structure with no lane closures. At a minimum, prior to reopening the bridge to traffic, all strength requirements and curing for materials used shall be completed per Division 600 of the Standard Specifications. Guardrail shall be installed to the satisfaction of the Engineer prior to reopening the bridge to traffic unless prior approval is obtained from the engineer for use of temporary railing.

The Engineer will begin charging calendar days for a structure on the day the Contractor closes the structure to traffic, regardless of holidays or seasonal weather limitations.

## II. LIQUIDATED DAMAGES.

Liquidated damages will be assessed to the Contractor in accordance with the Transportation Cabinet, Department of Highway's 2012 Standard Specifications for Road and Bridge Construction, Section 108.09, when either the allotted number of calendar days or the specified completion date is exceeded.

Contrary to the Standard Specifications, liquidated damages will be assessed to the Contractor during the months of December, January, February and March when the contract time has expired on any individual bridge. Contract time will be charged during these months. All construction must be completed in accordance with the weather limitations specified in Section 606 and/or Section 601 as applicable. No extension of Contract time will be granted due to inclement weather or temperature limitations that occur due to starting work on the Contract or a structure late in the construction season.

Any approval of cold weather plans or allowance of construction operations to occur outside Section 606 and/or Section 601 does not alleviate the 45 day maximum bridge closure. In the event the closure lasts longer than 45 calendar days as specified, liquidated damages will apply to all excess days regardless of weather limitations.

# *SPECIAL NOTE*

## Tree Clearing Restriction

## Clay County

## Item No. 11-10004
## Bridge No. 026B00093N

DUE TO THE RECOVERY PLAN FOR ENDANGERED BATS, NO TREE CLEARING IS PERMITTED FROM JUNE 1 THROUGH JULY 31.

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

## Special Note for Bridge Demolition, Renovation and Asbestos Abatement

If the project includes any bridge demolition or renovation, the successful bidder is required to notify Kentucky Division for Air Quality (KDAQ) via filing of form (DEP 7036) a minimum of 10 days prior to commencement of any bridge demolition or renovation work.

Any available information regarding possible asbestos containing materials (ACM) on or within bridges to be affected by the project has been included in the bid documents. These are to be included with the Contractor's notification filed with the KDAQ. If not included in the bid documents, the Department will provide that information to the successful bidder for inclusion in the KDAQ notice as soon as possible. If there are no documents stating otherwise, the bidders should assume there are no asbestos containing materials that will in any way affect the work.

# Asbestos Inspection Report

To: Tom Springer, QK4, Inc.

Report Date: 10/19/2018

Conducted By: Jeffrey Lee, Lee Engineering, llc
Kentucky Accredited Asbestos Inspector # I11-05-8973

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## Project and Structure Identification

Project: Clay 11-10004

Structure ID: 026B00093N

Structure Location: KY-577 OVER LITTLE SEXTON CREEK

Inspection Date: 10/4/2018

Sample Description: No samples collected. No suspect materials observed

## Results and Recommendations

The asbestos inspection was performed in accordance with current United States Environmental Protection Agency (US EPA) regulations, specifically 40 CFR Part 61, Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) revision, final rule effective November 20, 1990.

It is recommended that this report accompany the 10-Day Notice of Intent for Demolition (DEP7036 Form) which is to be submitted to the Kentucky Division of Air Quality prior to abatement, demolition, or renovation of any building or structure in the Commonwealth.

No suspect materials observed.

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

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

# RIGHT OF WAY CERTIFICATION

☒ **Original** ☐ **Re-Certification** — **RIGHT OF WAY CERTIFICATION**

| ITEM # | COUNTY | PROJECT # (STATE) | PROJECT # (FEDERAL) |
|---|---|---|---|
| 11-10004.00 | Clay | 1100 FD04 121 9414001R | |

**PROJECT DESCRIPTION**

BRIDGING KENTUCKY PROJECT - REPLACE BRIDGE ON KY 577 OVER LITTLE SEXTON CREEK (026B00093N).

☐ **No Additional Right of Way Required**

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

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

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

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

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

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

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

| Total Number of Parcels on Project | 1 | EXCEPTION (S) Parcel # | ANTICIPATED DATE OF POSSESSION WITH EXPLANATION |
|---|---|---|---|
| **Number of Parcels That Have Been Acquired** | | | |
| Signed Deed | 1 | | |
| Condemnation | 0 | | |
| Signed ROE | 0 | | |

**Notes/ Comments (Use Additional Sheet if necessary)**

| LPA RW Project Manager | | Right of Way Supervisor | |
|---|---|---|---|
| Printed Name | | Printed Name | Mark C. Askin, P.E. |
| Signature | | Signature | |
| Date | | Date | 02/12/19 |

| Right of Way Director | | FHWA | |
|---|---|---|---|
| Printed Name | Dean M. Loy | Printed Name | |
| Signature | DM Loy Digitally signed by DM Loy Date: 2019.02.11 19:51:01 -05'00' | Signature | |
| Date | | Date | |

# UTILITIES AND RAIL CERTIFICATION NOTE

**Clay County**
**Mile point: 6.991 to 6.999**
**ADDRESS DEFICIENCIES OF KY-577 BRIDGE OVER LITTLE SEXTON CREEK. (026B00093N)**

**Item No. 11 - 10004.00**

## PROJECT NOTES ON UTILITIES

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

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

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

# UTILITIES AND RAIL CERTIFICATION NOTE

**Clay County**
**Mile point: 6.991 to 6.999**
**ADDRESS DEFICIENCIES OF KY-577 BRIDGE OVER LITTLE SEXTON CREEK. (026B00093N)**

**Item No. 11 - 10004.00**

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

Columbia Gas-gas

Windstream -telephone

Jackson County RECC -electric

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

**THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION**

Not Applicable

**THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE OWNER OR THEIR SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT**

North Manchester Water Company has an existing 6” water line that that will be relocated on the west side of the bridge.

# UTILITIES AND RAIL CERTIFICATION NOTE

**Clay County**

**Mile point: 6.991 to 6.999**

**ADDRESS DEFICIENCIES OF KY-577 BRIDGE OVER LITTLE SEXTON CREEK. (026B00093N)**

**Item No. 11 - 10004.00**

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

Not Applicable

**RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED**

☒ **No Rail Involvement** ☐ **Rail Involved** ☐ **Rail Adjacent**



Form Revised 6/24/16

# UTILITIES AND RAIL CERTIFICATION NOTE

**Clay County**

**Mile point: 6.991 to 6.999**

**ADDRESS DEFICIENCIES OF KY-577 BRIDGE OVER LITTLE SEXTON CREEK. (026B00093N)**

**Item No. 11 - 10004.00**

## AREA FACILITY OWNER CONTACT LIST

Columbia Gas
1675 Muddy Cr RD
Winchester, KY 40391
Attn: Travis Roberts
c 859-595-3154
travis_roberts@transcanada.com

Windstream
719 North Main Street
London, KY 40741
Attn: Bryan Reed
(606) 309 8438
Bryan.Reed@windstream.com

North Manchester water
7362 N Highway 421
Manchester, KY 40962
Attn: Charles Burns
606-598-5403
water.company@windstream.net

Jackson County RECC
115 Jackson Energy Lane
McKee, KY 40447
Attn: Joe Garland
(606) 364 9205 ext 1205
joegarland@jacksonenergy.com



Form Revised 6/24/16

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

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

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

## PROTECTION OF EXISTING UTILITIES

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

## PREQUALIFIED UTILITY CONTRACTORS

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

**G & W Construction**
**Morehead, KY**

**Akins Excavating**
**Corbin, KY**

**Boca Enterprises**
**Hager Hill, KY**

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

Any utility contractor that is not listed as prequalified or preapproved when the project is advertised for bid and wishes to be added must make request through the KYTC Contract Procurement website. The request should be made at least one week prior to the bidding deadline to allow for review and posting on the KYTC Contract Procurement website. A contractor is only considered prequalified or preapproved when published on the KYTC Contract Procurement website. Contractors that contact the utility owner directly for preapproval or prequalification without contacting KYTC will not be considered for preapproval or prequalification for this contract. Contractors that are not prequalified or preapproved through KYTC before the bidding deadline will not be considered for prequalification or preapproval after bidding.

## CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

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

## SUBMITTALS AND CORRESPONDENCE

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

## ENGINEER

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

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

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

NOTICE TO UTILITY OWNERS OF THE START OF WORK

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

UTILITY SHUTDOWNS

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

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

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

STATIONS AND DISTANCES

All stations and distances, when indicated for utility placement in utility relocation plans or specifications, are approximate; therefore, some minor adjustment may have to be made during construction to fit actual field conditions. Any changes in excess of 6 inches of plan location shall be reviewed and approved jointly by the KYTC Section Engineer or designated representative and utility owner engineer or

designated representative. Changes in location without prior approval shall be remedied by the contractor at his own expense if the unauthorized change creates an unacceptable conflict or condition.

RESTORATION

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

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

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

MATERIAL

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

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

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

SECURITY OF SUPPLIED MATERIALS

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

# Standard Water Bid Item Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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NORTH MANCHESTER WATER DISTRICT

**KY 577 Bridge Over Little Sextons Creek - Waterline Relocations**

TECHNICAL SPECIFICATIONS

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DIVISION 15 – MECHANICAL

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# SECTION 01010

# GENERAL REQUIREMENTS

## PART 1 - GENERAL

### 1.1 DESCRIPTION

A. Division 1 - General Requirements shall apply to all Divisions of the Specifications. Any conflict shall be called to the attention of the Engineer for clarification and ruling.

B. These specifications and drawings accompanying them describe the work to be done and the materials to be furnished for installation of all specified work.

C. By submission of his bid, the Contractor acknowledges that he has acquainted himself with all conditions which may affect the work as would be evident from a thorough investigation of the job site, and these specifications covering the work, for the purpose of coordinating his work and cost, and agrees that the Owner will not be held liable for any additional costs incurred by the Contractor for causes or conditions which could or should have been determined by such an investigation.

### 1.2 MANAGER'S NAME AND PHONE NUMBER

Mr. Charles Burns
North Manchester Water Association
7361 North Highway 421
Manchester, Kentucky 40962
Phone: (606) 598-5403
Fax: (606) 598-6148

### 1.3 DRAWINGS AND SPECIFICATIONS

A. The Drawings and Specifications are intended to be fully explanatory, however, should anything be shown, indicated or specified on one and not the other, it shall be done the same as if shown, indicated or specified in both.

B. It shall be the responsibility of all Contractors and subcontractors to carefully examine all Drawings, Specifications and Contract Documents pertaining to all phases of the construction in order that Contractor and Subcontractors may foresee all requirements for coordination of their work. Submission of a bid shall be construed as evidence that such an examination has been made. Claims based on unforeseen requirements will not be considered.

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C. Should any error or inconsistency appear in Drawings or Specifications, the Contractor, before proceeding with the work, must make mention of the same to the Engineer for proper adjustment, and in no case proceed with the work in uncertainty or with insufficient drawings.

D. Contractors shall follow sizes in specifications or figures on drawings, in preference to scale measurements and follow detail drawings in preference to general drawings.

E. Where it is obvious that a drawing illustrates only a part of a given work or of a number of items, the remainder shall be deemed repetitious and so constructed.

1.4 SCOPE OF WORK

A. General
1. The work to be performed consists of furnishing all materials, labor, equipment and the execution of all operations necessary for the completion of this **KY 577 Bridge over Little Sexton Creek - Waterline Relocations.**
2.. All the miscellaneous items of work shown by the drawings and/or described in the specifications.

1.5 CONTRACTS

A. Notice and Service Thereof:

Any notice to the Contractor from the Owner relative to any part of this Contract, shall be in writing and considered delivered and the service thereof completed, when such notice is posted, by mail, to the Contractor at his last given address, or delivered in person to the Contractor or his authorized representative on the work site.

1.6 DIVISION OF SPECIFICATIONS

A. Division of specifications into sections is done for convenience of reference and is not intended to control Contractors in dividing work among subcontractors or to limit scope of work performed by any trade under any given section.

1.7 CONFLICTS

A. If and when doubt exists in the mind of the Bidder as to the true meaning of any part of the Bidding Documents, the Bidder shall request interpretation thereof in accordance with the Instructions to Bidders. Alleged "answers by telephone" will not be adjudged as legitimate interpretations of conflicting information. Official interpretations shall be by Addendum only, within the time frame indicated in the Instructions to

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Bidders and/or the individual sections of the Specifications. In the absence of an official Addendum, the following shall prevail:

1. If a conflict occurs in or between bidding documents regarding methods of performing the work or the material required, and the Bidder does not obtain a written decision (official Addendum) with respect thereto prior to submitting his proposal, he shall be deemed to have bid upon the more expensive way of doing the work and the better quality of material. If the Owner and/or Engineer later elects to use the less expensive method, less expensive quality or less quantity of material the Owner shall receive a suitable credit.
2. Refer to the General Conditions and Special Conditions for Contract requirements.
3. The intent of the contract documents is to include all items necessary for the proper execution and completion of the work. Anything called for in the specifications and not shown on the drawings or shown on the drawings and not called for in the specifications, shall be included in the Contractor's work the same as if included in both. In case of a doubt arising as to the true intent and meaning of the drawings and specifications, the Contractor shall report it at once to the Engineer. The Engineer shall furnish, with reasonable promptness, additional instructions, by means of drawings or otherwise, necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the contract documents, true developments thereof and reasonably inferable therefrom. The work shall be executed in conformity therewith and the Contractor shall do no work without proper drawings and instructions. In case of conflicts between the various contract documents, the order of precedence will be as follows: (1) Written Contract (2) Written Proposal, (3) Advertisements for Bids, (4) Instructions to Bidders, (5) Special Conditions, (6) General Conditions, (7) Written Technical Specifications, (8) Standard Details, (9) Large Scale Details on Drawings, and (10) General Arrangement Details on Drawings.
4. The Contractor shall make a thorough examination of the site and study all drawings and specifications and all conditions relating to the erection of the work. Materials or labor evidently necessary for the proper and complete execution of the work, which are not specifically mentioned although reasonably inferred therefrom, shall be included in the work.

## 1.8 BENEFICIAL USAGE (SUBSTANTIAL COMPLETION)

A. The date of beneficial usage of the project, or a designated portion thereof, is the date where construction is sufficiently completed on the project for the use for which it is intended.

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B. Corrective work and the replacement of defective equipment or materials and the adjustment of control apparatus shall not delay the determination of beneficial usage.

C. When the majority of the work is complete and ready for operation, but cannot be certified as substantially complete because of incomplete items impossible to complete due to weather conditions, payments will be authorized for the amount of work completed, withholding reasonable amounts to cover the incomplete work. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims, and shall not cancel the contract.

D. When the Owner begins to use the facilities or any portion thereof, before contract completion, the operation, maintenance, utilities and insurance become the responsibility of the Owner.

1.9 LIQUIDATED DAMAGES

Should the Contractor fail to complete the work under his Contract and make the Project available for Beneficial Usage on or before the date stipulated for Beneficial Usage (or such later date as may result from extensions in the Contract Time granted by the Owner), the Contractor agrees that the Owner is entitled to, and shall pay the Owner, as liquidated damages, the sum of **Five** Hundred Dollars ($500.00) for each consecutive calendar day until Beneficial Usage is reached as described herein.

1.10 SUBSTITUTION - MATERIALS AND EQUIPMENT

A. Substitution of major equipment and materials previously submitted by the Contractor and reviewed by the Engineer will be considered only for the following reasons:
   1. Unavailability of the material or equipment due to conditions beyond the control of the supplier.
   2. Inability of the supplier to meet contract schedule.
   3. Technical noncompliance to specifications.

B. Substitution of other equipment and materials named in the specifications will be considered, provided the proposed substitution will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function of that specified. The burden for proving equality is that of the Contractor.

C. Inclusion of a certain make or type of materials or equipment in the Contractor's estimate shall not obligate the Owner to accept such material or equipment if it does not meet the requirements of the plans and specifications.

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D. Also, see Section 01600.

1.11 CONTRACTOR USE OF PREMISES

A. Release of Site:
1. All access to the site shall be as defined by the Owner.
2. Contractor shall insure that no hazardous situations exist at the site during working hours or are left during non-working hours.

1.12 SCHEDULING OF WORK

A. The work shall be scheduled so the lines can be put into service by phases and at the earliest possible date.

B. The Contractor shall coordinate all required shutdowns of existing systems with the various utilities of the **North Manchester Water Association;** so as to cause the least inconvenience to existing users thereof.

C. All work shall be completed within time limits established in other portions of the Contract Documents.

1.13 TRAFFIC MAINTENANCE

A. All traffic must be maintained at all times on public streets and roadways. No road or street shall be closed without special written permission from the Owner.

B. Traffic must be maintained on State maintained roads in accordance with the Standard Drawings, details and specifications. Contractor will be required to adhere to all provisions of the Kentucky Transportation Cabinet Permit for the project.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

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# SECTION 01040

# COORDINATION

## PART 1 - GENERAL

### 1.1. COORDINATION OF THE WORK

A. The Contractor shall coordinate the work of all the crafts, trades, subcontractors engaged on the Work, and he shall have final responsibility as regards the schedule, workmanship, and completeness of each and all parts of the Work.

B. All crafts, trades, and subcontractors shall be made to cooperate with each other and with others as they may be involved in the installation of work, which adjoins, incorporates, proceeds, or follows the work of another. It shall be the Contractor's responsibility to point out areas of cooperation prior to the execution of subcontract agreements and the assignment of the parts of the Work. Each craft, trade, and subcontractor shall be made responsible to the Owner, for furnishing embedded items, giving directions for doing all cutting and fitting, making all provisions for accommodating the Work, and for protecting, patching, repairing, and cleaning as required to satisfactorily perform the Work.

C. The Contractor shall be responsible for all cutting, digging, and other action of his subcontractors and workmen. Where such action impairs the safety or function of any structure or component of the Project, the Contractor shall make such repairs, alterations, and additions as will, in the opinion of the Engineer, bring said structure or component back to its original design condition at no additional cost to the Owner.

D. Each subcontractor is expected to be familiar with the General requirements and all sections of the Detailed Specifications for all other trades and to study all Drawings applicable to his work and to the end that complete coordination between trades will be affected. Each Contractor shall consult with the Engineer if conflicts exist on the Drawings.

## PART 2 - PRODUCTS

NOT USED.

## PART 3 - EXECUTION

NOT USED.

END OF SECTION

SME: 19001

# SECTION 01050

# FIELD ENGINEERING

## PART 1 - GENERAL

### 1.1 WORK INCLUDED

A. Contractor's Responsibility

1. It shall be the Contractors' responsibility to establish all lines, elevations, reference marks, and batter boards needed by the Contractor during the progress of the Work. The Engineer shall have final approval of location of all facilities.
2. The Engineer shall be permitted at all times to check the lines, elevations, reference marks, and batter boards, set by the Contractor, who shall correct any errors in lines, elevations, reference marks, batter boards, etc., disclosed by such check. Such a check shall not be construed to be an approval of the Contractor's work and shall not relieve or diminish in any way the responsibility of the Contractor for the accurate and satisfactory construction and completion of the entire Work.
3. The Contractor shall make, check, and be responsible for all measurements and dimensions necessary for the proper construction of and the prevention of misfittings in the Work.

B. Work to Conform

1. During the progress and on its completion, the work shall conform truly to the lines, levels, and grades indicated on the Drawings or given by the Engineer and shall be built in a thoroughly substantial and workmanlike manner, in strict accordance with the Drawings, Specifications, and other Contract Documents and the directions given by the Engineer.
2. All work done without instructions having been given by the Engineer, without proper lines or levels, or performed during the absence of the Engineer, will not be estimated or paid for except when such work is authorized by the Engineer in writing. Work so done may be ordered uncovered or taken down, removed, and replaced at the Contractor's expense.

C. Pipe Location:

1. Exterior pipelines will be located substantially as indicated on the Drawings, but the right is reserved by the Owner, acting through the Engineer, to make such modifications in location as may be neces-

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sary. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

D. Limits of Normal Excavation:

1. In determining the quantities of excavation to which unit prices shall apply, the limits of normal width and depth of excavation shall be as described below, unless other limits are indicated on the Drawings or specified.
2. Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the Engineer, trenches shall in no case be excavated or permitted to become wider than 2'6" plus the nominal diameters of the pipe at the level of or below the top of the pipe. Trenches cut in roads and streets shall not exceed a maximum width of 2'6" plus the nominal diameters of the pipe at the level of the road or street surface. The normal depth shall be measured to a distance of 0.2 feet below the bottom of the pipe in earth and 0.5 feet in rock, unless there is a cradle underneath the pipe, in which case the normal depth shall be measured to the underside of the cradle. The width of trench for the cradle shall be assumed to be that specified above for pipes in trench.
3. For concrete placed directly against the undisturbed earth, the normal width and depth of the excavation for such concrete shall be measured to the neat lines of the concrete as indicated on the Drawings or as ordered.
4. For concrete placed against rock surfaces resulting from rock excavation, the normal width and depth of the excavation shall be measured to 4 inches outside the neat lines of the concrete as indicated on the Drawings or as ordered.
5. For other structures, except manholes as noted below, the normal width shall be measured between vertical planes one foot outside the neat lines of the several parts of the structure, except that the width at any elevation shall be measured as not less than the width at a lower elevation. The normal depth shall be measured to the underside of that part of the structure for which the excavation is made.
6. No additional width or depth of trenches excavated in earth or rock shall be allowed at standard circular manholes.
7. Wherever bell holes are required for jointing pipe, they shall be provided without additional compensation over and above that resulting from measurements as above described.
8. Anchor bolts and expansion bolts shall be set accurately. If anchor bolts are set before the concrete has been placed, they shall be carefully held in suitable templates of acceptable design. Where indicated on the Drawings, specifications or as required, anchor

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bolts shall be provided with square plates at least 4 inches by 4 inches by 3/8 inch or shall have square heads and washers and be set in the concrete forms with suitable pipe sleeves, or both. If anchor or expansion bolts are set after the concrete has been placed, all necessary drilling and grouting or caulking shall be done by the Contractor. Care shall be taken not to damage the structure or finish by cracking, chipping, spalling, or otherwise drilling and caulking.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

SME: 19001

# SECTION 01060

# REGULATORY REQUIREMENTS

## PART 1 - GENERAL

### 1.1 CODES

All construction work shall be done in strict accordance with the latest edition of the Kentucky Building Code, National Electrical Code (NEC) and supplements, the requirements of the local electrical utility company, local codes, and as specified herein. Skilled workmen shall perform all work in a neat manner and all equipment shall be cleaned before final acceptance. A partial list of codes is as follows:

Kentucky Building Code
City and/or County Building Inspector
National and Local Electrical Codes
National Fire Protection Association (NFPA)
State Fire Marshal
Local Fire Marshal
Standards of Safety
O.S.H.A.
KY Division of Water

## PART 2 - PRODUCTS

NOT USED.

## PART 3 - EXECUTION

NOT USED.

END OF SECTION

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# SECTION 01070

# ABBREVIATIONS AND SYMBOLS

## PART 1 - GENERAL

### 1.1. REQUIREMENTS INCLUDED

Where any of the following abbreviations are used in the Contract Documents, they shall have the meaning set forth as follows.

### 1.2. QUALITY ASSURANCE

A. For the products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. The date of the standard is that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is specified.

C. When required by individual Specifications section, obtain a copy of standard. Maintain a copy at job site during submittals, planning and progress of the specific work, until Substantial Completion.

### 1.3. SCHEDULE OF REFERENCES

| | |
|---|---|
| AASHTO | American Association of State Highway and Transportation Officials |
| ACI | American Concrete Institute |
| AFBMA | Anti-Friction Bearing Manufacturers Association. |
| AGA | American Gas Association |
| AGMA | American Gear Manufacturers Association |
| IEEE | Institute of Electrical and Electronic Engineers, Inc. |
| AISC | American Institute of Steel Construction |
| AMCA | Air Moving and Conditioning Association |
| ANS | American National Standards Institute |

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| | |
|---|---|
| API | American Petroleum Institute |
| ASCE | American Society of Civil Engineers |
| ASHRAE | American Society of Heating, Refrigerating and Air Conditioning Engineers |
| ASME | American Society of Mechanical Engineers |
| ASTM | American Society for Testing and Materials |
| AWWA | American Water Works Association |
| CS | Commercial Standard |
| IBR | Institute of Boiler and Radiator Manufacturers |
| IPS | Iron Pipe Size |
| JIC | Joint Industry Conference Standards |
| KDOH | Kentucky Department of Highways |
| NBS | National Bureau of Standards |
| NEC | National Electrical Code; latest edition |
| NEMA | National Electrical Manufacturers Association |
| NFPA | National Fire Protection Association |
| SMACNA | Sheet Metal and Air Conditioning Contractors National Association, Inc. |
| Fed. | Federal Specifications issued by the Federal Supply Spec. Service of the General Services Administration, Washington, D.C. |
| 125-lb ANS | American National Standard for Cast-Iron Pipe |
| 150-lb ANS | Flanges and Flanged Fittings, Designation B16.1-1975, for the appropriate class |
| AWG | American or Brown and Sharpe Wire Gage |
| NPT | National Pipe Thread |
| OS&Y | Outside screw and yoke |
| Stl.Wg | U. S. Steel Wire, Washburn and Moen, American Steel and Wire or |

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| | |
|---|---|
| | Roebling Gage |
| UL | Underwriters' Laboratories |
| USS | United States Standard Gage |
| WOG | Water, Oil, Gas |
| WSP | Working Steam Pressure |

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

SME: 19001

# SECTION 01090

# REFERENCE STANDARDS

## PART 1 - GENERAL

### 1.1. QUALITY ASSURANCE

A. For Products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Material shall bear Underwriters' Laboratories label where such a standard has been established and listed by Underwriters' Laboratories, Inc. All materials, equipment and appliances shall conform to requirements of standards referenced here.

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

D. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

E. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

### 1.2. SCHEDULE OF REFERENCES

ACI American Concrete Institute
Box 19150
Reford Station
Detroit, MI 48219

AGC Associated General Contractors of America
1957 E Street, N.W.
Washington, DC 20006

AITC American Institute of Timber Construction
333 W. Hampden Avenue
Englewood, CO 80110

ANSI American National Standards Institute
1430 Broadway
New York, NY 10018

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| | |
|---|---|
| ASTM | American Society for Testing and Materials<br>1916 Race Street<br>Philadelphia, PA 19103 |
| CDA | Copper Development Association<br>57th Floor, Chrysler Building<br>405 Lexington Avenue<br>New York, NY 10174 |
| CRSI | Concrete Reinforcing Steel Institute<br>933 Plum Grove Road<br>Schaumburg, IL 60195 |
| FCC | Federal Communications Commission<br>DOT, M443.2<br>Utilization and Storage Section<br>Washington, DC 20590 |
| FM | Factory Mutual System<br>1151 Boston-Providence Turnpike<br>Norwood, MA 02062 |
| IEEE | Institute of Electrical and Electronics Engineers<br>345 East 47th Street<br>New York, NY 10017 |
| NEMA | National Electrical Manufacturers' Association<br>2101 L Street, N.W.<br>Washington, DC 20037 |
| NFPA | National Fire Protection Association<br>1619 Massachusetts Avenue, N.W.<br>Washington, DC 20036 |
| PCA | Portland Cement Association<br>5420 Old Orchard Road<br>Skokie, IL 60077 |
| REA | Rural Electrification Administration<br>USDA-REA-ASD<br>Room 0180<br>ATTN: Publications<br>14th and Independence Avenue, S.W.<br>Washington, DC 20250 |

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UL Underwriters' Laboratories, Inc.
333 Pfingston Road
Northbrook, IL 60062

PART 2 - REFERENCED STANDARDS

2.1 All work performed in connection with this contract shall be in accordance with the latest version of the following standards:

Occupational Safety and Health Administration (OSHA)

Applicable Telecommunications Standards

National Fire Protection Association

National Electrical Code (NEC)

National Electrical Safety Code (NESC)

Federal Communications Commission

National Telecommunications and Information Administration

Electronics Industries Association (EIA)

American National Standards Institute

Rural Electrification Administration

PART 3 - EXECUTION

NOT USED.

END OF SECTION

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# SECTION 01300

# SUBMITTALS

## PART 1 - GENERAL

### 1.1. WORK INCLUDED

Shop drawings, descriptive literature, project data and samples (when samples are specifically requested) for all manufactured or fabricated items shall be submitted by the Contractor to the Engineer for examination and review in the form and in the manner required by the Engineer. All submittals shall be furnished as set out in paragraph 1.5 hereinafter and shall be checked and reviewed and stamped and signed as approved by the Contractor before submission to the Engineer. The review of the Drawings by the Engineer shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Review of such drawings will not relieve the Contractor of the responsibility for any errors which may exist, as the Contractor shall be responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work.

### 1.2. RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. General Conditions.

B. Section 01720 - Project Record Documents (As Builts).

### 1.3. DEFINITIONS

The term "submittals" shall mean shop drawings, manufacturer's drawings, catalog sheets, brochures, descriptive literature, diagrams, schedules, calculations, material lists, performance charts, test reports, office and field samples, and items of similar nature which are normally submitted for the Engineer's review for conformance with the design concept and compliance with the Contract Documents.

### 1.4. GENERAL CONDITIONS

Review by the Engineer of shop drawings or submittals of material and equipment shall not relieve the Contractor from the responsibilities of furnishing same of proper dimension, size, quality, quantity, materials, and all performance characteristics to efficiently perform the requirements and intent of the Contract Documents. Review shall not relieve the Contractor from the responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents.

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Review of shop drawings shall not be construed as releasing the Contractor from the responsibility of complying with the Specifications.

1.5. GENERAL REQUIREMENTS FOR SUBMITTALS

A. .Shop Drawings

1. Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on Contract Drawings. Where applicable, show fabrication, layout, setting, and erection details.
2. Shop drawings are defined as original drawings prepared by the Contractor, subcontractors, suppliers, or distributors performing work under this Contract. Shop drawings illustrate some portion of the work and show fabrication, layout, setting, or erection details of equipment, materials, and components. The Contractor shall, except as otherwise noted, have prepared the number of reviewed copies required for contractor distribution plus three (3), which will be retained by the Engineer. Shop drawings shall be folded to an approximate size of 8-1/2" x 11" and in such manner that the title block will be located in the lower right-hand corner of the exposed surface.

B. Project data shall include manufacturer's standard schematic drawings modified to delete information which is not applicable to the Project, and shall be supplemented to provide additional information applicable to the Project. Each copy of descriptive literature shall be clearly marked to identify pertinent information as it applies to the Project.

C. Where samples are required, they shall be adequate to illustrate materials, equipment, or workmanship, and to establish standards by which completed work is judged. Provide sufficient size and quantity to clearly illustrate functional characteristics of product and material, with integrally related parts and attachment devises, along with a full range of color samples.

D. All submittals shall be referenced to the applicable item, section, and division of the Specifications, and to the applicable Drawing(s) or Drawing schedule(s). All submittals shall bear the Engineer's project code as noted in the upper right corner of this sheet.

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E. . The Contractor shall review and check submittals. Including those of any subcontractor(s) and shall indicate his review and approval by placing and executing the following on all shop drawings:

> This shop drawing has been reviewed by [*Name of Contractor*] and approved with respect to the mean, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incidental thereto. [*Name of Contractor*] also warrants that this shop drawing complies with contract documents and comprises no variation thereto.
>
> By
> Date_____
> _____

F. If the submittals deviate from the Contract Drawings and/or Specifications, the Contractor shall advise the Engineer, in letter of transmittal of the deviation and the reasons therefore. All changes shall be clearly marked on the submittal with a bold red mark. Any additional costs for modifications shall be borne by the Contractor.

G. In the event the Engineer does not specifically reject the use of material or equipment at variance to that which is shown on the Drawings or specified, the Contractor shall, at no additional expense to the Owner, and using methods reviewed by the Engineer, make any changes to structures, piping, controls, electrical work, mechanical work etc., that may be necessary to accommodate this equipment or material. Should equipment other than that on which design drawings are based be accepted by the Engineers, shop drawings shall be submitted detailing all modification work and equipment changes made necessary by the substituted items.

H. Additional information on particular items, such as special drawings, schedules, calculations, performance curves, and material details, shall be provided when specifically requested in the technical Specifications.

I. Submittals for all electrically operated items (including instrumentation and controls) shall include complete wiring diagrams showing leads, runs, number of wires, wire size, color coding, all terminations and connections, and coordination with related equipment.

J. Equipment shop drawings shall indicate all factory or shop paint coatings applied by suppliers, manufacturers, and fabricators; the Contractor shall be responsible for ensuring the compatibility of such coatings with the field-applied paint products and systems.

K. Fastener specifications of manufacturer shall be indicated on equipment shop drawings.

L. Where manufacturers' brand names are given in the Specifications for building and construction materials and products, such as grout, bonding compounds, curing compounds, masonry cleaners, waterproofing solutions, and similar products, the Contrac-

tor shall submit names and descriptive literature of such materials and products he proposes to use in this Contract.

M. No material shall be fabricated or shipped unless the applicable drawings or submittals have been reviewed by the Engineer and returned to the Contractor.

N. All bulletins, brochures, instructions, parts lists, and warranties packaged with and accompanying materials and products delivered to and installed in the Project shall be saved and transmitted to the Owner through the Engineer.

1.6. CONTRACTOR RESPONSIBILITIES

A. Verify field measurements, field construction criteria, catalog numbers, and similar data.

B. Coordinate each submittal with requirements of Work and of Contract Documents.

C. Notify Engineer, in writing at time of submission, of deviation in submittals from requirement of Contract Documents.

D. Begin no work, and have no material or products fabricated or shipped which require submittals until return of submittals with Engineer's stamp and initials or signature indicating review.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

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# SECTION 01410

# TESTING LABORATORY SERVICES

## PART 1 - GENERAL

### 1.1. REQUIREMENTS

A. The Contractor shall employ and pay for the services of a certified independent testing laboratory to perform specified services and testing.

B. It is the Contractors responsibility to verify that the laboratory meets the required standards and qualifications.

### 1.2. RELATED REQUIREMENTS

A. CONDITIONS OF THE CONTRACT

B. Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities.

C. Testing laboratory inspection, sampling and testing is required for the following sections and as specified:

Section 03300: Concrete For Building Construction

### 1.3. QUALIFICATION OF LABORATORY

A. Meet "Recommended Requirements for Independent Laboratory Qualification": published by American Council of Independent Laboratories.

B. Meet basic requirements of ASTM E329, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction."

C. Authorized to operate in the state in which the project is located.

D. Submit copy of report of inspection of facilities made by Materials Reference Laboratory of National Bureau of Standards during the most recent tour of inspection with memorandum of remedies of any deficiencies reported by the inspection.

E. Test Equipment

1. Calibrated at reasonable intervals by devices of accuracy traceable to either:

a. National Bureau of Standards.
b. Accepted values of natural physical constants.

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1.4. LABORATORY DUTIES.

A. Cooperate with Owner, Engineer and Contractor; provide qualified personnel after due notice.

B. Perform specified inspections, sampling and testing of materials and methods of construction:

1. Comply with specified standards.
2. Ascertain compliance of materials with requirements of Contract Documents.

C. Promptly notify Engineer and Contractor of observed irregularities or deficiencies of work or products.

D. Promptly submit written report of each test and inspection; one copy each to Engineer, Owner, Contractor, and one copy to Record Documents File. Submittal schedule for each time of test shall be approved by Engineer prior to construction of any item that requires testing. Each report shall include:

1. Date issued.
2. Project title and number.
3. Testing laboratory name, address and telephone number.
4. Name and signature of laboratory inspector.
5. Date and time of sampling or inspection.
6. Record of temperature and weather conditions.
7. Date of test.
8. Identification of product and specification section.
9. Location of sample or test in the project.
10. Type of inspection or test.
11. Results of tests and compliance with Contract Documents.
12. Interpretation of test results, when requested by Engineer or owner.

E. Perform additional tests required by Engineer or the Owner.

1.5. LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

A. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of Contract Documents.
2. Approve or accept any portion of the work.
3. Perform any duties of the Contractor.

1.6. CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel and provide access to work as required.

B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

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C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require control by the testing laboratory.

D. Furnish copies of products test reports as required.

E. Furnish incidental labor and facilities:

1. To provide access to work to be tested.
2. To obtain and handle samples at the project site or at the source of the product to be tested.
3. To facilities inspections and tests.
4. For storage and curing of test samples.

F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

1. When tests of inspections cannot be performed after such notice, reimburse laboratory personnel for expenses incurred due to negligence.

G. Employ and pay for the services of a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required.

1. For convenience.
2. When initial tests indicate work does not comply with Contract Documents.

## PART 2 - PRODUCTS

NOT USED

## PART 3 - EXECUTION

NOT USED.

END OF SECTION

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# SECTION 01420

# INSPECTION SERVICES

## PART 1 - TEST AND INSPECTION

### 1.1. GENERAL

A. The Engineer shall be notified forty-eight (48) hours in advance when equipment is to be subjected to tests before any work is concealed and before trenches are backfilled. Failing to comply with the above-mentioned notice, this Contractor shall uncover the work for the Engineer's observation, and repair any damages to other Contractor's work. This Contractor shall provide these services without charge.

B. Periodic inspection shall be scheduled by the Contractor for rough as well as finished work. The rough-in inspections shall be divided into as many inspections as may become necessary to cover all roughing-in.

C. Before requesting a final inspection, this Contractor shall inspect the installation to assure that the job is complete in every detail and that all requirements of the Contract Documents have been fulfilled.

D. A punch list inspection shall be scheduled by this Contractor with the Engineer or his representative present. The punch list inspection shall be made with junction box covers removed.

E. The Contractor shall be responsible and shall pay all costs for the preparation, job curing (if required) and transportation of materials and equipment to the laboratory or inspection agency retained by the Owner except where these documents say specifically the Owner will pay these costs.

F. The Contractor will be responsible for the procurement, administration and payment of all specified inspection and testing procedures. Only qualified licensed/ certified firms for the designated services will be approved. The Contractor shall submit the names of the firms for approval by the Owner prior to administering of the inspection or testing services.

### 1.2. ELECTRICAL INSPECTION

A. Electrical inspections will be performed throughout the course of construction by a certified electrical inspector from the State Fire Marshal's Office.

B. All cost of the electrical inspections shall be borne by the Contractor.

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C. Acceptance by the electrical inspector, however, does not relieve the Contractor from the responsibility of the requirements set forth in these Plans and Specifications. All work under this Contract is subject to the observation of the Engineer. When it is the opinion of the Engineer that the Contractor has failed to properly coordinate his work or provide materials and installation, or to meet the intent of these specifications, the codes and standards, then the Contractor shall remove the work and replace the work to meet the intent of the Specifications, Codes, and Standards without reimbursement.

1.3 CERTIFICATES

The Contractor shall furnish the Owner with Certificates of Inspections and Approval where required.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

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# SECTION 01440

# CONTRACTOR QUALITY CONTROL

## PART 1 - GENERAL

### 1.1. WORK INCLUDED

A. The General Contractor shall set forth for immediate execution a detailed and well-organized quality control plan and implementation program.

### 1.2. CODES, STANDARDS AND INDUSTRY SPECIFICATIONS

A. Material or operations specified by reference to published specifications of a manufacturer, testing agency, society, association or other published standards shall comply with requirements in latest revisions thereof and amendments or supplements thereto in effect on date of (Advertisement for Bids).

B. Discrepancies between referenced codes, standards, specifications and Contract Documents shall be governed by the latter unless written interpretation is obtained from Engineer.

C. Material or work specified by reference to conform to a standard, code, law or regulation shall be governed by Contract Documents when they exceed requirements of such references; referenced standards shall govern when they exceed Contract Documents.

D. Proof of Compliance

Whenever Contract Documents require that a project be in accordance with Federal Specification, ASTM designation, ANSI specification, or other association standard, at Engineer request, Contractor shall present an affidavit from manufacturer certifying that product complies therewith. Where requested or specified, submit supporting test data to substantiate.

E. PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices and/or lump-sum prices contained in the Bidding Schedule.

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices and/or lump-sum prices contained in the Bidding Schedule.

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PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1. GENERAL

The General Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both on-site and off-site, and shall be keyed to the proposed construction sequence.

3.2. QUALITY CONTROL PLAN

A. General

The General Contractor shall furnish for review by the Engineer and Owner not later than 30 days after receipt of notice to proceed, a Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract. The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Engineer will consider an interim plan for the first 30 days of operation.

B. Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Engineer/Owner reserves the right to require the Contractor to make changes in his CQC plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.3. SUBMITTALS

Submittals shall be as specified in Section 01300 SUBMITTAL. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

3.4. CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the

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construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. The controls shall be adequate to cover all construction operations, including both on-site and off-site fabrication, and will be keyed to the proposed construction sequence.

3.5. TESTS

A. Testing Procedure

The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to contract requirements. Testing includes operation and/or acceptance tests when specified. A list of tests to be performed shall be furnished as a part of the CQC plan. The list shall give the test name, frequency, specification paragraph containing the test requirements, the personnel and laboratory responsible for each type of test, and an estimate of the number of tests required. The Contractor shall perform the following activities and record and provide the following data:

1. Verify that testing procedures comply with contract requirements.
2. Verify that facilities and testing equipment are available and comply with testing standards.
3. Check test instrument calibration data against certified standards.
4. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
5. Results of all tests taken, both passing and failing tests, will be recorded on the Quality Control report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test will be given. Actual test reports may be submitted later, if approved by the Engineer, with a reference to the test number and date taken. An information copy of tests performed by an off-site or commercial test facility will be provided directly to the Engineer. Failure to submit timely test reports, as stated, may result in nonpayment for related work performed and disapproval of the test facility for this contract.

B. Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials will be borne by the Contractor.

3.6. COMPLETION INSPECTION

At the completion of all work or any increment thereof established by a completion time, the Contractor shall conduct an inspection of the work and

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develop a "punch list" of items which do not conform to the approved plans and specifications. Such a list of deficiencies shall be included in the CQC documentation, and shall include the estimated date by which the deficiencies will be corrected. The Contractor shall make a second inspection to ascertain that all deficiencies have been corrected and so notify the Engineer. These inspections and any deficiency corrections required by this paragraph will be accomplished within the time stated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.7. DOCUMENTATION

A. The Contractor shall maintain current records of quality control operations, activities, and tests performed, including the work of subcontractors and suppliers. These records shall be on an acceptable form and shall include factual evidence that required quality control activities and/or tests have been performed, including but not limited to the following:

1. Contractor/subcontractor and their area of responsibility.
2. Operating plant/equipment with hours worked, idle, or down for repair.
3. Work performed today, giving location, description, and by whom.
4. Test and/or control activities performed with results and references to specifications/plan requirements.
5. Material received with statement as to its acceptability and storage.
6. Identify submittals reviewed, with contract reference, by whom, and action taken.
7. Off-site surveillance activities, including actions taken.
8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
9. List instructions given/received and conflicts in plans and/or specifications.
10. Contractor's verification statement.
11. These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Engineer weekly within 20 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the Contractor. The report from the Contractor shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

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## 3.8. SAMPLE FORMS

Sample forms for Daily Construction Quality Control Report and Deficiency shall be provided by the General Contractor and submitted to Engineer for acceptance.

## 3.9. LINES AND GRADES

A. Be responsible for properly laying out work, and for lines and measurements for the work executed under Contract Documents. Verify figures indicated on Drawings before laying out work, and report errors or inaccuracies in writing to the Engineer before commencing work.

B. All trades shall be responsible for layout of their work, based on reference lines and measurements established by the General Contractor.

C. Establish and maintain permanent hubs and other control points throughout construction.

END OF SECTION

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# SECTION 01580

# PROJECT IDENTIFICATION AND SIGNS

## PART 1 - GENERAL

### 1.1. WORK INCLUDED

A. The Contractor shall provide sign required by these specifications near the site of the work. The sign shall set forth the description of the work and the names of the Owner, Engineer and Contractor as shown hereinafter in these Specifications.

B. The Contractor for **KY 509 Bridge Over Little Sextons Creek - Water-line Relocations** shall furnish and install one (1) project signs as described in previous paragraph and as detailed hereafter.

## PART 2 - PRODUCTS

### 2.1. SIGNS

A. The signs shall be constructed of 3/4" thick APA A-B Exterior grade or marine plywood. Posts shall be 4" x 4" of fencing type material. Prime all wood with white primer.

## PART 3 - EXECUTION

### 3.1. MAINTENANCE

A. The signs shall be maintained in good condition until completion of the Project. The signs shall be removed at completion of project.

### 3.2. LOCATION OF SIGN.

The signs called for in these Specifications shall be placed at the location selected by the Engineer.

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# SECTION 01600

## SPECIAL PROVISIONS FOR MATERIALS AND EQUIPMENT

### 1.01 SERVICES OF MANUFACTURERS' REPRESENTATIVE AND OPERATING MANUALS

A. Bid prices for equipment furnished under Divisions 11, 13, 15 and 16, shall include the cost of written operation and maintenance instructions and the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment, and testing of the equipment and to instruct the OWNER'S operating personnel and the ENGINEER'S representative on operation and maintenance. This supervision and instruction may be divided into two or more time periods as required by the installation program, and shall be scheduled at the convenience of the OWNER.

B. Unless otherwise specified with the equipment, equipment manufacturers shall provide a minimum of 2 separate repeated training sessions for the OWNER'S staff. Each session shall be at least 2 hours in length, but not more than 4 hours. Manufacturer's agenda and schedule for the training shall be submitted to and approved by the OWNER prior to conducting the training. No training will be scheduled until the equipment has been installed, satisfactorily tested, and is ready for operation.

C. The manufacturer's representative shall have complete knowledge of the proper installation, lubrication, operation and maintenance of the equipment provided and shall be capable of instructing the representatives of the OWNER and ENGINEER on proper start-up, shut-down, on-line operations, lubrication and preventive maintenance of the equipment. Outlines of lesson plans and proposed training schedule shall be submitted to the ENGINEER for review 30 days prior to the desired instructional period. Specific requirements for furnishing the services of manufacturer's representatives are indicated under detailed Specifications. This work may be conducted in conjunction with Inspection and Testing, whenever possible, as provided under Part 3 of EXECUTION of detailed specification. Should difficulties in operation of the equipment arise due to the manufacturer's design or fabrication, additional services shall be provided at no cost to the OWNER.

D. A certificate from the manufacturer stating that the installation of the equipment is satisfactory, that the unit has been satisfactorily tested, is ready for operation, and that the operating personnel have been suitably instructed in the operation, lubrication, and care of the unit shall be submitted to the ENGINEER.

E. For equipment furnished under other Divisions, the CONTRACTOR, unless otherwise specified, shall furnish the services of accredited representatives of the manufacturer only when some evident malfunction or over-heating makes such services necessary.

F. Four complete sets of operation and maintenance instructions covering all equipment furnished under Divisions 11, 13, 15 and 16, shall be delivered directly to the ENGINEER.

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1. The manual for each piece of equipment shall be a separate document with the following specific requirements:

   a. Contents:

      Table of contents and index

      Brief description of each system and components

      Starting and stopping procedures

      Special operating instructions

      Routine maintenance procedures

      Manufacturer's printed operating and maintenance instructions, parts list, illustrations, and diagrams. These shall be specific to the material supplied under the Contract, and not a manufacturer general brochure.

      One copy of each wiring diagram

      One final accepted copy of each shop drawing and each CONTRACTOR'S coordination and layout drawing

      List of spare parts, manufacturer's price, and recommended quantity

      Manufacturer's name, address, and telephone number

      Name, address, and telephone number of manufacturer's local representative

   b. Material:
      Loose leaf on punched paper. Holes reinforced with plastic, cloth or metal. 8-1/2” x 11” paper size.
      Diagrams and illustrations, attached foldouts as required of original quality, reproducible by dry copy method

      Covers: oil, moisture, and wear resistant 9” x 12” size

      c. Submittals to the ENGINEER:
      (1) Three preliminary copies of manuals, no later than 15 days following final review of the shop drawings for each piece of equipment and 4 final copies of complete manuals prior to Field Tests.

1.02 INSTALLATION OF EQUIPMENT

A. Special care shall be taken to ensure proper alignment of all equipment with particular reference to the pumps, blowers and electric drives. The units shall be

carefully aligned on their foundations by qualified millwrights after their sole plates have been shimmed to true alignment at the anchor bolts. The anchor bolts shall be set in place and the nuts tightened against the shims. After the foundation alignments have been reviewed by the ENGINEER, the bedplates or wing feet of the equipment shall be securely bolted in place. The alignment of equipment shall be further checked after securing to the foundations, and after conformation of all alignments, the sole plates shall be finally grouted in place. The CONTRACTOR shall be responsible for the exact alignment of equipment with associated piping, and under no circumstances, will "pipe springing" be allowed.

B. All wedges, shims, filling pieces, keys, packing, red or white lead grout, or other materials necessary to properly align, level, and secure apparatus in place shall be furnished by the CONTRACTOR. All parts intended to be plumb or level must be proven exactly so. Any grinding necessary to bring parts to proper bearing after erection shall be done at the expense of the CONTRACTOR.

1.03 GREASE, OIL AND FUEL

A. All grease, oil, and fuel required for testing of equipment shall be furnished with the respective equipment. The OWNER shall be furnished with a one year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied under Divisions 11, 13, 15 and 16.

B. All lubricants and fuels shall be properly labeled, using an indelible marker and writing on the lubricant container or drum, specifying the type and brand name of the lubricant supplied. A Master Lubrication list must be submitted to the ENGINEER for approval clearly stating which lubricants are to be used in the various pieces of plant equipment and the quantity supplied for one years' use by each unit.

1.04 TOOLS AND SPARE PARTS

A. Any special tools (including grease guns or other lubricating devices) which may be necessary for the adjustment, operation, and maintenance of any equipment shall be furnished with the respective equipment.

B. All spare parts shall be properly protected for long periods of storage (contained in plastic bags or cardboard containers) and labeled for easy identification without opening.

1.05 MAINTENANCE AND LUBRICATION SCHEDULES

A. The CONTRACTOR'S attention is directed to the General Conditions and Section 01300 for all requirements relative to the submission of shop drawings for the mechanical equipment. For all mechanical and electrical equipment furnished, the CONTRACTOR shall provide a list including the equipment name, and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained. In

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addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted along with shop drawings. Submission shall be in 4 copies.

1.06 STORAGE AND HANDLING OF EQUIPMENT

A. Special attention shall be given to the storage and handling of equipment. As a minimum, the procedure outlined below shall be followed:

1 . Equipment shall not be shipped until all pertinent shop drawings are reviewed by the ENGINEER.

2. All equipment having moving parts such as gears, electric motors, etc., and/or instruments shall be properly stored until such time as the equipment is to be installed.

3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.

4. Manufacturer's storage instructions shall be carefully studied by the CONTRACTOR and reviewed with the ENGINEER. These instructions shall be followed and a written record of this kept by the CONTRACTOR.

5. Moving parts shall be rotated a minimum of once weekly to ensure proper lubrication and to avoid metal-to-metal "welding." Upon installation of the equipment, the CONTRACTOR shall start the equipment, at least half load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.

6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment at the time of acceptance.

7. Prior to acceptance of the equipment, the CONTRACTOR shall have the manufacturer inspect the equipment and certify in writing that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a written certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the CONTRACTOR'S expense.

B. The OWNER reserves the right to withhold payment for any materials improperly stored and maintained.

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1.07 PARTIAL UTILIZATION

A. During the course of construction partial occupation and utilization of completed portions of the work may be required.

B. When deemed necessary, the OWNER or the CONTRACTOR may request use of completed work.

1.08 EQUIPMENT WARRANTY

A. The CONTRACTOR shall provide the OWNER a minimum 1 year warranty on all equipment, or a warranty of the length as is specified in the specific equipment section of the Specifications, in accordance with the General Conditions. The warranty period for each item of equipment shall be a minimum of 1 year, or as specified otherwise, from the date of the OWNER'S acceptance of the equipment item.

1.09 ADJUSTMENTS AND CORRECTIONS OF EQUIPMENT AND APPURTENANCES DURING OPERATION

A. Some items of functional nature included in this Contract cannot be tested as to performance and quality at the time of completion of their installation. They must wait for necessary testing and proper performance until such functions are possible during later portions of this Contract. Such testing, specified performance and proper instructions to the OWNER's operators (as to their maintenance and operation) is deemed a portion of this Contract, and payment shall be retained by the OWNER for equipment delivered to the site and for Work completed to cover such service. Such service replacements and performance shall take precedence over expiration of the one year guarantee period.

B. The CONTRACTOR shall expedite the completion of such service by all Suppliers and Subcontractors and shall render competent supervision of such service. The CONTRACTOR shall also expedite the replacement of defective and unaccepted parts and equipment. Unnecessary delay in delivery and installation of corrective parts and equipment may constitute damage to the OWNER for which the CONTRACTOR can be held liable.

1.10 INSTALLING NEW EQUIPMENT IN EXISTING STRUCTURES

A. Where new equipment is planned and/or specified as being installed in existing structures, the CONTRACTOR shall verify all dimensions and locations of existing facilities prior to ordering the new equipment. Existing anchor bolts shall be used when possible, and new equipment shall be fabricated to conform to the existing dimensions, shapes, and locations as required.

END OF SECTION

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# SECTION 01610

# TRANSPORTATION AND HANDLING

## PART 1 - GENERAL

### 1.1. WORK INCLUDED

.

A. Handling and Distribution:

1. The Contractor shall handle, haul, and distribute all materials and all surplus materials on the different portions of the work, as necessary or required; shall provide suitable and adequate storage room for materials and equipment during the progress of the work, and be responsible for the protection, loss of, or damage to materials and equipment furnished by him, until the final completion and acceptance of the work.

2. Storage and demurrage charges by transportation companies and vendors shall be borne by the Contractor.

B. Storage of Materials and Equipment

1. All excavated materials and equipment to be incorporated in the work shall be placed so as not to injure any part of the work or existing facilities and so that free access can be had at all times to all parts of the work and to all public utility installations in the vicinity of the work.

2. Materials and equipment shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining owners, tenants, and occupants.

## PART 2 - PRODUCTS

NOT USED.

## PART 3 - EXECUTION

NOT USED.

END OF SECTION

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# SECTION 01700

# PROJECT CLOSEOUT

## PART 1 - GENERAL

### 1.1. RELATED REQUIREMENTS SPECIFIED ELSEWHERE

.

A. Liquidated Damages: BID PROPOSAL, AGREEMENT AND GENERAL CONDITIONS

B. Cleaning: Section 01710

C. Project Record Documents: Section 01720

### 1.2. SUBSTANTIAL COMPLETION

A. Contractor:
   1. Submit written certification to Engineer that Project is substantially complete.
   2. Submit list of items to be completed or corrected.

B. Engineer will make an inspection within seven days after receipt of certification, together with Owner's and Contractor's Representatives.

C. Should Engineer consider the project substantially complete:
   1. Contractor shall prepare and submit to Engineer a list of items to be completed or corrected, as determined by the inspection.
   2. Engineer will prepare and issue a Certificate of Substantial Completion containing:
      a. Date of Substantial Completion.
      b. Contractor's list of items to be completed or corrected, verified and/or amended by Engineer.
      c. The time within which Contractor shall complete or correct work of listed items.
      d. Time and date Owner will assume possession of project or designated portion thereof.
      e. Responsibilities of Owner and Contractor for:
         i. Insurance
         ii. Utilities
         iii. Operation of mechanical, electrical, and other systems
         iv. Maintenance and cleaning
         v. Security

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f. Signatures of:
i. Contractor
ii. Engineer
iii. Owner

3. Owner occupancy of Project or Designated Portion of Project:
a. Contractor shall:
i. Obtain certificate of occupancy.
ii. Perform final cleaning in accordance with Section 01710.
b. Owner will occupy Project under provisions stated in Certificate of Substantial Completion.

4. Contractor: Complete work listed for completion or correction, within designated time.

D. Should Engineer consider that work is not substantially complete:
1. He shall immediately notify Contractor, in writing, stating reasons.
2. Contractor: Complete work, and send second written notice to Engineer, certifying that Project, or designated portion of Project is substantially complete.
3. Engineer and Owner will re-inspect work.

1.3. FINAL INSPECTION

A. Contractor shall submit written certification that:
1. Contract Documents have been reviewed.
2. Project has been inspected for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents.
4. Equipment and systems have been tested in presence of Engineer and Owner's Representative and are operational.
5. Project is completed and ready for final inspection.

B. Engineer will make final inspection within seven (7) days after receipt of certification.

C. Should Engineer consider that work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.

D. Should Engineer consider that work is not finally complete:
1. He shall notify Contractor, in writing, stating reasons.
2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Engineer certifying that work is complete.
3. Engineer and Owner will re-inspect work.

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1.4. FINAL CLEANING UP

The Work will not be considered as completed and final payment made until all final clean up has been done by the Contractor in a manner satisfactory to the Engineer and Owner. See Section 01710 for detailed requirements.

1.5. CLOSEOUT SUBMITTALS

Project Record Documents: See requirements of Section 01720.

1.6. FINAL APPLICATION FOR PAYMENT

Contractor shall submit final applications for payment in accordance with requirements of GENERAL CONDITIONS (Section 19).

1.7. FINAL CERTIFICATE FOR PAYMENT

A. Engineer will issue final certificate in accordance with provisions of GENERAL CONDITIONS.

B. Should final completion be materially delayed through no fault of Contractor, Engineer may issue a Semi-Final Certificate for Payment.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

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# SECTION 01710

# CLEANING

## PART 1 - GENERAL

### 1.1. WORK INCLUDED

A. During its progress, the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.

B. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, structures, work done under this contract, or elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the project. The ditches, channels, drains, pipes, structures, and any other work shall, upon completion of the work, be left in a clean and neat condition.

C. On or before the completion of the project, the Contractor shall, unless otherwise specifically directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools, and machinery or other construction equipment furnished by him; shall remove, acceptably disinfect, and cover all organic matter and material containing organic in, under, and around privies, hoses and other buildings used by him; shall remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations in a neat and satisfactory condition.

D. The Contractor shall thoroughly clean all materials and equipment installed by him and his subcontractors, and on completion of the project shall deliver it undamaged and in fresh and new appearing conditions.

E. The Contractor shall restore or replace, when and as directed, any public or private property damaged by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk, and landscaping work. Suitable materials, equipment, and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable as work progresses and shall not be left until the end of the contract period.

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1.2. DESCRIPTION

A. Related Requirements Specified Elsewhere:

Project Closeout: Section 01700.

B. On a continuous basis, maintain premises free from accumulations of waste, debris, and rubbish caused by operations.

C. At completion of project, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all sight-exposed surfaces; leave Project clean and ready for occupancy.

1.3. SAFETY REQUIREMENTS.

A. Hazards Control:

1. Store volatile wastes in covered metal containers, and remove from premises daily.
2. Prevent accumulation of wastes which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.

B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not burn or bury rubbish and waste materials on Project site without written permission from the Owner.
2. Do not dispose of volatile wastes such as mineral spirits, oil, or fuel in open drainage ditches or storm or sanitary drains.
3. Do not dispose of wastes in streams or waterways.

PART 2 - PRODUCTS

2.1. MATERIALS

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

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PART 3 - EXECUTION

3.1. DURING CONSTRUCTION

A. Execute cleaning to ensure that grounds and public properties are maintained free from accumulations of waste materials and rubbish.

B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

C. At reasonable intervals during progress of Work, clean site and public properties, and properly dispose of waste materials, debris, and rubbish.

D. Provide on-site containers for collection of waste materials, debris, and rubbish.

E. Remove waste materials, debris, and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

F. The Contractor shall thoroughly clean all materials and equipment installed.

3.2. FINAL CLEANING

A. Employ experienced workmen, or professional cleaners, for final cleaning.

B. The Contractor shall restore or replace existing property or structures as promptly and practicable as work progresses.

END OF SECTION

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# SECTION 01720

# PROJECT RECORD DOCUMENTS

## PART 1 - GENERAL

### 1.1. WORK INCLUDED

The contractor shall obtain from the Engineer one (1) set of blueline prints of the Contract Drawings. These prints shall be kept and maintained in good condition at the project site and qualified representative of the Contractor shall enter upon these prints, from day-to-day, the actual "as built" record of the construction progress. Entries and notations shall be made in a neat and legible manner and these prints shall be delivered to the Engineer upon completion of the construction. APPROVAL FOR FINAL PAYMENT WILL BE CONTINGENT UPON COMPLIANCE WITH THIS PROVISION.

### 1.2. RELATED REQUIREMENTS SPECIFIED ELSEWHERE:

A. Maintain at job site, one copy of:
   1. Contract Drawings
   2. Specifications
   3. Addenda
   4. Reviewed Shop Drawings
   5. Change Orders
   6. Other Modifications to Contract.

B. Store documents in approved location, apart from documents used for construction.

C. Provide files and racks for storage of documents.

D. Maintain documents in clean, dry, legible condition.

E. Do not use record documents for construction purposes.

F. Make documents available at all times for inspection by Engineer and Owner.

### 1.3. MARKING DEVICES

Provide colored pencil or felt-tip pen for all marking.

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1.4. RECORDING

A. Label each document "PROJECT RECORD" in 2-inch high printed letters.

B. Keep record documents current.

C. Do not permanently conceal any work until required information has been recorded.

D. Contract Drawings: Legibly mark to record actual construction:
1. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
2. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
3. Field changes of dimension and detail.
4. Changes made by Change Order or Field Order.
5. Details not on original Contract Drawings.

E. Specifications and Addenda: Legibly mark up each Section to record:
1. Manufacturer, trade name, catalog number, and supplier or each product and item of equipment actually installed.
2. Changes made by Change Order or Field Order.
3. Other matters not originally specified.

F. Shop Drawings: Maintain as record documents; legibly annotate Shop Drawings to record changes made after review.

1.5. SUBMITTAL

A. At completion of project, deliver record documents to Engineer.

B. Accompany submittal with transmittal letter, in duplicate, containing:
1. Date Project Title and Number Contractor's Name and Address
2. Title and Number of each Record Document
3. Certification that each Document as Submitted is Complete and Accurate
4. Signature of Contractor or his authorized Representative.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED.

END OF SECTION

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SECTION 01740

BASIS FOR PAYMENT

KY 509 Bridge Over Little Sextons Creek - WATERLINE RELOCATIONS

PART 1 - GENERAL

All payment for work done under the provisions of this contract shall be in accordance with the basis for payment for the specific items listed herein and in the bid proposal. The item numbers in this section correspond with the item numbers in the bid proposal.

Item 1 Inclusive – Cap Existing Main

Payment for this items shall be made at the unit price bid each and shall include all work and materials necessary for the complete installation, including excavation, bedding, end cap, thrust blocking, backfill, cleanup and seeding in accordance with the Technical Specifications and details.

The cost of all items not specifically listed for separate payment in the proposal shall be included as an incidental expense.

Item 2 - Horizontal Directional Drilling

Payment for this item shall be based on the unit price bid per linear foot, measured in place, as shown on plans, regardless of depth. This item shall include all work and materials necessary to excavate bore pit (including pavement removal and rock excavation) to required depth, install the pipe by HDD method, backfilling pit, seeding, testing, disinfection and cleanup, all in accordance with the Technical Specifications and details.

The cost of all associated items not specifically listed for separate payment in the proposal shall be included as an incidental expense.

Pipe lengths shall be measured in place. Where pipelines diverge, measurement shall be from the center of the pipe main to the end of the diverging line. No deduction in pipe length shall be made for fittings.

Rock drilling is not a separate pay item.

Item 3 – Flush Hydrant Assembly
Payment for this item shall be made at the unit price bid, each installed and shall include all work and materials necessary for the complete installation including excavation, bedding, fittings, valves, box, cover, tapped connection, backfill, clean up and seeding all in accordance with the Technical Specification and details.

The cost of all associated items not specifically listed for separate payment in the proposal shall be included as an incidental expense.

Item 4 - Waterlines - Inclusive

Payment for this item shall be based on the unit price bid per linear foot, measured in

place, as shown on plans, regardless of depth. This item shall include all work and materials necessary to excavate trenches (including pavement removal and rock excavation) to required depth, install bedding as per detail and install the pipe, marking tape and ductile iron mechanical joint fittings, blocking, backfilling, trenching, seeding, testing, disinfection and cleanup, all in accordance with the Technical Specifications and details.

The cost of all associated items not specifically listed for separate payment in the proposal shall be included as an incidental expense.

Pipe lengths shall be measured in place. Where pipelines diverge, measurement shall be from the center of the pipe main to the end of the diverging line. No deduction in pipe length shall be made for fittings.

Rock excavation is not a separate pay item.

Items 5 and 6 Inclusive – Tie new W.L. to existing W.L. **with Wet Tap**

Payment for these items shall be made at the unit price bid each and shall include all work and materials necessary for the complete installation, including excavation, bedding, **tapping** sleeve with valve, backfill, cleanup and seeding in accordance with the Technical Specifications and details.

The cost of all items not specifically listed for separate payment in the proposal shall be included as an incidental expense.

Items 7 - Gate Valves - Inclusive

Payment for this item shall be made at the unit price bid each for the size of gate valve installed and shall include all work and materials necessary for complete installation, including gate valve, bedding, valve box, cover, collar, backfill, clean up and seeding in accordance with the Technical Specifications and details.

The cost of all associated items not specifically listed for separate payment in the proposal shall be included as an incidental expense.

Item 8 – Fiberglass Markers

Payment for this item shall be made at the unit price bid and shall include all work and material necessary for furnishing and installation of the fiberglass markers as shown on the plans and in the details or determined in the field during construction and in accordance with the Technical Specifications.

The cost of all associated items not specifically listed for separate payment in the proposal shall be included as in incidental expense.

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# SECTION 02110

# CLEARING AND GRUBBING

## PART 1 GENERAL

### 1.01 SUMMARY (Not Applicable)

### 1.02 DEFINITIONS

A. Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including down timber, snags, brush, and rubbish occurring in the areas to be cleared.

B. Grubbing

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas.

### 1.03 PAYMENT

A. Cost associated with Clearing and Grubbing shall be incidental to facilities being placed.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

### 3.01 CLEARING

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and shall be trimmed of all branches the heights indicated or directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work.

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## 3.02 GRUBBING

Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

## 3.03 TREE REMOVAL

Where indicated or directed, trees and stumps that are designated as trees shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph GRUBBING. Trees shall be disposed of in an approved manner. All trees must be inspected by the engineer prior to cutting or removal for endangered species of cave bats that may be nesting in the tree bark.

## 3.04 DISPOSAL OF MATERIALS

A. Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations shall be disposed of by the Contractor in an approved manner. The Contractor shall be responsible for compliance with all Federal and State laws and regulations and with reasonable practice relative to the disposal of the material. Disposal of refuse and debris and any accidental loss or damage attendant thereto shall be the Contractor's responsibility.

END OF SECTION

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# SECTION 02202

# ROCK REMOVAL

## PART 1 - GENERAL

### 1.01 WORK INCLUDED

A. All excavation on this project is unclassified. Rock removal is not a pay item.

B. Removal of discovered rock during excavation.

C. Use of explosives for rock removal.

### 1.02 RELATED WORK

A. Section 02221 - Excavation.

### 1.03 REFERENCES

A. NFPA 495 - Code for the Manufacture, Transportation, Storage, and Use of Explosive Materials.

B. Commonwealth of Kentucky Department of Mines and Minerals, Laws, and Regulations Governing Explosives and Blasting.

### 1.04 QUALITY ASSURANCE

A. Seismic Survey Firm: Company specializing seismic surveys with five years documented experience.

B. Explosives Firm: Company specializing in explosives for disintegration of subsurface rock with five years documented experience.

C. Contractor shall conform to all State, Federal, and Local laws, ordinances and regulations in regard to transportation, use, and handling of explosives.

D. Contractor shall employ the above mentioned experts if necessary during blasting, to protect workers, property and public.

### 1.06 SHOP DRAWINGS

A. Submit means and methods under provisions of Section 01300.

B. Indicate proposed method of blasting, delay pattern, explosive types, type of

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blasting mat or cover, and intended rock recovery method.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Rock Definition: Solid mineral material or man made material that cannot be removed with a power shovel or as defined by KDOH specifications.

B. Explosives: Type recommended by explosives firm and required by authorities having jurisdiction.

C. Delay Devices: Type recommended by explosives firm and conforming to State regulations.

D. Blasting Materials: Type recommended by explosives firm and conforming to State regulations.

PART 3 - EXECUTION

3.01 INSPECTION

A. Verify site conditions and note irregularities affecting work of this Section.

B. Beginning work of this Section means acceptance of existing condition.

3.02 ROCK REMOVAL

A. Excavate for and remove rock by a mechanical method.

B. Cut away rock at excavation bottom to form even surface.

C. In utility trenches, excavate to 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.

D. Correct unauthorized rock removal in accordance with backfilling and compaction requirements of this contract.

3.03 ROCK REMOVAL - EXPLOSIVES METHODS

A. If rock is uncovered requiring the explosives method for rock disintegration, notify the Engineer.

B. Advise owners of adjacent buildings or structures in writing prior to setting up seismographs. Describe blasting and seismic operations.

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C. Peak particle velocity will be limited to 4.0 in./sec.

D. Provide seismographic monitoring during progress of all blasting operations, or as required by State regulations.

E. Disintegrate rock and remove from excavation.

3.04 FIELD QUALITY CONTROL

Engineer or his representative shall approve the depth of final rock cut.

3.05 HAUL

No payment will be made separately or directly for haul on any part of the work for removed rock. All haul will be considered a necessary and incidental part of the work, and the cost thereof shall be considered by the Contractor in the contract price for items of the work involved.

END OF SECTION

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# SECTION 02220

# EXCAVATION AND FILLING

## PART 1 - GENERAL

All excavation on this project is unclassified. Rock removal is not a pay item.

### 1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| ASTM D 1557 | (1978; R 1990) Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop |
| ASTM D 2216 | (1990) Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures |
| ASTM D 2487 | (1990) Classification of Soils for Engineering Purposes |
| ASTM D 2922 | (1981; R 1990) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 3017 | (1988) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 4318 | (1984) Liquid Limit, Plastic Limit, and Plasticity Index of Soils |

### 1.2. DEFINITIONS

A. Degree of Compaction

1. Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557, Method D, abbreviated hereinafter as Percent Laboratory maximum Density.

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## PART 2 - PRODUCTS

### 2.1 MATERIALS

A. Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557, Method D, abbreviated hereinafter as percent laboratory maximum density.

B. Satisfactory materials include materials classified in ASTM D 2487 as ML, CL, MH, and CH and shall be free of trash, debris, roots or other organic matter, or stones larger than 3 inches in any dimension.

C. Unsatisfactory materials include materials classified in ASTM D 2487 as Pt, OH, and OL, and any other materials not defined as satisfactory.

## PART 3 - EXECUTION

### 3.1 CLEARING AND GRUBBING

A. Clearing and grubbing is specified in Section 02110 CLEARING AND GRUBBING.

### 3.2 TOPSOIL

A. Topsoil shall be stripped to a depth of 12 inches below existing grade within the designated excavations and grading lines and deposited in storage piles for later use. Excess topsoil shall be disposed as specified for excess excavated material.

### 3.3 EXCAVATION

A. Before any work begins, the Contractor should take sufficient cross-sections to determine the amount of soil removed.

B. Excavation shall conform to the dimensions and elevations indicated and shall include the excavation of the contained landfill and all work incidental thereto. Excavations below indicated depths will not be permitted except to remove unsatisfactory material.

C. Unsatisfactory material encountered below the grades shown shall be removed as directed and replaced with satisfactory material.

D. Satisfactory material removed below the depths indicated without specific direction of the Engineer shall be replaced at no additional cost to the

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Owner to the indicated excavation grade with satisfactory materials excavation. Satisfactory material shall be placed and compacted as specified in paragraph FILLING AND BACKFILLING.

E. Determination of elevations and measurements of approved overdepth excavation of unsatisfactory material below grades indicated shall be done under the direction of the Engineer.

3.4 DRAINAGE AND DEWATERING

A. Drainage
1. Surface water shall be directed away from excavation and construction sites to prevent erosion. Diversion ditches, dikes and grading shall be provided and maintained as necessary during construction.
2. Surface excavated slopes and backfill surfaces shall be protected to prevent erosion and sloughing.
3. Excavation shall be performed so that the site and the area immediately surrounding the site and affecting operations at the site shall be continually and effectively drained.

3.5 SHORING

A. Shoring, including sheet piling, shall be furnished and installed as necessary to protect workers, banks, and utilities.

B. Shoring, bracing, and sheeting shall be removed, as excavations are backfilled, in a manner to prevent caving.

3.6 CLASSIFICATION OF EXCAVATION

A. Excavation will be unclassified regardless of the nature of the materials encountered.

B. Excavation is not a separate pay item.

3.7 BLASTING

A. Blasting will not be permitted.

3.8 EXCAVATED MATERIALS.

A. Satisfactory excavated material required for fill or backfill shall be placed in the proper section of the permanent work required under this section or shall be separately stockpiled if it cannot be readily placed.

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B. Satisfactory material in excess of that required for the permanent work and all unsatisfactory material shall be disposed of in the area designated "Borrow Area" on the drawings.

3.9 SUBGRADE PREPARATION

A. Unsatisfactory material in surfaces to receive fill or in excavated areas shall be removed and replaced with satisfactory materials.

B. The surface shall be scarified to a depth of 6 inches before the fill is started.

C. Sloped surfaces steeper than 1 vertical to 4 horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material.

D. When subgrades are less than the specified density, the ground surface shall be broken up to a minimum depth of 6 inches, pulverized, and compacted to the specified density.

E. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill.

F. Material shall not be placed on surfaces that are muddy, frozen, or contain frost.

G. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, or other approved equipment well suited to the soil being compacted. Material shall be moistened or aerated as necessary.

3.10 CERTIFICATION

A. The subgrade surface shall be inspected in accordance with the following requirements:
   1. Before placing any material over the subgrade, the project engineer shall visually inspect, the exposed surface to evaluate the suitability of the subgrade and ensure that the surface is properly compacted, smooth, uniform, and has positive surface drainage;
   2. Soil subgrade shall be proof-rolled using a minimum 100,000 pound loaded four (4) tire scraper (twenty (20) cubic yard size) or equivalent procedure and equipment approved by the cabinet;
   3. Soil subgrade shall be tested for density and moisture content at a minimum frequency of nine (9) tests per acre. The subgrade shall

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be compacted to a density of at least ninety-two (92) percent of the standard proctor; and

4. Sufficient cross sections shall be taken showing the finished elevation of the completed subgrade, referenced to existing site control.

## 3.11 FILLING AND BACKFILLING

A. Satisfactory materials shall be used in bringing fills and backfills to the lines and grades indicated and for replacing unsatisfactory materials.

B. Satisfactory materials shall be placed in horizontal layers not exceeding 8 inches in loose thickness, or 6 inches when hand-operated compactors are used.

C. After placing, each layer shall be plowed, disked, or otherwise broken up, moistened or aerated as necessary, thoroughly mixed and compacted as specified.

D. Backfilling shall not begin until construction below finish grade has been tested and approved, and the excavation cleaned of trash and debris.

E. Each layer of fill and backfill shall be compacted to not less than the percentage of maximum density of 92% Standard Proctor.

F. During construction, the moisture content of the soil component of the liner system shall be maintained within the range of optimum or above to ensure that the remolded lift attains the required permeability.

G. Approved compacted subgrades that are disturbed by the Contractor's operations or adverse weather shall be scarified and compacted as specified herein before to the required density prior to further construction thereon.

## 3.12 TESTING

A. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Owner.

B. Testing shall be performed by an approved commercial testing laboratory or may be performed by the Contractor subject to approval.

C. Field in-place density shall be determined in accordance with ASTM D 2922. The calibration curves shall be checked and adjusted if necessary by the procedure described in ASTM D 2922, paragraph ADJUSTING CALIBRATION CURVE.

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D. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil.

E. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017.

F. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed by the Engineer.

G. The following number of tests, if performed at the appropriate time, shall be the minimum acceptable for each type of operation.

## 3.13 SPREADING TOPSOIL

A. Areas outside Work Area "A" from which topsoil has been removed shall be topsoiled.

B. The surface shall be free of materials that would hinder planting or maintenance operations.

C. The subgrade shall be pulverized to a depth of 2 inches by disking or plowing for the bonding of topsoil with the subsoil.

D. Topsoil shall then be uniformly spread, graded, and compacted to the thickness, elevations, slopes shown, and left free of surface irregularities.

E. Topsoil shall be compacted by one pass of a cultipacker, roller, or other approved equipment weighing 100 to 160 pounds per linear foot of roller.

F. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to seeding, planting, or proper grading.

## 3.14 PROTECTION

A. Settlement or washing that occurs in graded, topsoiled, or backfilled areas prior to acceptance of the work shall be repaired and grades reestablished to the required elevations and slopes.

END OF SECTION

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# SECTION 02221

# EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS

## PART 1 GENERAL

### 1.01 WORK INCLUDED, EXCAVATION, TRENCHING AND BACKFILLING FOR THE FOLLOWING SYSTEMS

A. Water Systems.

### 1.02 RELATED WORK

A. Section 02202 - Rock Removal

B. Section 02270 - Erosion Control

C. Section 02480 - Seeding

### 1.03 Applicable Publications

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

A. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO T 180 (1986) Moisture-Density Relations of Soils Using a 10-lb. Rammer an 18-in Drop

B. AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)

ASTM D 2487 (1985) Classification of Soils for Engineering Purposes

### 1.04 DEFINITIONS

Degree of Compaction

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in -AASHTO T 180-, Method D.

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## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Satisfactory Materials

Satisfactory materials shall consist of any material classified by -ASTM D 2487- as GW, GP, and SW.

B. Unsatisfactory Materials

Unsatisfactory materials shall be materials that do not comply with the requirements for satisfactory materials. Unsatisfactory materials include but are not limited to those materials containing roots and other organic matter, trash, debris, frozen materials and stones larger than 3 inches, and materials classified in -ASTM D 2487-, as PT, OH, and OL. Unsatisfactory materials also include man-made fills, refuse, or backfills from previous construction.

C. Cohesionless and Cohesive Materials

Cohesionless materials shall include materials classified in -ASTM D 2487- as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are non-plastic.

D. Rock - See Section 02202

E. Unyielding Material

Unyielding material shall consist of rock and gravelly soils with stones greater than 3 inches in any dimension or as defined by the pipe manufacturer, whichever is smaller.

F. Unstable Material

Unstable material shall consist of materials too wet to properly support the utility pipe, conduit, or appurtenant structure.

G. Select Granular Material

Select granular material shall consist of well-graded sand, gravel, crushed gravel, crushed stone or crushed slag composed of hard, tough and durable particles, and shall contain not more than 10 percent by weight of material passing a No. 200 mesh sieve and no less than 95 percent by weight passing the l-inch sieve. The maximum allowable aggregate size

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shall be 1 inch, or the maximum size recommended by the pipe manufacturer, whichever is smaller.

H. Initial Backfill Material

Initial backfill shall consist of select granular material or satisfactory materials free from rocks 3 inches or larger in any dimension or free from rocks of such size as recommended by the pipe manufacturer, whichever is smaller. When the pipe is coated or wrapped for corrosion protection, the initial backfill material shall be free of stones larger than 2 inches in any dimension or as recommended by the pipe manufacturer, whichever is smaller.

## PART 3 EXECUTION

### 3.01 EXCAVATION

Excavation shall be performed to the lines and grades indicated. Rock excavation shall include removal and disposition of material. Earth excavation shall include removal and disposal of material not classified as rock excavation. During excavation, material satisfactory for backfilling shall be stockpiled in an orderly manner at a distance from the banks of the trench equal to 1/2 the depth of the excavation, but in no instance closer than 2 feet. Excavated material not required or not satisfactory for backfill shall be removed from the site. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation, and any water accumulating therein shall be removed to maintain the stability of the bottom and sides of the excavation.

### 3.02 Trench Excavation

The trench shall be excavated as specified for applicable utility. Trench walls below the top of the pipe shall be sloped, or made vertical, and of such width as recommended in the manufacturer's installation manual. Where no manufacturer's installation manual is available, trench walls shall be made vertical. Trench walls more than 4 feet high shall be shored, cut back to a stable slope, or provided with equivalent means of protection for employees who may be exposed to moving ground or cave in. Vertical trench walls more than 4 feet high shall be shored. Trench walls which are cut back shall be excavated to at least the angle of repose of the soil. Special attention shall be given to slopes which may be adversely affected by weather or moisture content. The trench width below the top of pipe or cable shall not exceed 24 inches plus pipe outside diameter (O.D.) for pipes of less than 24 inches inside diameter and shall not exceed 36 inches plus pipe outside diameter for sizes larger than 24 inches inside diameter. Where recommended trench widths are exceeded, redesign, stronger pipe, or special installation procedures shall be

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utilized by the Contractor. The cost of redesign, stronger pipe, or special installation procedures shall be borne by the Contractor without any additional cost to the Owner.

3.03 Bottom Preparation

The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Bell holes shall be excavated to the necessary size at each joint or coupling to eliminate point bearing. Stones of 3 inches or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, shall be removed to avoid point bearing.

3.04 Removal of Unyielding Material

Where over-depth is not indicated and unyielding material is encountered in the bottom of the trench, such material shall be removed 4 inches below the required grade and replaced with suitable materials as provided in paragraph "BACKFILLING AND COMPACTION."

3.05 Removal of Unstable Material

Where unstable material is encountered in the bottom of the trench, such material shall be removed to the depth directed and replaced to the proper grade with select granular material as provided in paragraph "BACKFILLING AND COMPACTION." When removal of unstable material is required due to the fault or neglect of the Contractor in his performance of the work, the resulting material shall be excavated and replaced by the Contractor without additional cost to the Government.

3.06 Jacking, Boring, and Tunneling

Unless otherwise indicated, excavation shall be by open cut except that sections of a trench may be jacked, bored, or tunneled if, in the opinion of the Engineer, the pipe, cable, or duct can be safely and properly installed and backfill can be properly compacted in such sections.

3.07 Stockpiles

Stockpiles of satisfactory and wasted materials shall be placed and graded. Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed by rubber-tired equipment, excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled

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material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no additional cost to the Government.

3.08 Placement of facilities (pipe, cable, ducts) may be on solid good clean compacted earth. See details.

3.09 BACKFILLING AND COMPACTION

Backfill material shall consist of satisfactory material, select granular material, or initial backfill material as required. Backfill shall be placed in layers not exceeding 6 inches loose thickness for compaction by hand operated machine compactors, and 8 inches loose thickness for other than hand operated machines, unless otherwise specified. Each layer shall be compacted to at least 95 percent maximum density for cohesionless soils and 90 percent maximum density for cohesive soils, unless otherwise specified.

3.10 Trench Backfill

Trenches shall be backfilled to the grade shown. The trench shall be backfilled to 2 feet above the top of pipe prior to performing the required pressure tests. The joints and couplings shall be left uncovered during the pressure test.

A. Replacement of Unyielding Material

Unyielding material removed from the bottom of the trench shall be replaced with select granular material or initial backfill material.

B. Replacement of Unstable Material

Unstable material removed from the bottom of the trench or excavation shall be replaced with select granular material placed in layers not exceeding 6 inches loose thickness.

C. Bedding and Initial Backfill

Bedding of bank run sand or #9 gravel 4" thick shall be placed under water lines. Initial backfill material shall be placed and compacted with approved tampers to a height of at least one foot above the utility pipe or cable. The backfill shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to ensure thorough compaction of the fill under the haunches of the pipe.

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D. Final Backfill

The remainder of the trench, shall be filled with satisfactory material. Backfill material shall be placed and compacted as follows:

Sidewalks, Turfed or Seeded Areas and Miscellaneous Areas: Backfill shall be deposited in layers of a maximum of 12-inch loose thickness, and compacted to 85 percent maximum density for cohesive soils and 90 percent maximum density for cohesionless soils. Compaction by water flooding or jetting will not be permitted. This requirement shall also apply to all other areas not specifically designated above.

END OF SECTION

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# SECTION 02270

# EROSION CONTROL, SEDIMENTATION, AND CONTAINMENT OF CONSTRUCTION MATERIALS

## PART I - GENERAL

### 1.01 WORK INCLUDED

A. The Contractor shall do all work and take all measures necessary to control soil erosion resulting from construction operations, shall prevent the flow of sediment from the construction site, and shall contain construction materials (including excavation and backfill) within his protected working area so as to prevent damage to the adjacent wetlands.

B. The Contractor shall not employ any construction method that violates a rule, regulation, guideline, or procedure established by Federal, State, or local agencies having jurisdiction over the environmental effects of construction.

C. Pollutants such as chemicals, fuels, lubricants, bitumen, raw sewage, and other harmful waste shall not be discharged into or alongside of any body of water or into natural or man-made channels leading thereto.

## PART 2 - PRODUCTS

### 2.01 METHODS OF CONSTRUCTION

A. The Contractor shall use any of the acceptable methods necessary to control soil erosion and prevent the flow of sediment to the maximum extent possible. These methods shall include, but not be limited to, the use of water diversion structures, diversion ditches, and settling basins.

B. Construction operations shall be restricted to the areas of work indicated on the Drawings and to the area, which must be entered for the construction of temporary, or permanent facilities. The Engineer has the authority to limit the surface area of awardable earth material erodible by clearing and grubbing, excavation, borrow and fill operations, and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of the wetlands and adjacent watercourses. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, or other control devices or methods as necessary to control erosion.

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C. Excavated soil material shall not be placed adjacent to the wetlands or watercourses in a manner that will cause it to be washed away by high water or runoff. Earth berms or diversions constructed to intercept outlets shall be stable or shall be stabilized by means acceptable to the Engineer. If for any reason construction materials are washed away during the course of construction, the Contractor shall remove those materials from the fouled areas as directed by the Engineer.

D. For work within easements, all materials used on construction such as excavation, backfill, roadway and pipe bedding and equipment, shall be kept within the limits of the easements.

E. The Contractor shall not pump silt-laden water from trenches or other excavations into the wetlands or adjacent watercourses. Instead, silt-laden water from his excavations shall be discharged within areas surrounded by baled hay or into sediment traps to ensure the only sediment-free water is returned to the watercourses. Damage to vegetation by excessive watering or silt accumulation in the discharge area shall be avoided.

F. Prohibited construction procedures include, but are not limited to, the following:

1. Dumping of spoil material into any streams, wetlands, surface waters, or unspecified locations.
2. Indiscriminate, arbitrary, or capricious operation of equipment in wetlands or surface waters.
3. Pumping of silt-laden water from trenches or excavations into surface waters or wetlands.
4. Damaging vegetation adjacent to our outside of the construction area limits.
5. Disposal of trees, brush, debris, paints, chemicals, asphalt products, concrete curing compounds, fuels, lubricants, insecticides, wash-water from concrete trucks or hydro-seeders, or any other pollutant in wetlands, surface waters, or unspecified locations.
6. Open burning of debris from the construction work.

G. Any temporary working roadways required shall consist of clean fill approved by the Engineer. In the event fill is used, the Contractor shall take every precaution to prevent the fill from mixing with native materials of the site. All such foreign materials shall be removed from the site following construction.

## 3.02 EROSION CHECKS

The Contractor shall furnish and install baled hay or straw erosion checks in all locations indicated on the Drawings, surrounding the base of all deposits of stored

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excavated material outside of the disturbed area, and where indicated by the Engineer. Checks, where indicated on the Drawings, shall be installed immediately after the site is cleared and before trench excavation is begun at the location indicated. Checks located surrounding stored material shall be located approximately 6 feet from that material. Bales shall be held in place with two 2-inch by 2inch by 4-foot wooden stakes. Each bale shall be butted tightly against the adjoining bale to preclude short-circuiting of the erosion check.

END OF SECTION

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# SECTION 02480

# SEEDING, FERTILIZING AND MULCHING

## PART 1 - GENERAL

### 1.01 CONDITIONS

A. General provisions of CONTRACT DOCUMENTS apply to this section.

### 1.02 DESCRIPTION OF WORK

A. Provide labor, material, equipment and services necessary for proper and complete seeding, fertilizing and mulching.

B. Seed all new and disturbed areas not otherwise indicated to be sodded.

### 1.03 QUALITY ASSURANCE

A. The intent of these Specifications is to require the Contractor to provide, in all areas to be seeded, fertilized and mulched, a smooth uniform turf of the grasses specified free from bare spots, eroded areas, weeds or other deficiencies. Acceptance by the Engineer is conditional upon compliance with this intent after initial growing season.

B. Areas outside limits of construction, damaged by work under this Contract, shall be repaired as required to match existing conditions. This includes borrow areas for excavation.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

A. Mulch: Mulch shall be straw or hay mulch, tacked with asphalt,; straw or hay mulch fixed in place with disk land packers or disk harrows; or fiber mulch applied simultaneously with grass seed and fertilizer by the use of hydro-seeding machinery.

1. Straw shall be stalks from oats, wheat, rye, barley, or rice that are free from noxious weeds, mold, or other objectionable material. Straw shall be in an air-dry condition suitable for placing with blower equipment.

2. Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowing, free from noxious weeds, mold or other objectionable material. Hay shall be in an air-dry condition and suitable

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for placing with blower equipment.

3. Wood cellulose fiber for use with hydraulic application or grass seed and fertilizer shall consist of specially prepared wood cellulose fiber or a combination of wood cellulose and recycled newsprint fibers, processed to contain no growth or germination - inhibiting factors and dyed an appropriate color to facilitate visual metering of the application of materials. On an air-dry weight basis, the wood cellulose fiber shall contain a maximum of 12 percent moisture, plus or minus 3 percent at the time manufactured. The combination of wood cellulose and recycled newsprint fibers shall contain a maximum of 10 percent moisture plus or minus 3 percent at the time of manufacture. the pH range for either mix shall be between 4.5 and 6.5.

B. Commercial fertilizer shall be a complete commercial fertilizer of 10-10-10 formula, uniform in composition, dry and free flowing. Fertilizer which becomes caked or otherwise damaged making it unsuitable for use will not be accepted.

C. Limestone shall be finely pulverized (calcium carbonate) containing equivalent of at least 45% calcium oxide, and so pulverized that the residue on #30 and #200 sieves is not more than 0.5% and 15% respectively.

D. Seed Mixture

1. Lawn seed shall be guaranteed by dealer and distributed as follows:

50% Fine Leaf Falcon Fescue
20% Kentucky Bluegrass "Ken-Blue"
30% Perennial Ryegrass

## 2.02 SOIL IMPROVEMENTS

A. Soil Test

A soil test shall be performed for pH, chemical analysis and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of turf specified. Cost of soil tests is not a pay item and is an incidental cost to the Contractor.

B. Lime

Lime shall be applied at the rate recommended by the soil test. Lime shall be incorporated into the soil to a minimum depth of 4 inches of may be incorporated as part of the tillage operation.

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C. Fertilizer

Fertilizer shall be applied at the rate recommended by the soil test. Fertilizer shall be incorporated into the soil to a minimum depth of 4 inches or may be incorporated as part of the tillage or hydro-seeding operation.

2.03 SEEDING AND MULCHING

A. Planting Seasons and Conditions: Planting shall not be done when the ground is frozen, snow-covered, or in an unsatisfactory condition for planting. Spring seeding season shall be between February 15 and April 15. Fall seeding shall be between August 15 and October 15.

Seeding seasons may be extended only at direction of Engineer.

B. Seeding

1. Seed shall be broadcast uniformly by approved sowing equipment at the rate of 5 pounds per 1,000 square feet over a designated area. One half of the seed shall be sown in one direction, and the remainder shall be sown at right angles to the first sowing. The seed shall be covered to an average depth of (0.2-0.4) inch by means of spike tooth harrow, cultipaker, or other approved device. Seed shall not be broadcast when winds are above 10 miles per hour.
2. Drill seeding shall be accomplished using approved equipment such as cultipaker seeders and grass seed drills. The seed shall be drilled uniformly to an average depth of (0.2-0.4) inch at a rate of 5 pounds per 1,000 square feet.
3. When hydro-seeding, the (seed and fertilizer), (seed, fertilizer, and approved mulch material) shall be mixed in the required amount of water to produce a homogeneous slurry and then uniformly applied. Wood cellulose or straw mulch shall be added after the seed and fertilizer have been thoroughly mixed. Lime, when applied hydraulically, shall be a single, separate operation.
4. Immediately after seeding, the entire area shall be firmed with a roller not exceeding 90 pounds for each foot of roller width. If seeding is performed with a cultipacker-type seeder or if seed is applied in combination with hydro-mulching, rolling will not be required.

C. Mulching (Straw and Asphalt)

1. All seeded areas indicated or directed by the Engineer shall be mulched with a straw and asphalt mat. Mulching shall follow seeding operation not later than 48 hours. The asphalt mat will not be required on areas adjacent to buildings, sidewalks or concrete curbs.

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2. Straw and asphalt mat shall be applied at rate of two and one-half (2½) tons of straw per acre, and 200 gallons of asphalt per acre. Asphalt shall either be emulsified RS-1 grade or cutback RC-1 grade. Method of application may be:

   (a) by spreading straw evenly over seeded area after which asphalt tie-down is sprayed over straw in a solid pattern, or;
   (b) by applying mat in one operation by a jet type mulch spreader in which straw and asphalt are sprayed in mixture evenly over area.

2.04 SEED PROTECTION ON SLOPES

A. Cover seeded slopes where grade is 3:1 or greater with jute matting. Roll matting down over slopes without stretching or pulling.

B. Lay matting smoothly on soil surface, boring top end of each section in narrow 6-inch trench. Leave 12 inches overlap from top roll over bottom roll. Leave 4 inches overlap over adjacent section.

C. Staple outside edges and overlaps at 36-inch intervals.

D. Lightly dress slopes with topsoil to ensure close contact between matting and soil.

E. In ditches, unroll matting in direction of flow. Overlap ends of strips 6 inches with upstream section on top.

2.05 WATERING

Immediately following seeding, the Contractor shall water areas thoroughly, including subgrade. The prepared area is to be watered a minimum of two times per week until it has been accepted. This will not be required if sufficient rain occurs during the week.

2.06 CLEAN-UP

Soil, peat or similar material which has been brought onto paved areas within or outside construction limit by hauling operations or otherwise shall be removed promptly, keeping these areas clean at all times. Upon completion of seeding, all excess soil, stones and debris which have not previously been cleaned up shall be removed from site or disposed of as directed by the Engineer. All attended areas shall be prepared for final inspection.

2.07 MAINTENANCE

Maintenance shall begin immediately following last operation of seeding and shall continue until turf is formally accepted. Maintenance shall include

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watering, weeding, cultivating, mulching, regular mowing or seeded areas, and removal of dead materials.

2.08 INSPECTION FOR ACCEPTANCE

A. Inspection of work of this section to determine completion , exclusive of possible replacement of seed, will be made by the Engineer upon written notice requesting such inspection submitted at least ten (10) days prior to anticipated date of inspection and provided that an 80% minimum coverage per square foot for all seeded areas has been established. Contractor shall guarantee, at the time of compliance with the intent of this Specification described herein. This guarantee shall apply to all permanent seeding performed in conjunction with project, regardless of type protection used or season in which seeding performed.

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

C. When unavoidable damage occurs after date project is declared complete and before inspection previously described, then payment will be made at original contract unit prices for additional seeding and protection work ordered by the Engineer. Unavoidable damage may result from slides, vehicular traffic, fires, and deluges. Failure of seed to sprout and grow will not be considered unavoidable damage.

D. From time seeding and protection work begins until date project is declared complete, keep all seeded areas in good condition at all times. Damage to seeded areas or to mulch materials shall be promptly repaired as directed. All work and materials necessary to protect, maintain and restore seeded areas during life of contract shall be performed at no additional cost to Owner, except additional work caused by changes in project by the Engineer.

E. When it becomes necessary to disturb previously seeded areas at direction of the Engineer, payment for a reasonable amount of additional work, as determined by the Engineer, will be made at original contract unit price. No payment will be made for additional work due to changes made for benefit of Contractor, nor will payment be made for corrective work required because Contractor has failed to properly coordinate his entire erosion control schedule thus causing previously seeded areas to be disturbed by operations that could have been performed prior to seeding.

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F. After inspection, Contractor will be notified in writing by Engineer or acceptance of all work of this Section and Contractor will be notified in writing if there are deficiencies of requirements for completion of work. Replacements, maintenance or repair work remaining to be done shall be subject to re-inspection before acceptance.

2.09 PLANT WARRANTY AND REPLACEMENT

The Contractor shall warrant 80% coverage per square foot of established grass area for duration of one (1) growing season after final acceptance of seeding by Owner. Seed shall be alive and in satisfactory growth at end of warranty period. Owner will be responsible for all maintenance necessary to keep grass alive and healthy between time lawns are accepted and end of warranty period. Basic needs of lawn during this period are for adequate water and protection from insects and other similar pests. Should contractor find lawn is not receiving proper maintenance at any time prior to end of the warranty period, he shall advise Engineer and Owner immediately in writing so corrective measures may be initiated.

END OF SECTION

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# SECTION 02701

# POLYVINYL CHLORIDE PIPE
# (WATER MAINS)

## PART 1 GENERAL

1.01

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

B. Pressure class shall be 200 psi with a standard dimension ration (SDR) of 21 or 250 psi with SDR of 17 as called for on plans and of the size noted on the Plans.

C. Molecular oriented PVC pressure pipe (PVCO) may be substituted as an "or equal" for **six inch Class 200 PVC pipe only.**

1.02 RELATED SECTIONS

A. Section 01300 Submittals

B. Section 01600 Material & Equipment

## PART 2 PRODUCTS

2.01 MOLECULAR ORIENTED PIPE

A. Molecular oriented PVC pressure pipe, PVCO, shall conform to latest revisions of ASTM F-1483. Pipe must be manufactured from rigid poly(vinyl chloride) compound having a cell classification of 1245-B in conformance with ASTM D-1784 having a hydrostatic design stress (HDS) of 2,000 psi. The finished PVCO pipe shall have a HDS of 3,550 psi minimum. The pipe shall have steel pipe (IPS) O.D.'s. PVCO pipe shall have an operating pressure of 200 psi and shall be as manufactured by Uponor-ETI or approved equal.

2.02 JOINTS

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

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2.03 ANCHORING ASSEMBLIES

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

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

PART 3 EXECUTION

3.01 INSTALLATION

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

3.02 FITTINGS

A. All fittings for 3" and above PVC pipe shall be ductile iron push-on joints Class 250 tar coated outside, cement lined inside in accordance with ANSI/AWWA Specifications C110/A21.10, C111/A21.11 or ductile iron fittings in accordance with AWWA C153.

B. All fittings for PVC pipe smaller than 3" shall be PVC push-on socket type with rubber gasket, SDR 21, 200 psi based on SDR working pressure. Fittings shall meet all requirements of ASTM Specifications D3139 and shall be suitable for a working pressure of 200 psi unless the water line is designated Class 250. If the water line is designated Class 250 then fittings must be Class 250.

3.03 TIE-INS TO EXISTING LINES

A. The tie-ins to existing lines are not to be considered as wet (hot) taps. The Contractor, in conjunction with the Owner may shut the specific line down for prearranged minimum periods, to make these connections. However, the Contractor will be required to disinfect and flush the affected lines to assure proper levels of chlorine residual.

END OF SECTION

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# SECTION 02703

# STREAM/LAKE CROSSINGS

## PART 1 GENERAL

### 1.01 WORK INCLUDED

A. The Contractor shall furnish all labor, materials and equipment required to install a Stream/Lake Crossing or Crossings as shown on the plans and as specified herein. This specification shall only apply to those crossings so designated on the drawings. All other small crossings shall require concrete encasement only.

B. The Stream Crossing pipe may either be high density polyethylene (HDPE) or ductile iron, as specified hereinafter or as called for on drawings. It is the intent of these specifications that both types of pipe shall be considered "equal" and the Contractor is advised to bid the type of pipe that would result in the lowest total bid. Stream Crossing pipe under this Section shall not require concrete encasement.

C. The type and selection of methods and procedures used to install the Stream/Lake Crossings shall be approved by the Engineer.

D. Crossings under this Section or concrete encased crossings shall be constructed in accordance with standard details or as directed by the Engineer. The stream/lake crossing shall conform with the specific detail drawings and these specifications.

## PART 2 PRODUCTS

### 2.01 DUCTILE IRON PIPE AND FITTINGS

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

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

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C. Appropriate transition fittings shall be provided to connect the stream crossing pipe to the proposed PVC water line pipe on either side of stream/lake. Transition fittings will not be allowed in the stream crossing proper. Excavation shall be made if necessary, to assure that the pipe may be laid to the curvature of the stream bed. Concrete blocking of transition joints will be required.

2.02 POLYETHYLENE PIPE AND FITTINGS

A. Polyethylene pipe for the Stream Crossing shall utilize thermal butt-fusion for jointing, all suitable for a 267 psi working water pressure, with an SDR of 9. Pipe shall be N.S.F. approved, and manufactured by Plexco, Nipak, or "Driscopipe" by Phillips Petroleum or equal as approved by the Engineer. The pipe must be furnished with an inside diameter equal to or greater than the size shown on the Drawings for the proposed water main.

B. Appropriate transition fittings shall be provided to connect the Stream Crossing pipe to the proposed PVC water line pipe on either side of the stream/lake. Fittings will not be allowed in the stream crossing proper. Excavation shall be made, if necessary, to assure that the pipe may be bent to the curvature of the stream bed. As a minimum, a polyethylene molded flange adapter and ductile iron convoluted back up ring will be required with appropriate concrete blocking.

PART 3 EXECUTION

3.01 PIPE LAYING

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

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

3.02 JOINTING

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

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## 3.03 DREDGING AND BACKFILLING (REGULAR STREAM CROSSING)

A. The ditch for the pipe shall be dredged or excavated to provide a minimum of 30" cover below the stream bed in regular stream crossing. When used, payment for concrete encasement will be made separately at the unit price bid for this item. The trench shall be backfilled with trench excavated material, free from roots, wood, or other objectionable materials, and shall be approved by the Engineer. Where acceptable material from the excavation or dredging is insufficient to complete the backfill, the Contractor shall furnish additional acceptable material as required to complete the work. Such additional material shall be furnished and installed by the Contractor incidental to the various bid items and shall not be measured for separate payment.

## 3.04 PLACEMENT (STREAM CROSSING)

A. The intent of these specifications and the accompanying drawings is to lay the pipe on the bottom of the stream as shown on the drawings.

END OF SECTION

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# SECTION 02720

# PRESSURE PIPELINES INSTALLATION

## PART 1 GENERAL

### 1.01 WORK INCLUDED

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

B. The specifications for installing pressure mains are intended to conform with the latest revision of AWWA C600, "Installation of Ductile Iron Water Mains and their Appurtenances," and/or AWWA C605 "Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water". The Engineer shall require compliance with those specifications the same as if they were totally incorporated herein, except where these specifications direct otherwise.

## PART 2 PRODUCTS - NOT USED.

## PART 3 EXECUTION

### 3.01 HANDLING AND STORAGE OF MATERIALS

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

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

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

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damage by freezing.

3.02 INSPECTION AND RESPONSIBILITY FOR MATERIAL

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

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

3.03 INSTALLATION OF PRESSURE PIPELINES

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

B. Proper implements, tools, and facilities shall be provided and used by the Contractor for the safe and convenient performance of the work. All pipe, fittings, valves, and hydrants shall be carefully lowered into the trench piece by piece by means of a derrick, ropes, or other suitable tools or equipment in such a manner as to prevent damage to pipe main materials and protective coatings and linings. Under no circumstances shall pipe main materials be dropped or dumped into the trench.

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

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

E. As each length of pipe is placed in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade. The pipe shall be secured in place with approved backfill material tamped under it except at

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the bells. Precautions shall be taken to prevent dirt from entering the joint space.

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

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

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

## 3.04 PLACING PIPELINE FITTINGS

A. Pipeline fittings, plugs and caps shall be furnished and installed of the type indicated and at the location shown on the construction drawings or as directed by the Engineer. It will be the responsibility of the Contractor to furnish and install all proper size pipe bends for both horizontal and vertical deflections that are required to construct the pressure main to the line and grade as shown on the construction drawings or as set by the Engineer. The fittings, plugs, and caps shall be set and joined to the pipe in the manner heretofore specified for installation and the cost of same is considered incidental costs included in pipeline bid items.

## 3.05 ANCHORAGE

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

## 3.06 TESTING PRESSURE MAINS

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

B. The Contractor shall furnish the pump, pipe connection, temporary testing plugs and caps, if required, all necessary apparatus including the pressure gauges and meters and a supply of approved water. The Contractor shall make all necessary taps into the lines. The Contractor shall be responsible for all labor and equipment

necessary to conduct the tests, including excavating and backfilling the test pit at the locations approved by the Engineer.

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

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

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

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

G. No pipe installation will be accepted if the amount of leakage is greater than specified in Table 7, Allowable Leakage, AWWA C600, or calculated by the following equation:

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

Where

L = allowable leakage, gallons per hour.
S = Length of pipe to be tested, ft.
D = Nominal diameter of pipe, in.
P = Average test pressure, psig.

## 3.07 DISINFECTION OF WATER MAINS

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A. All new water mains and repaired sections or extensions to existing water mains shall be chlorinated before being placed in service so that a chlorine residual of not less than ten (25) ppm remains in the water in the test section after twenty-four (24) hours standing in the pipe. The procedures for disinfecting the water mains and the chemicals to be used shall be in accordance with the requirements of AWWA C651 latest revision.

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

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

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

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

E. The chlorinating agent shall be injected into the beginning of the new pipeline extension or any valved section through a corporation stop inserted by the Contractor. The Contractor shall supply the proper type chemical pump, piping and make up water to inject the solution into the main. The application shall be the amount necessary to apply 50 ppm of chlorine to the test section. The amount of one (1) percent chlorine water solution required to give 25 ppm chlorine in 1,000 feet of various size water mains is as follows:

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

F. Water from the existing distribution system shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall produce at least twenty five (25) ppm, after twenty-four (24) hours standing. This may be expected with an application of fifty (50) ppm, although some conditions may require that more valves be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

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

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

3.08 PRESSURE PIPELINES NOT INSTALLED IN TRENCH

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

3.09 SPECIAL REQUIREMENTS FOR PIPELINE CONSTRUCTION ON STATE RIGHT OF WAY (Also see Section 1580)

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A. Pressure pipelines to be laid on backside of all entrance culverts unless otherwise specified.

B. All pressure pipelines to be laid on **backside of ditch line** unless otherwise specified.

C. All slip areas to be open cut, backfilled and tamped at a maximum of 150' sections.

D. All pressure pipeline crossing of highway culverts (RCP, CMP, Box Culverts) shall have a minimum of 1 foot clearance above or below the culvert.

E. Efforts have been made to indicate accurate locations of some existing structures, piping and utilities. However, the contractor shall familiarize himself with the site and other existing conditions and notify the engineer of any discrepancies between information depicted by the construction drawings and actual field conditions which would significantly alter the design intent of the construction drawings prior to commencing his construction operations. Dimensions of existing structures and/or site restrictions are approximate. It is the contractor's responsibility to obtain and confirm all dimensions and elevations of existing structures and topography in the field necessary for his construction operation.

F. The contractor shall use all possible care during excavation on this project so as not to disturb or damage any existing utility or structure not scheduled for demolition whether depicted or not in the construction drawings. Any damage to the aforementioned items caused directly or indirectly by the contractor shall be repaired or replaced by the contractor at no cost to the owner to a condition equal to or better than that which existed prior to being damaged.

G. The contractor's attention is called to the presence of existing utilities in close proximity to the project site. The contractor is advised to carefully review the project requirements regarding utility reallocations. The contractor can call 1-800-752-6007 a minimum of two and no more than ten business days prior to excavation for information on the location of existing underground utilities which subscribe to the Before-U-Dig (BUD) Service. Additionally it is the contractor's responsibility to contact <u>all</u> existing utility owners and have them field locate their existing utilities prior to any construction activities.

H. Unless otherwise noted, all buried pipes shall have **30" minimum cover** as measured from finished grade to the outside surface of the pipe. In State Highway Right-of-Way the waterlines shall have 42" cover.

I. All bores under state highways right-of way shall be a minimum of 42" depth under bottom of ditch line to top of the proposed casing pipe on both sides of the highway.

J. There shall be no blasting within state right-of-way without written consent from

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the Kentucky Transportation Cabinet.

K. Care shall be taken by the contractor to avoid cracking or breaking the bituminous paving. The contractor at no cost to the Dept. of Highways shall repair all damage to the existing paving caused by the contractor's operation. Paving protection shall be accomplished by the use of rubber and street padded machinery or other approved equipment well suited for this type of construction.

L. During construction, all embankments, refills and excavations shall be kept shaped and drained by the contractor. Ditches and drains along the highways shall be maintained in such a manger as to drain effectively at all times.

M. All roadways and driveways within the work limits of state right-of-ways shall be refilled to the natural surface of the ground with approved material and methods. The material shall be placed and compacted to smoothness suitable for traffic. The contractor shall note that all private businesses and residences along the route of the proposed water main must have access to their properties at all time during construction. Additionally, the contractor shall replace existing entrance pipes, retaining walls, catch basins, fences and other property improvements, ditches, guardrail, signs, storm drains, etc. that are damaged by construction unless said facilities are specifically shown to be removed. In particular, all drainage ditches shall be restored to a condition equal or better than existed prior to construction.

N. Concrete thrust or "kicker" blocks shall be installed in all pressurized lines at intersections and changes of direction to resist forces acting upon the pipeline.

O. Concrete anchors shall be provided when the pipe slope exceeds twenty percent.

P. Sewers shall be laid at least ten feet horizontally from any existing or proposed water main. This distance shall be measured edge to edge. If field conditions do not allow this condition to be met, then the sewer shall be construction of mechanical joint ductile iron pipe (pressure tested to 150 psi) and encased in concrete. Sewers shall cross under water mains with a minimum of eighteen inches of separation between the crown of the sewer and in the invert of the water main. If field conditions are such that this separation can not be maintained, the sewer shall be constructed of mechanical joint ductile iron pipe which shall be pressure tested to 150 psi. The ductile iron pipe must be centered on the crossing so that the joints are at least ten feet on either side of the crossing.

Q. Traffic control is to be as per MUTCD standards.

R. Reclamation is to be accomplished as per the general notes of the approved encroachment permit provided by the Kentucky Dept. of Highways.

S. Valve locations cannot be shown with precision of the supplied mapping. Valve locations shall be coordinated with the resident inspector prior to installation.

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T. Numerous drop box inlets are located next to some of the state and federal highways within the project limits. These inlets have concrete aprons that are 9' x 9'. Many of the inlets are set against the backside of the rock cut along the highway. The contractor may do one of two things. (1) He may either saw cut the backside of the Surface drain and without damaging the drainage box install the pipe. If the drainage box does get damaged in any way then the contractor will restore the drainage box and surface drain back to its original condition. (2) The contractor shall install the force main under the culvert pipe. If the culvert pipe is damaged in any fashion then the contractor shall replace the portion that is damaged to its original condition.

U. Proposed utilities must go under or around existing highway culvert pipes. Utilities may not be placed over existing highway culverts. Minimum separation between culvert pipe and force main is five feet.

V. Track vehicles must be isolated from pavement with an earth cushion or protective material. In no event shall track vehicles be operated directly on paved surfaces.

END OF SECTION

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# SECTION 02722

# DUCTILE IRON PIPE

## PART 1 - GENERAL

### 1.1 RELATED SECTIONS

A. 01300 – Submittals

B. 01600 - Material and Equipment

## PART 2 - PRODUCTS

### 2.1 PIPE

A. Ductile cast iron pipe shall conform to the American Standard for "Ductile Iron Pipe Centrifugally Cast in Metal Molds for Water or Other Liquids", ASA A21.5 (AWWA C151).

B. The pipe shall be Thickness Class 350, unless otherwise noted.

### 2.2 JOINTS

A. Mechanical joints, bell and spigot joints and flange joints for ductile iron pipe in sizes from 2-inches through 48-inches in diameter shall conform to all of the dimensions, shapes and requirements of ASA A21.10 (AWWA C110), "Cast Iron Fittings, 2-Inches through 48-Inches, for Water and Other Liquids." The mechanical joint shall also conform in all respects to ASA A21.11 (AWWA C111), "Rubber Gasket Joints for Cast Iron Pressure Pipe and Fittings."

B. Push-on joints shall be a single rubber gasket joint designed to be assembled by the positioning of a continuous, molded, rubber ring gasket in an annular recess in the pipe and forcing of the plain end of the entering pipe into the socket, thereby compressing the gasket radially to the pipe to form a positive seal. The gasket and the annular recess shall be so designed and shaped that the gasket is locked in place against displacement as the joint is assembled. The push-on type joint shall conform to the requirements of ASA A21.10 (AWWA C110) and ASA A21.11 (AWWA C111) where applicable.

C. Where ductile iron pipe with ball and socket type joints are specified, they shall be of the mechanical gland type. Provisions shall be made for longitudinal expansion and contraction with a positive stop against disengagement of the joint. Up to fifteen (15) degrees angular deflection

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shall be accommodated without leakage and without decrease in full diameter of pipe.

## 2.3 FITTINGS

A. Cast iron or ductile iron fittings in sizes 2-inches through 48-inches for mechanical joints, bell and spigot joints and flange joints shall conform to all the requirements of ASA A21.10 (AWWA C110), "Cast Iron Fittings, 2-Inches through 48-Inches, for Water and Other Liquids," and to the requirements of ASA A21.11 (AWWA C111), "Rubber Gasket Joints for Cast Iron Pressure Pipe and Fittings," for mechanical joints and push-on type joints. Push-on joints for cast iron fittings shall be as described in Section 2 of this section.

B. The cast iron or ductile iron fittings in sizes larger than 12-inch shall have a pressure rating of 150 psi unless the proposal sheets and/or the construction drawings stipulate that 250 psi cast iron fittings are required.

C. Unless specifically described on the proposal sheets and/or construction drawings, the cast iron fittings may be supplied in gray iron or ductile iron.

## 2.4 COATINGS FOR DUCTILE IRON PIPE AND FITTINGS

A. The ductile iron pipe and cast iron or ductile iron fittings for water service shall be furnished with cement mortar lining in accordance with ASA Specifications A21.4 (AWWA C104), "Cement Mortar Lining for Cast Iron Pipe and Fittings." The lining will be 1/16-inch thick for pipe sizes 4-inches through 12-inches in diameter and 3/32-inch thick for sizes 14-inch through 24-inches in diameter. A bituminous seal coat shall be applied to the lining surface immediately following the lining operation to prevent loss of moisture and insure proper curing of the cement mortar. The outside of the iron pipe shall be furnished with a protective coating as outlined in Section 09900 "PROTECTIVE COATINGS AND PAINTING."

B. All cast iron or ductile iron fittings and ductile iron pipe which will carry sewage shall be completely coated inside with cement lining and outside with a bituminous coating.

C. All ductile iron pipe and fittings not installed in a trench condition shall not be coated with a coal-tar pitch on the outside. The pipe and fitting shall be coated in accordance with the Section 09900, "PROTECTIVE COATINGS AND PAINTING".

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## 2.5 MISCELLANEOUS JOINTING MATERIAL

A. Poured joints for bell and spigot pipe, if required for connection to existing pressure mains, shall be constructed of a yarning or packing material and lead. The lead for caulking material shall contain not less than 99.73% pure lead. Impurities shall not exceed the following limits:

| | |
|---|---|
| Arsenic, Antimony & Tin Together | 0.015% |
| Copper | 0.08% |
| Zinc | 0.002% |
| Iron | 0.25% |
| Bismuth | 0.25% |
| Silver | 0.02% |

B. The producer's name or the mark of the lead industries shall be clearly cast or stamped upon each piece of lead.

C. Yarning or packing material shall consist of one of the following: (1) molded or tubular rubber rings, or (2) treated paper rope. The material shall be free of oil, tar or greasy substances.

D. Victaulic couplings for ductile iron pipe shall consist of malleable iron housing-clamps in two (2) or more parts, a single C-shaped rubber gasket and two (2) or more track-head steel bolts as required to assemble the housing clamps. The coupling shall be of the proper type to encircle the outside diameter of the ductile iron pipe as specified. The malleable iron in the segmental casting shall conform to ASTM A47. The track-type oval neck bolts shall conform to ASTM A183. The rubber gasket shall be Grade "R" natural rubber.

E. Ductile iron pipe and fittings to be joined with victaulic couplings shall be furnished with shoulders to engage the entire inner circumference of the housing-clamp. The outside surface of the pipe between the shoulder and the pipe end must be smooth and free from deep pits or swells to provide a leaktight seal for the victaulic gasket.

F. Compression sleeve couplings for plain end ductile iron pipe shall consist of one cylindrical steel middle ring with a pipe stop, two (2) resilient wedge-shaped gaskets, two (2) steel follower rings and a set of high strength steel track-head bolts. The number of bolts furnished will depend on the diameter of the couplings.

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## PART 3 – EXECUTION

### 3.1 ANCHORING ASSEMBLIES

A. Anchoring assemblies for setting valves, fire hydrants, and special bends shall consist of two (2) mechanical joint cast iron or ductile iron gland fittings cast integrally with the pipe nipple.

B. The anchor assembly fittings shall have a laying length of fourteen (14) inches. Anchoring pipe shall be used where long lengths of pipe are required to anchor fire hydrants. Anchoring pipe may be furnished with regular anchoring glands cast with the pipe or with a ring gland which will allow free movement of the standard mechanical joint tee and anchoring piece for fire hydrant installations where applicable.

### 3.2 JOINTING PIPE

A. Joints for buried cast iron or ductile iron pressure main shall be mechanical joint, rubber compression type (push-on joint), poured bell and spigot or victaulic. Cast iron or ductile iron joints within structures may also be flange type or compression sleeve type as shown on the construction drawings. The joints shall be made in the following manner.

B. Mechanical Joint - The mechanical joint shall conform to the requirements of AWWA A21.11, "Rubber Gasket Joints for Cast Iron Pressure Pipe and Fittings." All surfaces that come in contact with the rubber gasket shall be brushed thoroughly with a wire brush just prior to assembly to remove all rust or foreign material. The clean surface and the rubber gasket shall then be brushed with soapy water. The iron gland shall then be placed on the spigot end with the lip extension facing the joint. The rubber gasket shall then be slipped on the pipe with the thick end toward the gland. The spigot end of the pipe shall then be pushed into the bell seat after which the rubber gasket shall be forced into its retaining space in the bell. Care shall be taken to assure an even seat all around the inner surface of the bell. The gland shall be moved into place for bolting; the bolts shall be inserted and the nuts made up tightly with the fingers only.

C. The normal range of bolt torques to be applied and length of wrench to produce that torque to the standard cast iron bolts in a joint are as follows:

| Size of Bolt Inches | Range of Torque Ft.-Lbs | Length of Wrench Inches |
|---|---|---|
| 3/4 | 60 - 90 | 10 |
| 1 | 70 - 100 | 12 |
| 1-1/4 | 90 - 120 | 14 |

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D. The gland shall be brought up toward the pipe flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket when tightening bolts. It shall be done by partially tightening the bottom bolt first, then the top bolt, next the bolts at either side, and last the remaining bolts. This process shall be repeated until all bolts are within the specified range of torque. If effective sealing is not attained at the maximum torque, the joint shall be disassembled and reassembled after thorough cleaning. The bolts shall not be overstressed to compensate for poor assembly.

E. Rubber Seal Type Joint (Push-On Joint) - The push-on type joint shall conform to the requirements of AWWA A21.11, "Rubber Gasket Joints for Cast Iron Pressure Pipe and Fittings." Before assembly of the rubber seal type joint, the inside of the bell and the rubber gasket shall be wiped clean with a cloth. The gasket should then be placed in the groove of the bell in the manner that conforms to the contour of the bell. A thin film of special lubricant, of the type recommended by the manufacturer of the pipe, is then applied to the inside of the gasket by brush or hand.

F. The plain end of the pipe shall be wiped clean and placed in approximate alignment with the bell of the pipe. The joint is then made up by exerting sufficient force on the entering pipe so that its plain end is moved past the gasket until it makes contact with the base of the socket. Pipe eight (8) inches in diameter and larger shall be socketed by fork tools or jacks.

G. The spigot ends of field cut pipe shall be tapered back one-eighth (1/8) inch at an angle of about thirty (30) degrees to the barrel of the pipe with a coarse file or portable grinder. All sharp or rough edges that may injure the rubber gasket shall be removed in this operation.

H. Bell and Spigot Joints (used only for Connections to Existing Bell and Spigot Piping - The bell and spigot end of the pipe and/or fitting shall be wiped clean before assembly. The spigot end should then be centered in the bell and the pipe forced home to the back of the bell at the correct line and grade and securely held until the joint is completed.

I. After the spigot end of the pipe or fitting has been properly seated in the bell of the next pipe or fitting with a uniform annular space around the entire spigot end, yarning material shall be driven tightly against the inside base of the bell with suitable yarning tools.

J. A space of not less than two and one-quarter (2-1/4) inches shall be left in the bell for lead joints in pipe having a nominal diameter of twenty (20) inches or less. The space shall be not less than two and one-half (2-1/2)

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inches for 24-inch, 30-inch, and 36-inch diameter pipe and three (3) inches for pipe larger than 36-inch diameter.

K. Lead should be heated in a melting pot kept in easy reach of the joint to be poured and shall be brought to a proper temperature so that when stirred it will show a rapid change of color. Before pouring, all scum shall be removed. Each joint shall be made with one continuous pour filling the entire joint space with solid lead. Spongy or imperfectly filled joints shall be burned out and re-poured.

L. The joint runner shall fit snugly against the face of the bell and the outside of the pipe. It shall be dammed with clay to form a pouring lip to provide for filling the joint flush with the face and to the top of the bell.

M. After the lead has cooled to the temperature of the pipe, lead joints shall be caulked with pneumatic or hand tools operated by competent workmen, until such joints are thoroughly compacted and watertight. The finished joint shall show a hard and even hammered surface overall. Care shall be taken not to overstrain the bells during caulking.

N. Flanged Joints - The flanged joints shall conform to the requirements of AWWA A21.10, "Cast Iron Fittings, 2-Inches through 48-Inches, for Water and Other Liquids." Flanged joints shall be assembled with bolts and flat ring gaskets of the size and number as specified for "Cast Iron Pipe Flanges and Flanged Fittings," ASA B16.1 for Class 125. The construction drawings will show the details of ASA B16.lb, Class 250 flange assemblies, if such are required. Stud or tap bolts shall be furnished when shown on the construction drawings, and when required to complete special assemblies. All exposed bolts, heads, and nuts shall be coated with two (2) coats of asphaltum or other approved metal coating after the joint has been completed.

O. Restrained Joints - Special anchorage shall include the use of mechanical joint anchoring fittings, couplings and pipe or positively restrained push-on type pipe and fittings which allow for deflection at the joint after assembly, the equal of "Super-Lock" manufactured by the Clow Corporation. No reduction in pipe wall thickness from that specified shall be permitted in connection with a restrained joint.

## 3.3 DEFLECTION OF DUCTILE IRON PIPE

Whenever it is desirable to deflect mechanical-joint or push-on joint pipe in order to form a long radius curve, the amount of the deflection shall not exceed the maximum limits shown for the respective type pipe.

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TABLE 1

Maximum Permissible Deflection in Laying Mechanical-Joint Pipe

| Size Of Pipe In Inches | Maximum Permissible Deflection Per Length - Inches 12-Ft. Length | 16-Ft. Length | 18-Ft. Length | 20-Ft. Length |
|---|---|---|---|---|
| 6 | 18 | 24 | 27 | |
| 8 | 13 | 18 | 20 | |
| 10 | 13 | 18 | 20 | |
| 12 | 13 | 18 | 20 | 22 |
| 16 | 9 | 12 | 13-1/2 | 15 |
| 20 | 7-1/2 | 10 | 11 | 12 |
| 24 | 6 | 8 | 9 | 10 |

TABLE 2

Maximum Permissible Deflection in Laying Push-On-Joint Pipe

| Size Of Pipe In Inches | Maximum Permissible Deflection Per Length - Inches 12-Ft. Length | 16-Ft. Length | 18-Ft. Length | 20-Ft. Length |
|---|---|---|---|---|
| 6 | 12 | 17 | 19 | 21 |
| 8 | 12 | 17 | 19 | 21 |
| 10 | 12 | 17 | 19 | 21 |
| 12 | 12 | 17 | 19 | 21 |
| 16 | 7-1/2 | 10 | 11 | 12 |
| 20 | 7-1/2 | 10 | 11 | 12 |
| 24 | 7-1/2 | 10 | 11 | 12 |

END OF SECTION

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# SECTION 02940

# TEMPORARY SILT AND EROSION CONTROL

## PART 1 GENERAL

### 1.01 SCOPE

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

B. A written silt control plan shall be prepared and submitted to the Owner for approval before start of construction.

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

### 1.02 RELATED SECTIONS

A. 01600 - Materials and Equipment

## PART 2 PRODUCTS

### 2.01 STRAW OR HAY BALE SILT CHECK

A. This silt check shall be constructed with straw or hay bales firmly bound by twine and solidly staked to remain in place, as shown on the Standard Details.

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

## PART 3 EXECUTION

### 3.01 MEASUREMENT AND PAYMENT

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

END OF SECTION

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# SECTION 03419

# CONCRETE ENCASEMENT AND CONCRETE CRADLE

## PART 1 GENERAL

### 1.01 RELATED SECTIONS

A. 01300 - Submittals

B. 01600 - Materials and Equipment

C. 01410 - Testing Laboratory Services

D. 03300 - Concrete

## PART 2 PRODUCTS

NOT USED.

## PART 3 EXECUTION

### 3.01 CONCRETE ENCASEMENT

A. Buried pipelines shall be encased in 2,500 psi concrete where shown on the construction drawings or to the extent and/or at other locations as determined by the Project Manager.

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

### 3.02 CONCRETE CRADLE

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

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

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## 3.03 MEASUREMENT AND PAYMENT

A. The payment for concrete encasement shall include furnishing and placing the concrete encasement. The Contractor shall be paid for the number of lineal feet of encasement constructed at the unit price on the Bid Sheets.

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

END OF SECTION

# SECTION 05800

# BORING & JACKING AND COVER PIPE

## PART 1 GENERAL

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

### 1.01 RELATED SECTIONS

A. 01300 - Submittals

B. 01600 - Material and Equipment

## PART 2 PRODUCTS

### 2.01 STEEL PIPE

A. Where designated on the construction drawings, the steel pipe shall be fusion welded steel pipe, Grade "B" with no coating. It shall conform to the requirements of ASTM 139. The wall thickness shall be Schedule 40 for pipe up to 4-inches in diameter and 0.250 inch wall thickness for larger sizes, unless railroad specification require a greater thickness. See paragraph 3.06 for diameter of casing required.

### 2.02 NESTABLE CORRUGATED METAL PIPE

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

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

### 2.03 TUNNEL LINER PLATES

A. Tunnel liner plates where shown on the construction drawings shall be hot dripped galvanized steel of the thickness (gauge) and section modulus shown on the construction drawings. The plates shall be formed from steel meeting the requirements of ASTM 139, Grade "B". Individual liner plates shall be made of one piece of metal, provided with flanges from both longitudinal and circumferential joints. The joints shall have sufficient bolt holes to fully develop the strength of the individual liner plate and so spaced in each liner plate that liner

plates of similar curvature will be interchangeable and readily handled in the tunnel. Liner plates shall be of a design that when bolted together no opening shall exist large enough to permit inflow of granular material. Liner plates will be accurately curved to suit the tunnel cross section and when bolted together, the finished casing pipe shall be full round with the nominal diameter to the neutral axis as specified on the proposal sheets and/or construction drawings. Grouting plugs shall consist of a 2-inch standard half-pipe couplings welded or tapped into a hole in the liner plate and furnished with a cast iron plug for closure. They will be of the same material as the liner plate and furnished with a cast iron plug for closure. The spacing of the grouting plugs will be as specified on construction drawings. Bolts, heads, and nuts shall be square and of the same size.

## PART 3 EXECUTION

### 3.01 INSTALLING COVER PIPE

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

B. The annular space between the cover pipe and the contained carrier pipe shall be filled with grout or with granular materials unless otherwise specified on the construction drawings or approved by the Engineer.

### 3.02 INSTALLATION BY BORING

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

### 3.03 INSTALLATION BY JACKING

A. The Contractor will provide an approach pit for the jacking operation, excavated so the jacking face is a minimum of three (3) feet above the pipe. This open face should be shored securely to prevent displacement of the embankment. The pit shall include a backstop of sufficient size to take the thrust of the jack. The guide

rails that support the pipe as it enters the bore shall be accurately placed to line and grade. The entire approach pit shall be sheeted.

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

## 3.04 INSTALLATION BY TUNNELING

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

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

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

## 3.05 MEASUREMENT AND PAYMENT

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

## 3.06 CASING PIPE SCHEDULE (WATER AND SEWER LINES)

| Carrier Pipe Nominal Diameter | Minimum I.D. of Casing Pipe for Water and Sewer Lines | Minimum I.D. of Casing Pipe for Vitrified Clay Sewer Lines |
|---|---|---|
| PVC, ABS, C.I. & D.I. (B&S) | | C.I. & D.I. (M.J.) |
| | *- - - IN INCHES - - -* | |
| 2 | 4 | - |
| 3 | 9 | 12 | - |
| 4 | 10 | 14 | - |
| 6 | 12 | 14 | 14 |
| 8 | 16 | 18 | 18 |
| 10 | 18 | 20 | 20 |
| 12 | 20 | 22 | 22 |
| 14 | 22 | 24 | 28 |
| 15 | 24 | - | - |
| 16 | 26 | 26 | - |
| 18 | 28 | 28 | 32 |
| 20 | 28 | 30 | - |
| 21 | 30 | - | 38 |
| 24 | 34 | 34 | 40 |
| 27 | 38 | - | 42 |
| 30 | 42 | - | - |
| 33 | 45 | - | - |
| 36 | 48 | - | 54 |
| 39 | 54 | - | - |
| 42 | 57 | - | - |

END OF SECTION

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# SECTION 05801

# HORIZONTAL DIRECTIONAL DRILLING REQUIREMENTS

## PART 1 - GENERAL

### 1.1. WORK INCLUDED

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

### 1.2. QUALITY ASSURANCE

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

### 1.3 SUBMITTALS

A. Work Plan: Prior to beginning work, the Contractor must submit to the Engineer a work plan detailing the procedure and schedule to be used to execute the project. The work plan should include a description of all equipment to be used, down-hole tools, a list of personnel and their qualifications and experience (including back-up personnel in the event that an individual is unavailable), list of subcontractors, a schedule of work activity, a safety plan (including MSDS of any potentially hazardous substances to be used), traffic control plan (if applicable), an environmental protection plan and contingency plans for possible problems. Work plan should be comprehensive, realistic and based on actual working conditions for this particular project. Plan should document the thoughtful planning required to successfully complete the project.

B. Equipment: Contractor will submit specifications on directional drilling equipment. Equipment shall include but not be limited to: drilling rig, mud system, mud motors (if applicable), down-hole tools, guidance system, rig safety systems. Calibration records for guidance equipment shall be included.

Specifications for any drilling fluid additives that Contractor intends to use or might use will be submitted.

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

## PART 2 – EQUIPMENT REQUIREMENTS

### 2.1 GENERAL

A. The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the core and pull-back the pipe, a drilling fluid mixing, delivery and recovery system of sufficient capacity to successfully complete the crossing, a drilling fluid recycling system to remove solids from the drilling fluid so that the fluid can be reused, a guidance system to accurately guide boring operations, a vacuum truck of sufficient capacity to handle the drilling fluid volume, trained and competent personnel to operate the system.

B. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.

### 2.2 DRILLING SYSTEM

A. Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations. The rig shall be grounded during drilling and pull-back operations. There shall be a system to detect electrical current from the drill string and an audible alarm, which automatically sounds when an electrical current is detected.

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

C. Mud Motors (if required): Mud motors shall be of adequate power to turn the required drilling tools.

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

## 2.3 GUIDANCE SYSTEM

A. A Magnetic Guidance System (MGS) or proven gyroscopic system shall be used to provide a continuous and accurate determination of the location of the drill head during the drilling operation. The guidance shall be capable of tracking at all depths up to one hundred feet and in any soil condition, including hard rock. It shall enable the driller to guide the drill head by providing immediate information on the tool face, azimuth (horizontal direction), and inclination (vertical direction). The guidance system shall be accurate to +/-2% of the vertical depth of the bore hole at sensing position at depths up to one hundred feet and accurate within 1.5 meters horizontally.

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

## 2.4 DRILLING FLUID (MUD) SYSTEM

A. Mixing System: A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid. Mixing system shall continually agitate the drilling fluid during drilling operations.

B. Drilling Fluids: Drilling fluid shall be composed of clean water and appropriate clay additive. Water shall be from an authorized source with a pH of 8.5 – 10. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No potentially hazardous material may be used in drilling fluid.

C. Delivery System: The mud pumping system shall be capable of delivering the drilling fluid at a constant minimum pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and conveyed to the drilling fluid recycling system. A berm, minimum of 12” high, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system to prevent spills into the surrounding environment. Pumps and/or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage and recycling facilities.

D. Drilling Fluid Recycling System: The drilling fluid recycling system shall separate sand, dirt and other solids from the drilling fluid to render the drilling fluid re-usable. Spoils separated from the drilling fluid will be stockpiled for later use or disposal.

2.5 OTHER EQUIPMENT

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

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

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

PART 3 – OPERATIONS

3.1 GENERAL

A. The Engineer must be notified 48 hours in advance of starting work. The directional bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made.

B. The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract. It shall be the responsibility of Engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.

3.2 PERSONNEL REQUIREMENTS

All personnel shall be fully trained in their respective duties as part of the direction drilling crew and in safety. A responsible representative who is thoroughly familiar with the equipment and type work to be performed, must be in direct charge and control of the operation at all times. In all cases the supervisor must be continually present at the job site during the actual directional bore operation. The Contractor shall have a sufficient

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number of competent workers on the job at all times to insure the directional bore is made in a timely and satisfactory manner.

3.3 DRILLING PROCEDURE

A. Site Preparation: Prior to any alterations to work-site, Contractor shall photograph or video tape entire work area, including entry and exit points. One copy of which shall be given to Engineer and one copy to remain with Contractor for a period of one year following the completion of the project. Work-site as indicated on drawings, within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas.

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

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

D. Safety: Contractor shall adhere to all applicable state, federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to Engineer.

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

F. Pilot Hole: Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100’. In the event that pilot does deviate from bore path more than 5% of depth in 100’, Contractor will notify Engineer and Engineer may require Contractor to pull-back and re-drill from the location along bore path before the deviation. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a March funnel and then wait another 30 minutes. If mud fracture or return loss continues, Contractor will cease operations

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and notify Engineer. Engineer and Contractor will discuss additional options and work will then proceed accordingly.

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

H. Pull-Back: After successfully reaming bore hole to the required diameter, Contractor will pull the pipe through the bore hole. In front of the pipe will be a swivel and reamer to compact bore holes. Once pull-back operations have commenced, operations must continue without interruption until pipe is completely pulled into bore hole. During pull-back operations Contractor will not apply more than the maximum safe pipe pull pressure at any time. In the event that pipe becomes stuck, Contractor will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck, Contractor will notify Engineer. Engineer and Contractor will discuss options and then work will proceed accordingly.

## 3.4 PIPE TESTING

Following successful pull-back of pipe, Contractor will hydro-test pipe using potable water. A calibrated pressure recorder will be used to record the pressure during the test period. This record will be presented to Engineer. After successful completion of hydro-test, pipe will be pigged dry.

## 3.5 SITE RESTORATION

Following drilling operations, Contractor will de-mobilize equipment and restore the work-site to original condition. All excavations will be backfilled and compacted to 95% of original density. Landscaping will be subcontracted to a local professional landscaping company.

## 3.6 RECORD KEEPING, AS-BUILTS

Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to Engineer at completion of project. As-built drawings shall be completed by the Contractor and certified as to accuracy by Contractor.

END OF SECTION

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# SECTION 15020

# GATE VALVES

## PART 1 GENERAL

### 1.01 SUMMARY

A. Gate valves for buried pipelines shall be iron body, bronze mounted, resilient-seated gate valves with non-rising stems having either parallel or inclined seats in accordance with AWWA C509, "Resilient-Seated Gate Valves for Water and Sewerage Systems."

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

### 1.02 SUBMITTALS

A. Manufacturer's Data:

1. Material and component data.
2. Performance data.
3. Product warranties.

B. Submit in accordance with Section 01300.

### 1.03 RELATED SECTIONS

A. 01600 - Materials and Equipment.

B. 01610 - Transportation and Handling

## PART 2 PRODUCTS

### 2.01 OPERATING NUTS

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

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## 2.02. HANDWHEELS

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

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

## 2.03 HORIZONTAL MOUNTING

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

## 2.04 BYPASS VALVES

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

| Valve Diameter - Inches | Bypass Diameter - Inches |
|---|---|
| 16-20 | 3 |
| 24-30 | 4 |
| 26-42 | 6 |
| 48 | 8 |

## 2.05 RISING STEM VALVES

Outside screw and yoke rising stem valves shall conform to all of the requirements of AWWA C509 except for the rising stem mechanism. The OS and Y valves shall have a rugged cast iron yoke machined to provide accurate stem

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alignment. The OS and Y valves shall be furnished with handwheels. OS and Y valves shall only be installed where shown on the drawings.

2.06 UNDERWRITERS VALVES

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

PART 3 EXECUTION

3.01 SPECIAL DETAILS

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

3.02 SETTING GATE VALVES

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

3.03 CHAIN OPERATORS

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

3.04 SPARE PARTS

The Contractor shall furnish the Owner one (1) valve rebuild/maintenance kit for each size and type of valve. Each Contractor shall also furnish the Owner one (1) 'T' type valve wrench.

END OF SECTION

# SECTION 15070

# BLOW-OFF VALVE ASSEMBLY

## PART I GENERAL

### 1.01 SUMMARY

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

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

### 1.02 SUBMITTALS

A. Manufacturer's Data:

1. Material and component data.
2. Performance data.
3. Product warranties.

B. Submit in accordance with Section 01300

### 1.03 RELATED SECTIONS

A. 01300 - Submittals

B. 01600 - Materials and Equipment

C. 01610 - Transportation and Handling

## PART 2 PRODUCTS

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

B. Do <u>not</u> use a corporation stop for this connection.

C. The gate valve for the blow-off connection shall be a AWWA type gate valve with adjustable valve box, same size as water line with two inch operating nut, mechanical joint connections Mueller A-2380-8 or equal as approved by the Engineer. The gate valve and the 90° elbow riser fitting

must be securely anchored with concrete to prevent movement.

D. The hydrant shall be model number 78 Mainguard hydrant as manufactured by the Kupferle Foundary Company or Engineer approved equal.

E. All pipe beyond the gate valve shall be galvanized iron pipe, Schedule 40, with Class 150 malleable iron fittings, or Class 200 PVC with a cap at end of pipe riser. Pipe and PVC fittings shall be same size as main line.

F. The flush valve enclosure shall be constructed of an 18" diameter by 30" depth concrete, or PVC meter box as approved by the Engineer.

G. The cover shall be of cast iron construction, 4" deep with a non-recessed lid, with cast letters "WATER" and a pentagon lock nut Mueller H-10310, or equal as approved by the Engineer.

H. A cast iron flap valve, Neenah #R-5004 or approved equal, shall be installed with stainless steel screen on each blowoff assembly.

## PART 3 EXECUTION

A. The cost for the gate valve and other listed appurtenances herein and/or on detail and supplied with blow-off valve assembly shall be included in unit price of blow-off valve assembly. No separate payment will be made for gate valves used with blow-off valves.

END OF SECTION

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# SECTION 15080

# STANDARD SERVICES

## PART 1 GENERAL

### 1.01 SUMMARY

A. The work to be performed under this section shall include all labor, materials, equipment, excavation, backfill and testing necessary for the proper installation of all service connections. Details of service installations is shown in the Standard Details Section of the drawings.

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

C. The service shall include: A service clamp, corporation stop, service pipe, meter setting equipment, meter box and cover. If called for on the drawings or directed by the Engineer, a pressure reducing valve may be required.

### 1.02 RELATED SECTIONS

A. 01300 - Submittals

B. 01600 - Materials and Equipment

C. 01610 - Transportation

## PART 2 PRODUCTS

### 2.01 SERVICE CLAMP

All service clamps shall be single-strap type, Ford S70 furnished with neoprene gaskets cemented in place. Clamps shall be of the proper size for the pipe with which they are to be used. Clamps shall have a tapered AWWA thread, and shall be suitable for a minimum working water pressure of 200 PSIG. Clamps shall be as manufactured by the Ford Company or equal as approved by the Engineer.

### 2.02 CORPORATION STOP

All taps for service connections shall be made in the upper half of the main with

equipment designed for this purpose. No tap shall be closer than one foot from any joint in the main. Corporation stops shall be of the appropriate size for each service. Unless noted otherwise, all services shall be 3/4 inch. Corporation stops shall have a male AWWA threaded inlet, and an outlet suitable for connection to the service pipe. Corporation stops shall be 110 compression connection, Ford Catalog No. F-1002 Pack Joint or equal, if PVC Service Pipe is specified. If polybutlyene service pipe is specified, Ford Catalog No. F1000 or equal shall be utilized. Insert stiffeners of proper length shall be provided with corporation stop if plastic pipe is used.

2.03 SERVICE PIPE

Service pipe shall be Class 267, polyethylene, N.S.F. approved. Service pipe shall run from the corporation stop to the inlet of the meter setting equipment. Service pipe for standard services shall be jacked or driven under paved roads without benefit of steel casing. Open trenches will not be permitted. Should the Contractor chose to use steel casing, it shall be done at no additional cost to the Owner. The jacking, boring, or pushing of service lines under state, county, or private roads or driveways is not a pay item. The unit price bid for service pipe shall include costs for jacking, pushing or boring service pipe as an incidental expense.

2.04 METER BOX AND COVER

A. A meter box with cover shall be provided for each service and shall be as near the property line as possible and shall be located as directed by the Engineer. The meter box shall be concrete pipe (Class III), extruded ribbed PVC (0.450 inch minimum wall thickness), or polyethylene (0.300 inch wall thickness) construction. The size shall be 18" in diameter by 24" deep unless otherwise specified or required by the meter size.

B. The meter box cover shall be of cast iron construction, with a recessed lid, with cast letters "WATER METER". The cover shall be RUSSCO model LC218 or equal as approved by the Engineer.

C. Meter boxes and covers shall be set with backfill neatly compacted in place. In yards and other maintained areas, the top of the meter box cover shall be 1/2 inch to 1 inch above original grade, otherwise 2 inches above original grade.

2.05 METER SETTING EQUIPMENT

A. The meter setting equipment shall consist of a copper meter yoke, with an inlet and outlet suitable for connection to the service pipe specified. The meter yoke shall be provided with a plain stop. Unless otherwise specified or required for the service, the yoke shall accept a 5/8 inch by 3/4 inch meter as

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specified below. A 3/4 inch by 5 foot long section of the specified service pipe shall be installed on the customer side of the meter. The cost of this service pipe "pigtail" shall be included with the unit price bid for meter setting.

B. Copper meter yokes shall have angle ball valve inlet, double check valve outlet and 7" rise. Regular meter yokes shall be Ford VBHH72-7W-44-33 or approved equal. If the meter setting is to include an individual PRV, the tandem yoke shall be Ford TVBHH72-7W-44-33 or approved equal.

C. Meter yokes shall be supplied with two (2) end connections with baskets per meter setting. End connections shall be Ford Pack Joint or equal for 3/4" CTS or as required based upon type of service pipe used. Insert stiffeners (of approved length) shall be furnished and installed for each inlet and outlet meter setting service pipe connection.

2.06 PRESSURE REDUCING VALVE (INDIVIDUAL)

When called for on the drawings or when directed by the Engineer, the Contractor shall install a pressure reducing valve, with strainer, equal to the size of the service. This valve shall be placed inside the meter box according to the standard drawings. Pressure reducing valves shall be A.W. Cash Company, No. E24U or Watts Catalog No. U5-B, or approved equal.

PART 3 EXECUTION

NOT USED

END OF SECTION

SME: 19001

# SECTION 15085

# DISPLACEMENT TYPE DOMESTIC WATER METERS
# (5/8", 3/4" or - 1" Size)

## PART 1 GENERAL

### 1.01 SUMMARY

The work to be performed under this section shall include furnishing water meters to the Owner for their installation.

### 1.02 RELATED SECTIONS

A. 01300 - Submittals

B. 01600 - Materials and Equipment

## PART 2 PRODUCTS

### 2.01 TYPE

A. Furnish Magnetic Drive, Sealed Register, Positive Displacement Oscillating Piston Type Cold Water Meters.

B. Size and Length

Unless specified otherwise on the drawings, meters shall be 5/8" x 3/4" and must conform to American Water Works Standard C-700 as most recently revised. Meters shall be Badger RCDL 25 Bronze or approved equal.

### 2.02 CASES

A. All Meters shall have a non-corrosive Water Works bronze outer case with a separate measuring chamber which can be easily removed from the case. All meters shall have cast on them, in raised characters, the size and direction of flow through the meter. Case Iron frost bottoms, or bronze bottoms shall be provided on 5/8", 3/4" and 1". All main cases shall be guaranteed against defects in materials and workmanship for twenty-five (25) years from date of shipment.

B. All external bolts and washers shall be of corrosion resistant material and be easily removed from the main case.

### 2.03 REGISTERS - HERMETICALLY SEALED

The register must be of straight reading type and have a large test or sweep hand. It shall read in gallons of volume. All reduction gearing shall be contained

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in a permanently hermetically sealed, tamperproof enclosure made from a corrosion resistant material and will be secured to the upper main case by means of a locking device located in the interior of the meter so the register cannot be removed externally. The sealed register shall be guaranteed against defects in materials and workmanship for fifteen (15) years from date of shipment.

2.04 MEASURING CHAMBER

A. The measuring chamber shall be of Water Works bronze or a suitable synthetic polymer and shall not be cast as part of the main case. All piston assemblies shall be interchangeable in all measuring chamber assemblies of the same size. The chamber's bottom plate shall be held in place without the use of fasteners.

B. There shall be no stuffing box. The motion of the piston will be transmitted to the sealed register through the use of a direct magnetic drive without any intermediate mechanical coupling.

C. All meters must be provided with a corrosion resistant strainer which is easily removable from the meter without the meter itself being disconnected from the pipeline.

D. Change gears will not be allowed to calibrate the meter. All registers of a particular registration and meter size shall be identical and completely interchangeable.

E. Meters shall conform to current AWWA test flow and accuracy standards.

F. Meters shall operate up to a working pressure of 150 pounds per square inch, without leakage or damage to any parts. The accuracy shall not be affected when operating at this pressure due to possible distortion.

PART 3 EXECUTION

3.01 GUARANTEE

A. Quotations shall be accepted only from those companies who are actively engaged in the manufacturing of all parts for their meter in the United States of America and who have a minimum of five years of satisfactory operating experience with their meter. All meters will be guaranteed against defects in materials and workmanship for a period of one (1) year from date of shipment.

END OF SECTION

Kentucky Transportation
Cabinet Project:

# *N O T I C E*

## DEPARTMENT OF THE ARMY

## CORPS OF ENGINEERS

## NATIONWIDE SECTION 404 PERMIT AUTHORIZATION

## DEPARTMENT FOR ENVIRONMENTAL PROTECTION

## KENTUCKY DIVISION OF WATER

## SECTION 401 WATER QUALITY CERTIFICATION

**PROJECT DESCRIPTION: Bridge Replacement**
**Clay County, KY**
**KY 577 over Little Sexton Creek**
**KYTC Item No. 11-10004**

The Sections 404 and 401 activities for this project have previously been permitted under the authority of the Department of the Army, Nationwide Section 404 Permit Number 14, *Linear Transportation Projects* (with additional *Kentucky Regional General Conditions*), and the Division of Section 401 Water General Water Quality Certification. For these authorized permits to be valid, the attached conditions must be followed. The contractor shall post a copy of this Nationwide Number 14 permit and General Water Quality Certification in a conspicuous location at the project site, with unencumbered public access, for the duration of construction and comply with the general conditions required.

## Locations Impacting Water Quality

| Station-Location | Description |
|---|---|
| Bridge ID: 026C00093N | This replacement project will entail complete removal of the bridge and construction of a new bridge. The design objectives are to remove any load restrictions and have a design life of at least 75 years. The project will replace the bridge in the same location with current geometrics (bridge width, length, hydraulic opening, etc.) to avoid environmental impacts, utility impacts, and minimize the need for new right of way. The project will not include any reconstruction of the roadways approaching the bridge. Traffic will be detoured onto existing roads, rather than onto a temporary crossing of the stream. The project will not result in the loss of greater than 0.1 acre of waters of the U.S.; will not result in loss greater than 300 feet of ephemeral, intermittent, or perennial stream; and will not discharge to a special aquatic site. |

Kentucky Transportation
Cabinet Project:

This project involves work near and/or within Jurisdictional Waters of the United States as defined by the U. S. Army Corps of Engineers; therefore, requiring a Nationwide Number 14 General Section 404 permit. The Division of Water conditionally certified this General Permit. Importantly, one of those conditions regards the use of heavy equipment in any stream channel, or streambed. If there is need to cross the stream channel with heavy equipment, or conduct work within the stream channel, a work platform or temporary crossing, is authorized. This should be constructed with clean rock (preferably sandstone or granite east of a line stretching from the McCreary-Wayne County line to the southwest, northeasterly to Lewis-Greenup County line), and sufficient pipe to allow stream flow to continue, unimpeded (refer to the attached standard drawing for low-water crossings at end of the document). Other conditions may be found under the heading, *General Certification—Nationwide Permit # 14 Linear Transportation Projects*.

In order for this authorization to be valid, the attached conditions must be followed. The contractor shall post a copy of this Nationwide Number 14 Approval in a conspicuous location at the project site, for the duration of the construction, and comply with the general conditions as required.

To more readily expedite construction, the contractor may elect to alter the design, or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the contractor shall obtain written permission from the Division of Construction and the Kentucky Transportation Cabinet, Division of Environmental Analysis. If such changes necessitate further permitting, then the contractor will be responsible for applying to the U. S. Army Corps of Engineers and the Kentucky Division of Water. A copy of any request to the Corps of Engineers or Division of Water to alter this proposal and subsequent responses shall be forwarded to the Division of Environmental Analysis, DA Permit Coordinator, for office records and for informational purposes.

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

R. BRUCE SCOTT
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

# General Certification--Nationwide Permit # 14
# Linear Transportation Projects

This General Certification is issued March 19, 2017, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the commonwealth.

Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or 10 are deemed to have certification if they are implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.

For all other operations, the Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 14, namely Linear Transportation Projects, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.

2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.

3. The activity will impact less than 1/2 acre of wetland/marsh.

**General Certification--Nationwide Permit # 14**
**Linear Transportation Projects**
**Page 2**

4. The activity will impact less than 300 linear feet of surface waters of the Commonwealth. Stream realignment greater than 100 feet and in-stream stormwater detention/retention basins are not covered under this general water quality certification.

5. For complete linear transportation projects, all impacts shall not exceed a cumulative length of 500 linear feet within each Hydrologic Unit Code (HUC) 14.

6. Any crossings must be constructed in a manner that does not impede natural water flow.

7. Stream impacts covered under this General Water Quality Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KWQP).

8. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.

9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.

10. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:

    - Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
    - Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur (401 KAR 10:031 Section 2 and KRS 224.70-100).
    - Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to,

**General Certification--Nationwide Permit # 14**
**Linear Transportation Projects**
**Page 3**

upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.

- Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
- Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access.
- To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
- Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
- Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the KDOW shall be notified immediately by calling (800) 928-2380.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

US Army Corps of Engineers®
Louisville District

# 2017 Nationwide Permit General Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/

17. Tribal Rights. No activity may impair tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on the listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification (PCN) to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete PCN. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from Corps.

(d) As a result of formal or informal consultation with the USFWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will review the ESA section 10(a)(1)(B) permit, and if he or she determines that it covers the proposed NWP activity, including any incidental take of listed species that might occur as a result of conducting the proposed NWP activity, the district engineer does not need to conduct a separate section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete PCN whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause an effect on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, and adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g. conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on the both sides of a stream or if the waterbody is a lake or coastal waters. Then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g. riparian areas and/or wetlands compensation) based on what is best for the aquatic environmental on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation if the use of mitigation bank or in-lieu fee program credits is not appropriate and practicable.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality

Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or USEPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____
(Transferee)

_____
(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires Section 408 permission is not authorized by the NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification (PCN). (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other water for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an

illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that may be affected by the proposed activity. For any NWP activity that requires pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. Federal permittees must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of PCN Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require preconstruction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line or ordinary high water mark.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, sites pecific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of PCN notifications to expedite agency coordination.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

Terms for Nationwide Permit No. 14 – Linear Transportation Projects

Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).

Note 2: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

# Report of Geotechnical Exploration

026B00093N
Bridge over Little Sexton Creek
Clay County, Kentucky

BRIDGING KENTUCKY
Restore | Renew | Replace

Prepared by:
Stantec Consulting Services Inc.
Lexington, Kentucky

December 10, 2018

BRIDGING KENTUCKY
Restore | Renew | Replace

**Stantec Consulting Services Inc.**
3052 Beaumont Centre Circle, Lexington KY 40513-1703

December 10, 2018
File: rpt_001_let_178568003

**Attention: Mr. Kevin Deep, PE**
Bridging Kentucky Area 6 Team Lead
Stantec Consulting Services Inc.
3052 Beaumont Centre Circle
Lexington, Kentucky 40513

**Reference: Report of Geotechnical Exploration**
**026B00093N**
**Bridge over Little Sexton Creek**
**Clay County, Kentucky**

Dear Mr. Deep,

Stantec Consulting Services Inc. (Stantec) is submitting the geotechnical engineering report for the referenced structure with this letter. This report presents results of the field exploration along with our recommendations for the design and construction for the referenced bridge. As always, we enjoy working with your staff and if we can be of further assistance, please contact our office.

Sincerely,

**STANTEC CONSULTING SERVICES INC.**

Donald L. Blanton, PE
Senior Associate
Phone: (859) 422-3033
Fax: (859) 422-3100
Donald.Blanton@stantec.com

/rws

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Introduction
December 10, 2018

# 1.0 INTRODUCTION

The Kentucky Transportation Cabinet (KYTC) has initiated the Bridging Kentucky program. The purpose of the program is to rehabilitate or replace over 1,000 bridges across the state. Bridges that have been identified to be a part of the program are structures that because of their deteriorating conditions and resulting low load ratings are limiting the movement of people and freight across the state.

This report addresses the geotechnical considerations for Bridge 026B00093N, Bridge over Little Sexton Creek which is in Clay County, Kentucky. The bridge location is presented on Figure 1 below.

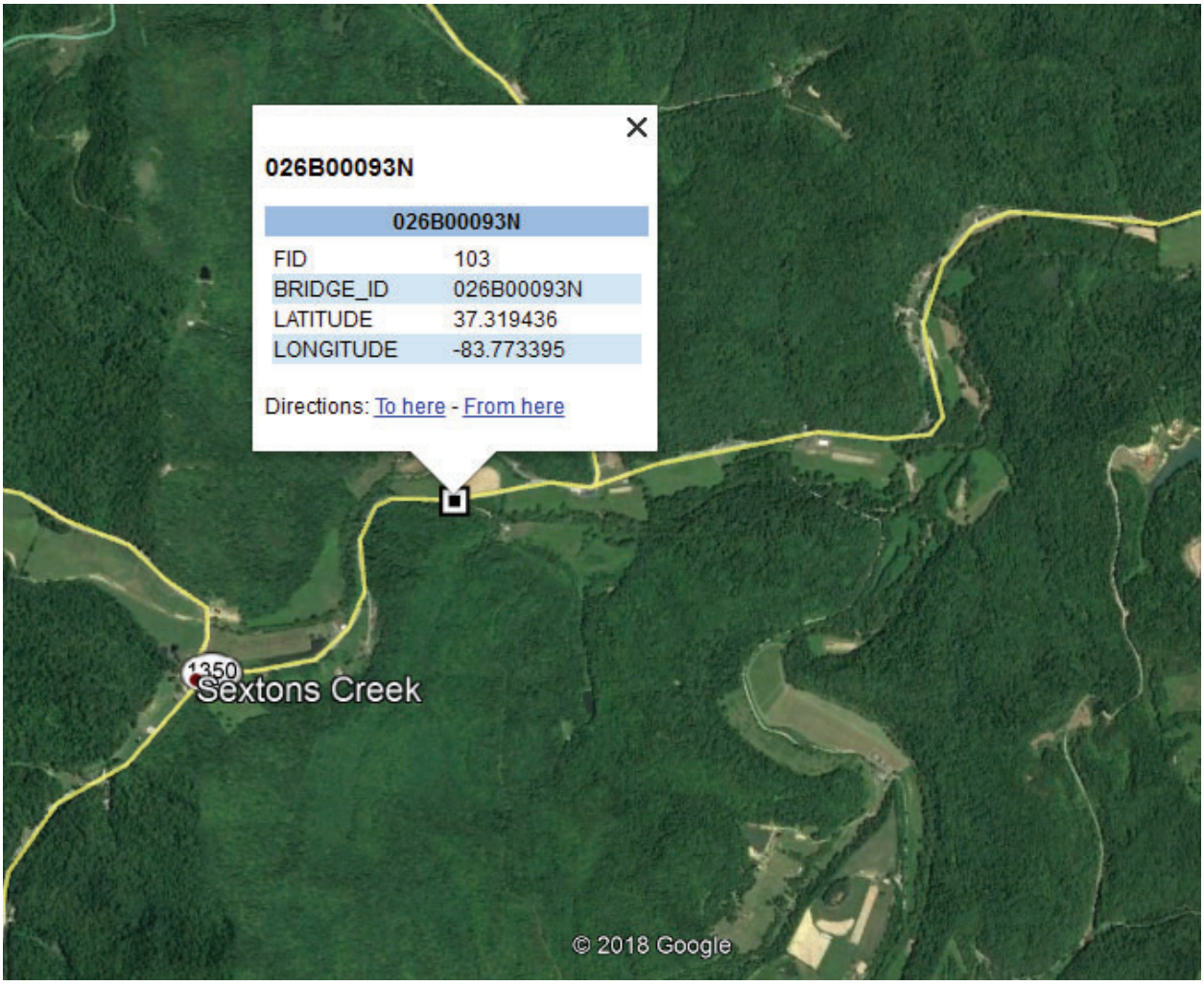



**Figure 1 – Google Image showing Project Site.**

# 2.0 SITE TOPOGRAPHY AND GEOLOGIC CONDITIONS

The project site is situated on the Geologic Map of the Maulden Quadrangle, Southeastern Kentucky (GQ-1140). Based on the review of this geologic map, the project is underlain by alluvium. The alluvium consists of silt, clay, sand and gravel; mostly yellowish-gray to dusky-yellow clayey silt, commonly sandy. Based on the mapping the alluvial deposits vary in thicknesses up to approximately 20 feet.

The Breathitt Formation, of the Lower and Middle Pennsylvanian geologic period, underlies the alluvium. The Breathitt Formation consists of cyclic sequences of sandstone, shale, siltstone and coal. The sandstone is dominantly arkosic sandstone and sub gray-wacke, light-brown, dusky-yellow to moderate brown, very fine to medium grained, thin to thick bedded and grades into interlenses with siltstone and silty shale. The siltstone is yellowish-gray, generally thin to thick bedded. The shale is mostly brownish-gray to olive black, carbonaceous, and laminated.

No other detrimental geologic features are noted by the available mapping within the immediate vicinity of the proposed roadway.

# 3.0 FIELD INVESTIGATION

A geotechnical exploration was conducted in October of 2018 which consisted of two subsurface borings, designated herein as 026B00093N-1 and 026B00093N-2. The boring locations and surface elevations were obtained by the Bridging Kentucky TEAM and are presented in Appendix A. Table 1 provides a summary of the locations, elevations, and depths of the borings drilled for the proposed bridge.

**Table 1 Bridge over Little Sexton Creek – Summary of Borings**

| Hole No. | Latitude | Longitude | Surface Elevation (ft.) MSL | Top of Rock/Refusal | | Begin Core | | Bottom of Hole | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (ft.) | Elevation (ft.) MSL | Depth (ft.) | Elevation (ft.) MSL | Depth (ft.) | Elevation (ft.) MSL |
| 026B00093N-1 | 37.319383 | -83.773248 | 782.0 | 14.2 | 767.8 | 14.5 | 767.5 | 24.7 | 757.3 |
| 026B00093N-2 | 37.319373 | -83.773523 | 781.5 | 14.0 | 767.5 | 14.0 | 767.5 | 24.3 | 757.2 |

The drill crew operated a truck-mounted drill rig equipped with hollow-stem and flight augers as well as wire line coring tools. The field personnel generally performed soil sampling at five-foot intervals of depth to obtain in situ strength data and specimens for subsequent laboratory strength and/or classification testing. Standard penetration testing (SPT) was conducted at both boring locations.

# 4.0 SUBSURFACE CONDITIONS

In general, the subsurface materials observed in the sample borings consist primarily of brown silty clays with sand and gravel and gravelly silty sandy clay that was moist wet, medium stiff, and fine grained. Standard penetration test blow counts (N) in soil material ranged from 5 to 13 blows per foot. Soil thicknesses encountered ranged from 14.0 to 14.2 feet at the bridge location.

Based upon the rock coring performed, the top of bedrock is relatively flat and varied from a high elevation of 767.8 feet in Boring 026B00093N-1 to a low elevation of 767.5 feet in Boring 026B00093N-2. Bedrock specimens recovered from coring operations consist of shale. The shale is described as dark gray, laminated with very fine sand and silty laminations throughout. Typed logs of the borings are presented in Appendix CB.

Observation wells were not installed. Groundwater was encountered at the time of drilling at a depth of 8.8 feet at Boring 026B00093N-1. Groundwater can be expected to be encountered at the level of Little Sexton Creek. Groundwater levels and/or conditions may vary considerably, with time, according to the prevailing climate, rainfall or other factors.

# 5.0 LABORATORY TESTING AND RESULTS

Stantec performed laboratory testing on soil samples from the borings. All laboratory tests were performed in accordance with the applicable AASHTO or Kentucky Methods soil and rock testing specifications. Laboratory testing consisted of natural moisture content, grain size-sieve analyses (silt plus clay determinations), and soil classification index testing.

The SPT tested classified as GM according to USCS and A-1-b on the AASHTO classification system. Results of the laboratory testing are also presented in Appendix C.

# 6.0 ENGINEERING ANALYSES

## 6.1 GENERAL

This project will consist of replacing the existing bridge. No significant grading efforts are planned, as such, embankment stability or settlement analyses have been not performed. Any grading requirements or material placement that may be needed should be placed at 2H:1V slopes or flatter. Based on a combination of existing conditions and anticipated grades, spread footings are being recommended for the end bents. This report provides recommendations for spread footings on rock for support of the end bents of the subject structure.

## 6.2 BEARING CAPACITY FOR SPREAD FOOTINGS ON BEDROCK

Upon review of the boring logs, spread footings are anticipated. Based on a review of the rock core logs and the quality of the bedrock encountered, a presumptive bearing resistance of 20,000 psf on unweathered bedrock is being recommended at the substructure locations in accordance with NAVFAC DM 7.2, page 7.2-142 for spread footings bearing on sedimentary rock at the service limit state.

Additional evaluation will be necessary if the designer's analyses of the nominal bearing resistance indicate the strength or extreme limit states control the footing design. The bottom of the footing should be placed a minimum of one-foot into competent rock.

# 7.0 FOUNDATION SYSTEM RECOMMENDATIONS

Stantec developed the following recommendations based upon reviews of available data, information obtained during the field exploration, results of laboratory testing and engineering analyses, and discussions with TEAM personnel.

7.1. Based on a review of the existing subsurface conditions and anticipated structural loads, it is recommended that rock bearing foundation system consisting of spread footings be used for all bridge substructure elements. A presumptive bearing resistance of 20,000 psf on unweathered bedrock is being recommended.

**REPORT OF GEOTECHNICAL EXPLORATION**

Foundation System Recommendations
December 10, 2018

| Boring No. | Latitude | Longitude | Surface Elevation (feet) | Top of Rock Elevation (feet) |
|---|---|---|---|---|
| 026B00093N-1 | 37.319383 | -83.773248 | 782.0 | 767.8 |
| 026B00093N-2 | 37.319373 | -83.773523 | 781.5 | 767.5 |

7.2. Foundation excavations should be properly braced/shored to provide adequate safety to people working in or around the excavations. Bracing should be performed in accordance with applicable federal, state and local guidelines.

7.3. **A plan note should be included by the designer** that indicates that temporary shoring, sheeting, cofferdams, and/or dewatering methods may be required to facilitate foundation construction. It should be anticipated that groundwater will be encountered at foundation locations within the flood plain.

7.4 Rock-bearing spread footings are being provided for both End Bent substructure elements. Foundation excavations for footings at the structure locations should be level and free of loose, water softened material, etc. Additional rock excavation to achieve suitable bearing conditions may be required depending upon topography and bedrock weathering conditions.

7.5 **A plan note should be included by the designer** that indicates that solid rock excavation will be required for installation of the substructure's spread footings. The contractor shall take care during blasting and other excavation methods to avoid over-breakage and damage to the bedrock beneath the footings.

7.6 **A plan note should be included by the designer** that indicates that the bearing elevation of footings may be adjusted at the discretion of the Engineer if competent, unweathered bedrock is found at a higher elevation than specified for the respective substructure element. The top of the new spread footings should be fully embedded into unweathered bedrock. The plan note should also state that the base of new footings must be placed on unweathered bedrock.

7.7. Prior to placement of any concrete or reinforcing steel in a foundation excavation, the excavation bottom should be clean and all soft, wet, or loose materials should be removed. In no case should concrete be placed upon compressible or water-softened materials.

7.8 **A plan note should be included by the designer** indicating that footings should be placed as soon as practical after completion of the footing excavation. If the bedrock becomes softened at bearing elevation, the softened material should be undercut to unweathered material prior to placement of reinforcing steel and concrete. Seasonal groundwater fluctuations may cause groundwater infiltration into the footing excavation, and a dewatering method may be necessary.

7.9 Any clay seams or suspect weak materials at or near the bearing elevation will need to be undercut and replaced with mass concrete.

7.10 **A plan note should be included by the designer** indicating all footing excavations in bedrock shall be cut neatly so that no forming or backfilling is necessary in the construction of the portions of the footings located in rock. Concrete shall be placed directly against the cut rock faces. Mass concrete should be placed in the excavation from the top of the footing to the bedrock surface where the footing does not extend to the bedrock surface.

# 8.0 CLOSING

8.1. The conclusions and recommendations presented herein are based on data and subsurface conditions from the borings drilled during previous geotechnical exploration using that degree of care and skill ordinarily exercised under similar circumstances by competent members of the engineering profession. No warranties can be made regarding the continuity of conditions between borings.

8.2. General soil and rock descriptions and indicated boundaries are based on an engineering interpretation of all available subsurface information and may not necessarily reflect the actual variation in subsurface conditions between borings and samples.

8.3. The observed water levels and/or conditions indicated on the boring logs are as recorded at the time of exploration. These water levels and/or conditions may vary considerably, with time, according to the prevailing climate, rainfall, tail water elevations or other factors and are otherwise dependent on the duration of and methods used in the exploration program.

8.4. Stantec exercised sound engineering judgment in preparing the subsurface information presented herein. This information has been prepared and is intended for design and estimating purposes. Its presentation on the plans or elsewhere is for the purpose of providing intended users with access to the same information. This subsurface information interpretation is presented in good faith and is not intended as a substitute for independent interpretations or judgments of the Contractor.

8.5. All structure details shown herein are for illustrative purposes only and may not be indicative of the final design conditions shown in the contract plans.

# APPENDIX A
# SITE MAP


BRIDGING KENTUCKY
Restore | Renew | Replace

| | | | |
|---|---|---|---|
| GRAPHIC SCALE: 1" = 50' | | BRIDGING KENTUCKY | |
| DATE: 12/10/2018 | | BRIDGE: 026B00093N | PAGE NO. - |
| DRAWN BY: TJ | CKD. BY: DLB | SHEET: BRIDGE OVER LITTLE SEXTON CREEK CLAY COUNTY, KY | FIG. NO. - |
| STANTEC JOB NO.: 178568003 | | | |
| FILE NAME: | | | |

PLOT DATE: 12/10/2018 USER: JOHNSON, TRACY
V:\1785\ACTIVE\178568003\GEOTECHNICAL\026B00093N\DRAWING\BOR_LAYO.DWG

# APPENDIX B
# TYPED BORING LOGS

Drilling Firm: Stantec
For: Division of Structural Design
Geotechnical Branch

# DRILLER'S SUBSURFACE LOG

Printed: 12/10/18

Page 1 of 1

| | | |
|---|---|---|
| Project ID: ***178568003*** | ***Statewide - Various*** | Project Type: ***Structure Bridge*** |
| Item Number: ***Statewide*** | | Project Manager: _ |

| | | | |
|---|---|---|---|
| Hole Number ***026B00093N-1*** | Immediate Water Depth ***8.8 (10/18/18)*** | Start Date ***10/18/2018*** | Hole Type ***core and sample*** |
| Surface Elevation ***782.0'*** | Static Water Depth ***NA*** | End Date ***10/18/2018*** | Rig_Number ***45B*** |
| Total Depth ***24.7'*** | Driller ***Mark Martin*** | Latitude(83) ***37.319383*** | |
| Location ***+ 'Lt.*** | | Longitude(83) ***-83.773248*** | |

| Lithology Elevation | Lithology Depth | Description (Overburden / Rock Core) | Sample No. / Std/Ky RQD | Depth (ft) / Run (ft) | Rec. (ft) / Rec (ft) | SPT Blows / Rec (%) | Sample Type / SDI (JS) | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 0.0-1.5 | 1.5 | 4-5-5 | SPT | |
| 5 777.0 | 5.0 | Medium stiff, brown, moist, silty sandy clay with gravel. | | | | | | 5 |
| | | | 2 | 5.0-6.5 | 1.2 | 5-3-3 | SPT | |
| 10 | | Medium stiff, brown, moist, silty sand with gravel. | | | | | | 10 |
| | | | 3 | 10.0-11.5 | 1.2 | 5-7-3 | SPT | |
| 767.8 | 14.2 | (Begin Core) | | | | | | |
| 15 767.5 | 14.5 | | 0 / 0 | 2.9 | 2.9 | 100 | | 15 |
| | | | | | | | | 17.4 |
| 20 | | Gray shale. | 73 / 20 | 4.8 | 4.8 | 100 | | 20 |
| | | | | | | | | 22.2 |
| 25 757.3 | 24.7 | | 100 / 75 | 2.5 | 2.5 | 100 | | 24.7 25 |
| 30 | | (Bottom of Hole 24.7') | | | | | | 30 |
| 35 | | | | | | | | 35 |
| 40 | | | | | | | | 40 |
| 45 | | | | | | | | 45 |
| 50 | | | | | | | | 50 |

Drilling Firm: Stantec
For: Division of Structural Design
Geotechnical Branch

# DRILLER'S SUBSURFACE LOG

Printed: 12/10/18

Page 1 of 1

| | | |
|---|---|---|
| Project ID: ***178568003*** | ***Statewide - Various*** | Project Type: ***Structure Bridge*** |
| Item Number: ***Statewide*** | | Project Manager: _ |

| | | | |
|---|---|---|---|
| Hole Number ***026B00093N-2*** | Immediate Water Depth ***NA*** | Start Date ***10/22/2018*** | Hole Type ***core and sample*** |
| Surface Elevation ***781.5'*** | Static Water Depth ***NA*** | End Date ***10/22/2018*** | Rig_Number ***45B*** |
| Total Depth ***24.3'*** | Driller ***Mark Martin*** | Latitude(83) ***37.319373*** | |
| Location ***+ ' Lt.*** | | Longitude(83) ***-83.773523*** | |

| Lithology Elevation | Lithology Depth | Description | Sample No. | Depth (ft) | Rec. (ft) | SPT Blows | Sample Type | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | Overburden | 1 | 0.0-1.5 | 1.5 | 2-3-2 | SPT | |
| 5 776.5 | 5.0 | Medium stiff, brown, moist, silty sandy clay. | | | | | | 5 |
| | | | 2 | 5.0-6.5 | 1.2 | 7-7-6 | SPT | |
| 10 | | Medium stiff, brown, moist, silty gravel with coarse sand. | | | | | | 10 |
| | | | 3 | 10.0-11.5 | 1.5 | 6-6-7 | SPT | |
| 767.5 | 14.0 | (Begin Core) | | | | | | |
| 15 | | Rock Core | 28 / 0 | 2.9 | 2.8 | 97 | | 15 |
| | | | | | | | | 16.9 |
| 20 | | Gray to dark gray shale. | 80 / 0 | 5.0 | 4.9 | 98 | | 20 |
| | | | | | | | | 21.9 |
| 757.2 | 24.3 | | 92 / 0 | 2.4 | 2.4 | 100 | | 24.3 |
| 25 | | (Bottom of Hole 24.3') | | | | | | 25 |
| 30 | | | | | | | | 30 |
| 35 | | | | | | | | 35 |
| 40 | | | | | | | | 40 |
| 45 | | | | | | | | 45 |
| 50 | | | | | | | | 50 |

Std/Ky RQD | Run (ft) | Rec (ft) | Rec (%) | SDI (JS)

# APPENDIX C
# LABORATORY DATA SHEETS

Stantec

# Summary of Soil Tests

| | | | |
|---|---|---|---|
| Project Name | Bridging KY | Project Number | 178568003 |
| Source | 026B00093N-2, 5.0'-6.5', 10.0'-11.5' | Lab ID | 23 |
| Sample Type | SP Composite | Date Received | 10-31-18 |
| | | Date Reported | 11-7-18 |

## Test Results

### Natural Moisture Content

Test Not Performed

Moisture Content (%): N/A

### Particle Size Analysis

Preparation Method: AASHTO T 87
Gradation Method: AASHTO T 88
Hydrometer Method: AASHTO T 88

| Particle Size | | % |
|---|---|---|
| Sieve Size | (mm) | Passing |
| | N/A | |
| | N/A | |
| 2" | 50 | 100.0 |
| 1" | 25 | 94.5 |
| 3/4" | 19 | 84.2 |
| 3/8" | 9.5 | 65.8 |
| No. 4 | 4.75 | 56.3 |
| No. 10 | 2 | 48.4 |
| No. 40 | 0.425 | 42.4 |
| No. 200 | 0.075 | 19.0 |
| | 0.02 | 9.0 |
| | 0.005 | 4.6 |
| | 0.002 | 2.8 |
| estimated | 0.001 | 1.8 |

Plus 3 in. material, not included: 0 (%)

| | ASTM | AASHTO |
|---|---|---|
| Range | (%) | (%) |
| Gravel | 43.7 | 51.6 |
| Coarse Sand | 7.9 | 6.0 |
| Medium Sand | 6.0 | --- |
| Fine Sand | 23.4 | 23.4 |
| Silt | 14.4 | 16.2 |
| Clay | 4.6 | 2.8 |

### Atterberg Limits

Test Method: AASHTO T 89 & T 90
Prepared: Dry

| | |
|---|---|
| Liquid Limit: | NP |
| Plastic Limit: | NP |
| Plasticity Index: | NP |
| Activity Index: | N/A |

### Moisture-Density Relationship

Test Not Performed

| | |
|---|---|
| Maximum Dry Density (lb/ft$^3$): | N/A |
| Maximum Dry Density (kg/m$^3$): | N/A |
| Optimum Moisture Content (%): | N/A |
| Over Size Correction %: | N/A |

### California Bearing Ratio

Test Not Performed

| | |
|---|---|
| Bearing Ratio (%): | N/A |
| Compacted Dry Density (lb/ft$^3$): | N/A |
| Compacted Moisture Content (%): | N/A |

### Specific Gravity

Test Method: AASHTO T 100
Prepared: Dry

| | |
|---|---|
| Particle Size: | No. 10 |
| Specific Gravity at 20° Celsius: | 2.72 |

### Classification

| | |
|---|---|
| Unified Group Symbol: | GM |
| Group Name: | Silty gravel with sand |
| AASHTO Classification: | A-1-b ( 0 ) |

Comments:

Reviewed By RJ

# Particle-Size Analysis of Soils
AASHTO T 88

| | | | |
|---|---|---|---|
| Project Name | Bridging KY | Project Number | 178568003 |
| Source | 026B00093N-2, 5.0'-6.5', 10.0'-11.5' | Lab ID | 23 |

## Sieve analysis for the Portion Coarser than the No. 10 Sieve

| | |
|---|---|
| Test Method | AASHTO T 88 |
| Prepared using | AASHTO T 87 |
| Particle Shape | Rounded and Angular |
| Particle Hardness: | Hard and Durable |
| Tested By | CM |
| Test Date | 11-01-2018 |
| Date Received | 10-31-2018 |

Maximum Particle size: 2" Sieve

| Sieve Size | % Passing |
|---|---|
| | |
| | |
| | |
| | |
| | |
| 2" | 100.0 |
| 1" | 94.5 |
| 3/4" | 84.2 |
| 3/8" | 65.8 |
| No. 4 | 56.3 |
| No. 10 | 48.4 |

## Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on -3 inch fraction only

Specific Gravity 2.72

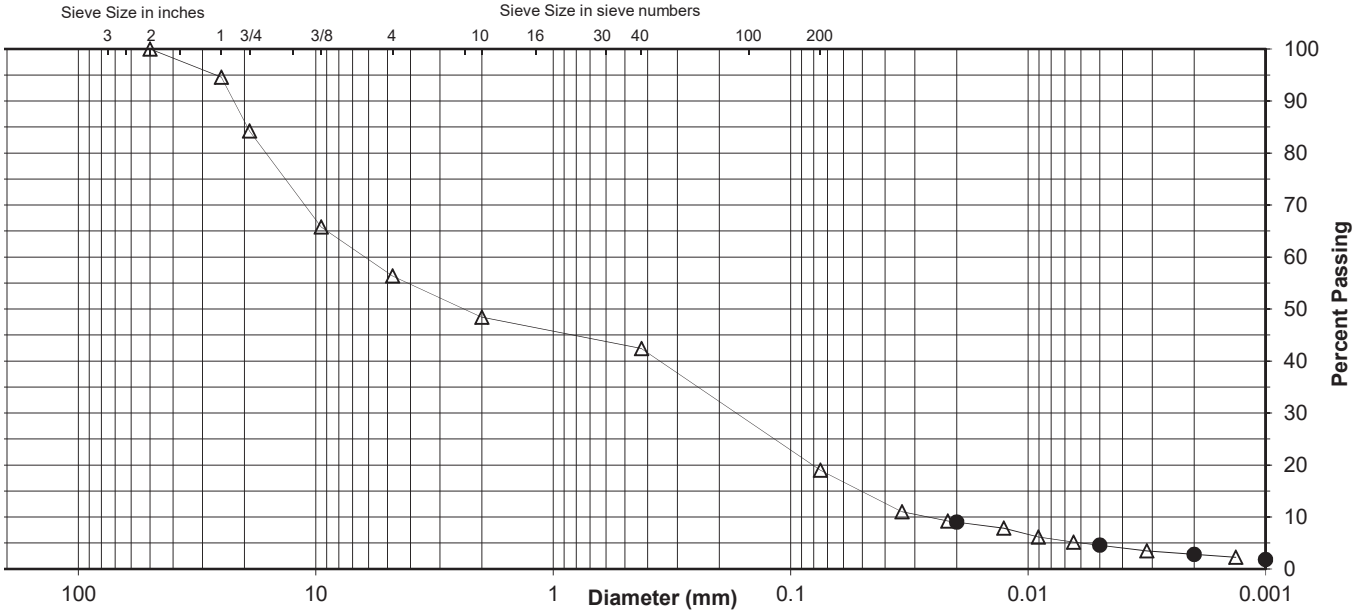
Dispersed using Apparatus A - Mechanical, for 1 minute

| | |
|---|---|
| No. 40 | 42.4 |
| No. 200 | 19.0 |
| 0.02 mm | 9.0 |
| 0.005 mm | 4.6 |
| 0.002 mm | 2.8 |
| 0.001 mm | 1.8 |

## Particle Size Distribution

| | Coarse Gravel | Fine Gravel | C. Sand | Medium Sand | Fine Sand | Silt | Clay |
|---|---|---|---|---|---|---|---|
| ASTM | 15.8 | 27.9 | 7.9 | 6.0 | 23.4 | 14.4 | 4.6 |

| | Gravel | Coarse Sand | Fine Sand | Silt | Clay |
|---|---|---|---|---|---|
| AASHTO | 51.6 | 6.0 | 23.4 | 16.2 | 2.8 |




Comments

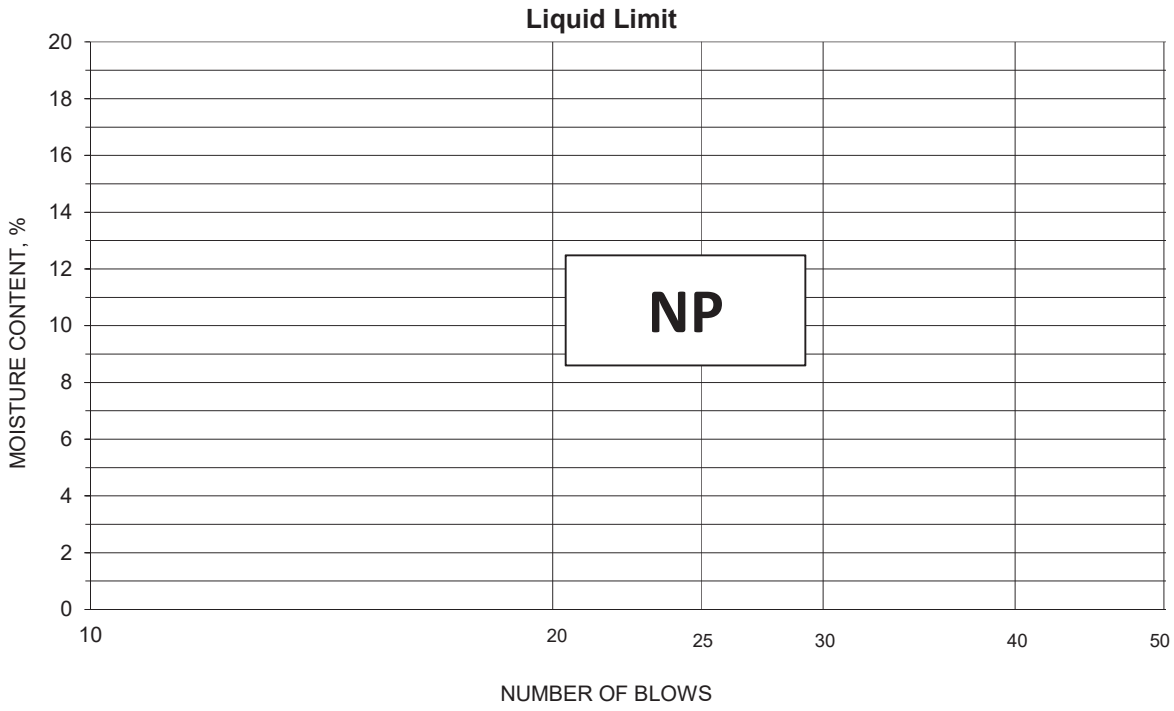
Reviewed By RJ

Stantec

# ATTERBERG LIMITS

| | | | | | |
|---|---|---|---|---|---|
| Project | Bridging KY | | | Project No. | 178568003 |
| Source | 026B00093N-2, 5.0'-6.5', 10.0'-11.5' | | | Lab ID | 23 |
| | | | | % + No. 40 | 58 |
| Tested By | CM | Test Method | AASHTO T 89 & T 90 | Date Received | 10-31-2018 |
| Test Date | 11-05-2018 | Prepared | Dry | | |

| Wet Soil and Tare Mass (g) | Dry Soil and Tare Mass (g) | Tare Mass (g) | Number of Blows | Water Content (%) | Liquid Limit |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |




PLASTIC LIMIT AND PLASTICITY INDEX

| Wet Soil and Tare Mass (g) | Dry Soil and Tare Mass (g) | Tare Mass (g) | Water Content (%) | Plastic Limit | Plasticity Index |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

Remarks: _____

Reviewed By RJ

Stantec

# Gradation Analysis

AASHTO T 88

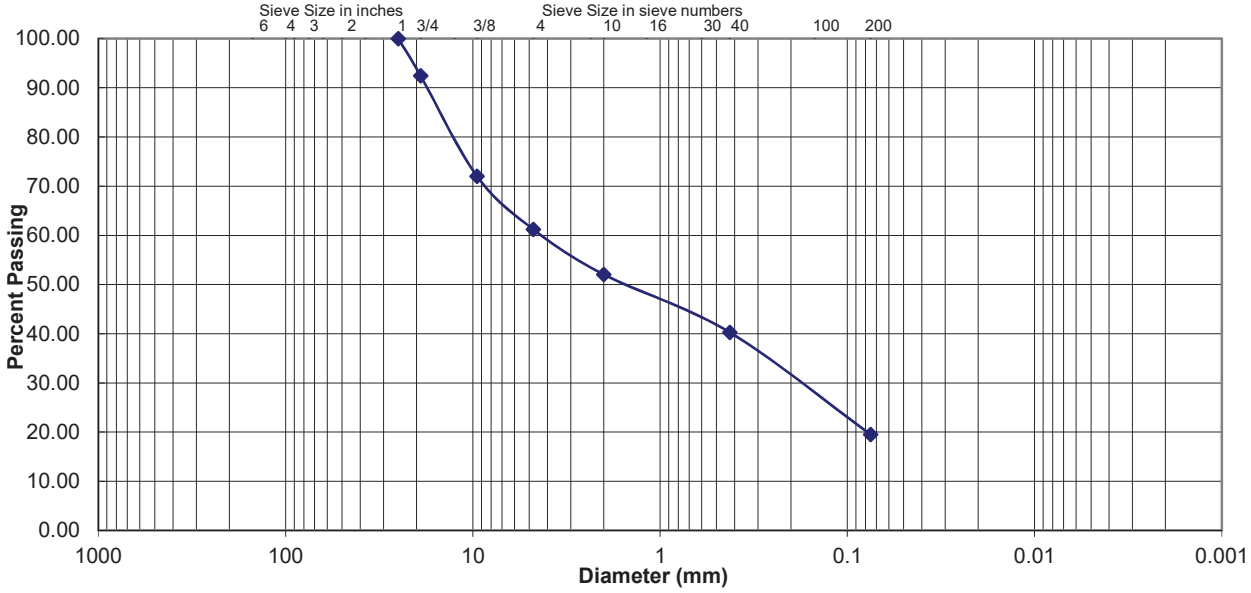
| | | | |
|---|---|---|---|
| Project Name | Bridging KY - 026B00093N | Project Number | 178568003 |
| Source | 026B00093N-1, 0.0'-1.5' | Lab ID | 19 |
| Preparation Method | AASHTO T 11 Method A | Date Received | 10-23-2018 |
| Soak Time (min) | 1440 | Preparation Date | 10-24-2018 |
| Particle Shape | Rounded | Test Date | 10-29-2018 |
| Particle Hardness | Hard and Durable | | |
| Sample Dry Mass (g) | 264.71 | | |
| Moisture Content (%) | 14.3 | | |

Analysis based on total sample.

| Sieve Size | Grams Retained | % Retained | % Passing |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 1" | 0.00 | 0.0 | 100.0 |
| 3/4" | 20.03 | 7.6 | 92.4 |
| 3/8" | 54.06 | 20.4 | 72.0 |
| No. 4 | 28.62 | 10.8 | 61.2 |
| No. 10 | 24.23 | 9.2 | 52.0 |
| No. 40 | 31.12 | 11.8 | 40.3 |
| No. 200 | 55.00 | 20.8 | 19.5 |
| Pan | 51.65 | 19.5 | --- |

| | |
|---|---|
| % Gravel | 48.0 |
| % Sand | 32.5 |
| % Fines | 19.5 |
| Fines Classification | N/A |
| $D_{10}$ (mm) | N/A |
| $D_{30}$ (mm) | N/A |
| $D_{60}$ (mm) | N/A |
| Cu | N/A |
| Cc | N/A |

## Particle Size Distribution




Comments

Reviewed By RJ

Stantec

# Gradation Analysis

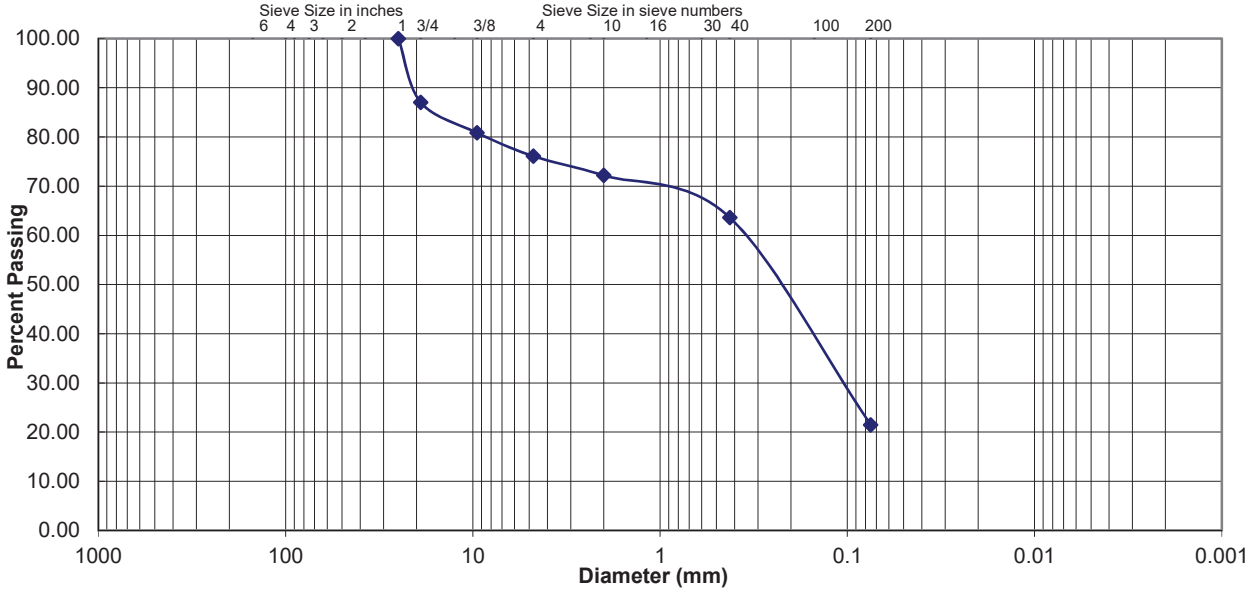
AASHTO T 88

| | | | |
|---|---|---|---|
| Project Name | Bridging KY - 026B00093N | Project Number | 178568003 |
| Source | 026B00093N-1, 5.0'-6.5' | Lab ID | 20 |
| Preparation Method | AASHTO T 11 Method A | Date Received | 10-23-2018 |
| Soak Time (min) | 1440 | Preparation Date | 10-24-2018 |
| Particle Shape | Rounded | Test Date | 10-29-2018 |
| Particle Hardness | Hard and Durable | | |
| Sample Dry Mass (g) | 229.15 | Analysis based on total sample. | |
| Moisture Content (%) | 14.8 | | |

| Sieve Size | Grams Retained | % Retained | % Passing |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 1" | 0.00 | 0.0 | 100.0 |
| 3/4" | 29.68 | 13.0 | 87.0 |
| 3/8" | 14.20 | 6.2 | 80.9 |
| No. 4 | 10.92 | 4.8 | 76.1 |
| No. 10 | 8.95 | 3.9 | 72.2 |
| No. 40 | 19.60 | 8.6 | 63.6 |
| No. 200 | 96.62 | 42.2 | 21.5 |
| Pan | 49.18 | 21.5 | --- |

| | |
|---|---|
| % Gravel | 27.8 |
| % Sand | 50.7 |
| % Fines | 21.5 |
| Fines Classification | N/A |
| $D_{10}$ (mm) | N/A |
| $D_{30}$ (mm) | N/A |
| $D_{60}$ (mm) | N/A |
| Cu | N/A |
| Cc | N/A |

## Particle Size Distribution




Comments

Reviewed By RJ

Stantec

# Gradation Analysis
AASHTO T 88

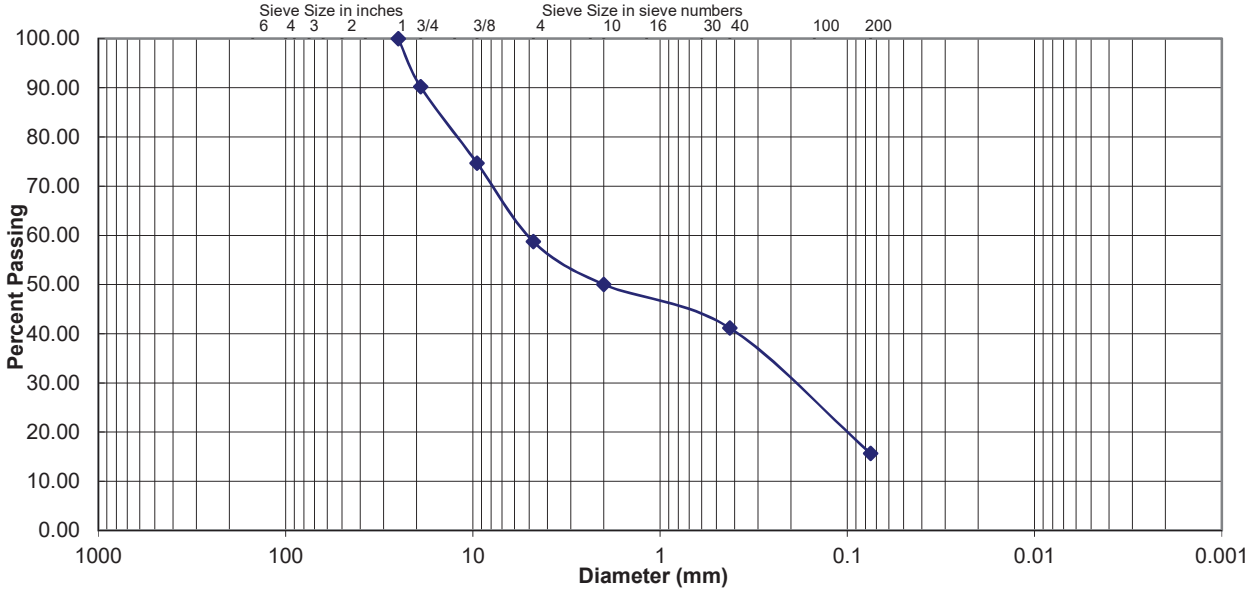
| | | | |
|---|---|---|---|
| Project Name | Bridging KY - 026B00093N | Project Number | 178568003 |
| Source | 026B00093N-1, 10.0'-11.5' | Lab ID | 21 |
| Preparation Method | AASHTO T 11 Method A | Date Received | 10-23-2018 |
| Soak Time (min) | 1440 | Preparation Date | 10-24-2018 |
| Particle Shape | Angular | Test Date | 10-29-2018 |
| Particle Hardness | Hard and Durable | | |
| Sample Dry Mass (g) | 263.24 | | |
| Moisture Content (%) | 13.8 | | |

Analysis based on total sample.

| Sieve Size | Grams Retained | % Retained | % Passing |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 1" | 0.00 | 0.0 | 100.0 |
| 3/4" | 25.80 | 9.8 | 90.2 |
| 3/8" | 40.80 | 15.5 | 74.7 |
| No. 4 | 42.05 | 16.0 | 58.7 |
| No. 10 | 22.93 | 8.7 | 50.0 |
| No. 40 | 23.26 | 8.8 | 41.2 |
| No. 200 | 67.19 | 25.5 | 15.7 |
| Pan | 41.21 | 15.7 | --- |

| | |
|---|---|
| % Gravel | 50.0 |
| % Sand | 34.4 |
| % Fines | 15.7 |
| Fines Classification | N/A |
| $D_{10}$ (mm) | N/A |
| $D_{30}$ (mm) | N/A |
| $D_{60}$ (mm) | N/A |
| Cu | N/A |
| Cc | N/A |

## Particle Size Distribution




Comments

Reviewed By RJ

Stantec

# Moisture Content of Soil

AASHTO T 265

Project Name Bridging KY

Project Number 178568003

Tested By CM

Test Method AASHTO

| Maximum Particle Size in Sample | No. 40 | No. 4 | 1/2" | 1" | 2" | |
|---|---|---|---|---|---|---|
| Recommended Minimum Mass (g) | 10 | 100 | 300 | 500 | 1,000 | |

Material Type: Stratified, Laminated, Lensed, Homogeneous, Disturbed

| Source | Lab ID | Date Tested | Material Type | Maximum Particle Size | Material Excluded Amount | Material Excluded Size | Pass Min. Mass? (Y/N) | Can Weight (g) | Wet Soil & Can Weight (g) | Dry Soil & CanWeight (g) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 026B00093N-2, 0.0'-1.5' | 22 | 10/31/18 | Hom | 1" | | | No | 31.25 | 112.23 | 95.03 | 27.0 |
| 026B00093N-2, 5.0'-6.5' | 24 | 10/31/18 | Hom | 1" | | | No | 29.57 | 93.60 | 83.89 | 17.9 |
| 026B00093N-2, 10.0'-11.5' | 25 | 10/31/18 | Hom | 1" | | | No | 31.39 | 132.74 | 119.19 | 15.4 |

Stantec

# Slake Durability Index

KM 64 - 513

Project Name Bridging KY

Project Number 178568003

| Lab ID | Source | Depth | Material Description | Fragment Description | Testing Dates | Initial Dry Wt. (g) | Final Dry Wt. (g) | SDI (%) | Jar Slake |
|---|---|---|---|---|---|---|---|---|---|
| 77 | 026B00093N-1 | 16.2'-17.1' | Shale, gray | Type II | 11/16/2018 - 11/21/2018 | 475.99 | 421.52 | 88.6 | 5 |
| 78 | 026B00093N-1 | 22.9'-23.8' | Shale, gray | Type II | 11/16/2018 - 11/21/2018 | 506.93 | 443.74 | 87.5 | 5 |
| 79 | 026B00093N-2 | 16.7'-17.7' | Shale, gray | Type II | 11/16/2018 - 11/21/2018 | 519.95 | 389.74 | 75.0 | 4 |
| 80 | 026B00093N-2 | 21.5'-22.5' | Shale, gray | Type II | 11/16/2018 - 11/21/2018 | 486.99 | 416.51 | 85.5 | 4 |

# 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 2016.*

# SUPPLEMENTAL SPECIFICATIONS

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

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

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## SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

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

**2.0 MATERIALS.**

**2.1 General.** Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

**2.2 Sign and Controls.** All signs must:

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

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12) Allow an on-off flashing sequence at an adjustable rate.
13) Provide a sight to aim the message.
14) Provide a LED display color of approximately 590 nm amber.
15) Provide a controller that is password protected.
16) Provide a security device that prevents unauthorized individuals from accessing the controller.
17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

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

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

**2.3 Power.**

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

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

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

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

**4.0 MEASUREMENT.** The final quantity of Variable Message Sign will be

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the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

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

| Code | Pay Item | Pay Unit |
|---|---|---|
| 02671 | Portable Changeable Message Sign | Each |

Effective June 15, 2012

# PART III

# EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 -- Revised May 1, 2012

**REQUIRED CONTRACT PROVISIONS**
**FEDERAL-AID CONSTRUCTION CONTRACTS**



## I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

## II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

**6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

**10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

**III. NONSEGREGATED FACILITIES**

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

**IV. DAVIS-BACON AND RELATED ACT PROVISIONS**

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

**1. Minimum wages**

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

**2. Withholding**

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

**3. Payrolls and basic records**

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

**4. Apprentices and trainees**

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

**10. Certification of eligibility.**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages**. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

**VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

**VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

**VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

**IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

**X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

**2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

# KENTUCKY TRANSPORTATION CABINET
# DEPARTMENT OF HIGHWAYS

## EMPLOYMENT REQUIREMENTS
## RELATING TO
## NONDISCRIMINATION OF EMPLOYEES
## (APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)

**AN ACT OF THE KENTUCKY GENERAL ASSEMBLY TO PREVENT DISCRIMINATION IN EMPLOYMENT**

**KRS CHAPTER 344**
**EFFECTIVE JUNE 16, 1972**

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (forty and above); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age forty (40) and over. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, except that such a notice or advertisement may indicate a preference, limitation, or specification based on religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, when religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age forty (40) and over, in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

Revised: January 25, 2017

## Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

## Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

# EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

No present or former public servant shall, within six (6) months following termination of his office or employment, accept employment, compensation, or other economic benefit from any person or business that contracts or does business with, or is regulated by, the state in matters in which he was directly involved during the last thirty-six (36) months of his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, or for which he received, prior to his state employment, a professional degree or license, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his tenure in state government. This subsection shall not prohibit the performance of ministerial functions, including but not limited to filing tax returns, filing applications for permits or licenses, or filing incorporation papers, nor shall it prohibit the former officer or public servant from receiving public funds disbursed through entitlement programs.

KRS 11A.040 (9) states:

A former public servant shall not represent a person or business before a state agency in a matter in which the former public servant was directly involved during the last thirty-six (36) months of his tenure, for a period of one (1) year after the latter of:

a) The date of leaving office or termination of employment; or
b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, 3 Fountain Place, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: January 27, 2017

General Decision Number: KY190107 01/04/2019 KY107

Superseded General Decision Number: KY20180187

State: Kentucky

Construction Type: Highway

Counties: Adair, Barren, Bell, Breathitt, Casey, Clay, Clinton, Cumberland, Estill, Floyd, Garrard, Green, Harlan, Hart, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lincoln, Magoffin, Martin, McCreary, Menifee, Metcalfe, Monroe, Morgan, Owsley, Perry, Pike, Powell, Pulaski, Rockcastle, Russell, Taylor, Wayne, Whitley and Wolfe Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| Modification Number | Publication Date |
|---|---|
| 0 | 01/04/2019 |

SUKY2015-047 10/20/2015

| | Rates | Fringes |
|---|---|---|
| BOILERMAKER | $ 24.65 | 12.94 |
| BRICKLAYER | | |
| Bricklayer | $ 22.90 | 8.50 |

| | | |
|---|---|---|
| Stone Mason | $ 21.50 | 8.50 |
| CARPENTER | | |
| Carpenter | $ 24.90 | 14.50 |
| Piledriver | $ 24.55 | 14.50 |
| CEMENT MASON | $ 21.25 | 8.50 |
| ELECTRICIAN | | |
| Electrician | $ 29.36 | 10.55 |
| Equipment Operator | $ 26.90 | 10.31 |
| Groundsman | $ 17.79 | 8.51 |
| Lineman | $ 30.09 | 10.94 |

When workmen are required to work from bosum chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and T.V. towers, structural steel (open, unprotected, unfloored raw steel), and bridges or similar hazardous locations where workmen are subject to fall, except where using JLG's and bucket trucks up to 75 feet: Add 25% to workman's base rate for 50 to 75 feet, and add 50% to workman's base rate for over 75 feet.

| | | |
|---|---|---|
| IRONWORKER | $ 27.56 | 20.57 |
| LABORER | | |
| Group 1 | $ 21.80 | 12.36 |
| Group 2 | $ 22.05 | 12.36 |
| Group 3 | $ 22.10 | 12.36 |
| Group 4 | $ 22.70 | 12.36 |

GROUP 1: Aging and Curing of Concrete (Any Mode or Method), Asbestos Abatement Worker, Asphalt Plant Laborers, Asphalt Laborers, Batch Truck Dumpers, Carpenter Tenders, Cement Mason Tenders, Cleaning of Machines, Concrete Laborers, Demolition Laborers, Dredging Laborers, Drill Tender, Environmental Laborer - Nuclear, Radiation, Toxic and Hazardous Waste - Level D, Flagmen, Grade Checkers, All Hand Digging and Hand Back Filling, Highway Marker Placers, Landscaping Laborers, Mesh Handlers and Placers, Puddler, Railroad Laborers, Rip-rap and Grouters, Right of Way Laborers, Sign, Guard Rail and Fence Installers (All Types), Signalmen, Sound Barrier Installer, Storm and Sanitary Sewer Laborers, Swampers, Truck Spotters and Dumpers, Wrecking of Concrete Forms, General Cleanup

GROUP 2: Batter Board Men (Sanitary and Storm Sewer), Brickmason Tenders, Mortar Mixer Operator, Scaffold Builders, Burner and Welder, Bushammers, Chain Saw Operator, Concrete Saw Operators, Deckhand Scow Man, Dry Cement Handlers, Environmental Laborers - Nuclear, Radiation, Toxic and Hazardous Waste - Level C, Forklift Operators for Masonry, Form Setters, Green Concrete Cutting, Hand Operated Grouter and Grinder Machine Operator, Jack Hammers, Lead Paint Abatement, Pavement Breakers, Paving Joint Machine, Pipe Layers - Laser Operators (Non-metallic), Plastic Pipe Fusion, Power Driven Georgia Buggy and Wheel Barrow, Power Post Hole Diggers, Precast Manhole Setters, Walk-behind Tampers, Walk-behind Trenchers, Sand Blasters, Concrete Chippers, Surface Grinders, Vibrator Operators, Wagon Drillers

GROUP 3: Air Track Driller (All Types), Asphalt Luteman and Rakers, Gunnite Nozzleman, Gunnite Operators and Mixers, Grout

Pump Operator, Powderman and Blaster, Side Rail Setters, Rail Paved Ditches, Screw Operators, Tunnel Laborers (Free Air), Water Blasters

GROUP 4: Caisson Workers (Free Air), Cement Finishers, Environmental Laborer - Nuclear, Radiation, Toxic and Hazardous Waste - Level A and B, miners and Drillers (Free Air), Tunnel Blasters, and Tunnel Mockers (Free Air), Directional and Horizontal Boring, Air Track Drillers (All Types), Powder Man and Blasters, Troxler and Concrete Tester if Laborer is Utilized

| | | |
|---|---|---|
| PAINTER | | |
| All Excluding Bridges | $ 19.92 | 9.57 |
| Bridges | $ 23.92 | 10.07 |
| PLUMBER | $ 22.52 | 7.80 |
| POWER EQUIPMENT OPERATOR: | | |
| Group 1 | $ 29.95 | 14.40 |
| Group 2 | $ 29.95 | 14.40 |
| Group 3 | $ 27.26 | 14.40 |
| Group 4 | $ 26.96 | 14.40 |

GROUP 1: Auto Patrol, Batcher Plant, Bituminous Paver, Cable-Way, Clamshell, Concrete Mixer (21 cu ft or over), Concrete Pump, Crane, Crusher Plant, Derrick, Derrick Boat, Ditching and Trenching Machine, Dragline, Dredge Engineer, Elevator (regardless of ownership when used for hoisting any building material), Elevating Grader and all types of Loaders, Hoe-type Machine, Hoisting Engine, Locomotive, LeTourneau or Carry-all Scoop, Bulldozer, Mechanic, Orangepeel Bucket, Piledriver, Power Blade, Roller (Bituminous), Roller (Earth), Roller (Rock), Scarifier, Shovel, Tractor Shovel, Truck Crane, Well Point, Winch Truck, Push Dozer, Grout Pump, High Lift, Fork Lift (regardless of lift height), all types of Boom Cats, Multiple Operator, Core Drill, Tow or Push Boat, A-Frame Winch Truck, Concrete Paver, Grade-All, Hoist, Hyster, Material Pump, Pumpcrete, Ross Carrier, Sheepfoot, Sideboom, Throttle-Valve Man, Rotary Drill, Power Generator, Mucking Machine, Rock Spreader attached to Equipment, Scoopmobile, KeCal Loader, Tower Cranes,(French, German and other types), Hydrocrane, Tugger, Backfiller Gurries, Self-propelled Compactor, Self-Contained Hydraulic Percussion Drill

GROUP 2: All Air Compressors (200 cu ft/min or greater), Bituminous Mixer, Concrete Mixer (21 cu. ft. or over), Welding Machine, Form Grader, Tractor (50 hp and over), Bull Float, Finish Machine, Outboard Motor Boat, Brakeman, Mechanic Tender, Whirly Oiler, Tract-air, Road Widening Trencher, Articulating Trucks

GROUP 3: Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4: Bituminous Distributor, Cement Gun, Conveyor, Mud Jack, Paving Joint Machine, Pump, Tamping Machine, Tractor (under 50 hp), Vibrator, Oiler, Air Compressor (under 200 cu ft per minute), Concrete Saw, Burlap and Curing Machine, Hydro Seeder, Power Form Handling Equipment, Deckhand Oiler, Hydraulic Post Driver

| | | |
|---|---|---|
| SHEET METAL WORKER | $ 20.40 | 7.80 |
| TRUCK DRIVER | | |
| Driver (3 Tons and Over), Driver (Truck Mounted Rotary Drill) | $ 23.74 | 14.50 |
| Driver (3 Tons and Under), Tire Changer and Truck Mechanic Tender | $ 23.53 | 14.50 |
| Driver (Semi-Trailer or Pole Trailer), Driver (Dump Truck, Tandem Axle), Driver of Distributor | $ 23.40 | 14.50 |
| Driver on Mixer Trucks (All Types) | $ 23.45 | 14.50 |
| Driver on Pavement Breakers | $ 23.55 | 14.50 |
| Driver, Euclid and Other Heavy Earth Moving Equipment and Low Boy | $ 24.31 | 14.50 |
| Driver, Winch Truck and A-Frame when used in Transporting Materials | $ 23.30 | 14.50 |
| Greaser on Greasing Facilities | $ 24.40 | 14.50 |
| Truck Mechanic | $ 23.50 | 14.50 |
| Truck Tender and Warehouseman | $ 23.20 | 14.50 |

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage

determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

**TO: EMPLOYERS/EMPLOYEES**

**PREVAILING WAGE SCHEDULE:**

**The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.**

**OVERTIME:**

**Overtime is to be paid 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.**

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

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (Executive Order 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

| GOALS FOR MINORITY PARTICIPATION IN EACH TRADE | GOALS FOR FEMALE PARTICIPATION IN EACH TRADE |
|---|---|
| 7.0% | 6.9% |

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4, 3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. The notification shall be mailed to:

**Evelyn Teague, Regional Director**
**Office of Federal Contract Compliance Programs**
**61 Forsyth Street, SW, Suite 7B75**
**Atlanta, Georgia 30303-8609**

4. As used in this Notice, and in the contract resulting from this solicitation, the **"covered area"** is Clay 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

# PROPOSAL BID ITEMS

195078

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**Report Date** 2/19/19

## Section: 0001 - BRIDGE - 026B00093N

| LINE | BID CODE | ALT | DESCRIPTION | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|---|---|---|---|---|---|---|---|---|
| 0010 | 01987 | | DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE | 6.00 | EACH | | $ | |
| 0020 | 02223 | | GRANULAR EMBANKMENT | 95.00 | CUYD | | $ | |
| 0030 | 02351 | | GUARDRAIL-STEEL W BEAM-S FACE | 25.00 | LF | | $ | |
| 0040 | 02355 | | GUARDRAIL-STEEL W BEAM-S FACE A | 100.00 | LF | | $ | |
| 0050 | 02360 | | GUARDRAIL TERMINAL SECTION NO 1 | 2.00 | EACH | | $ | |
| 0060 | 02367 | | GUARDRAIL END TREATMENT TYPE 1 | 2.00 | EACH | | $ | |
| 0070 | 02399 | | EXTRA LENGTH GUARDRAIL POST | 24.00 | EACH | | $ | |
| 0080 | 02545 | | CLEARING AND GRUBBING Less than 1 acre | 1.00 | LS | | $ | |
| 0090 | 02650 | | MAINTAIN & CONTROL TRAFFIC | 1.00 | LS | | $ | |
| 0100 | 02671 | | PORTABLE CHANGEABLE MESSAGE SIGN | 2.00 | EACH | | $ | |
| 0110 | 02726 | | STAKING | 1.00 | LS | | $ | |
| 0120 | 02731 | | REMOVE STRUCTURE | 1.00 | LS | | $ | |
| 0130 | 03299 | | ARMORED EDGE FOR CONCRETE | 48.00 | LF | | $ | |
| 0140 | 03304 | | BRIDGE OVERLAY APPROACH PAVEMENT | 202.50 | SQYD | | $ | |
| 0150 | 08002 | | STRUCTURE EXCAV-SOLID ROCK | 121.00 | CUYD | | $ | |
| 0160 | 08003 | | FOUNDATION PREPARATION | 1.00 | LS | | $ | |
| 0170 | 08019 | | CYCLOPEAN STONE RIP RAP | 442.00 | TON | | $ | |
| 0180 | 08100 | | CONCRETE-CLASS A | 275.80 | CUYD | | $ | |
| 0190 | 08104 | | CONCRETE-CLASS AA | 17.90 | CUYD | | $ | |
| 0200 | 08150 | | STEEL REINFORCEMENT | 33,462.00 | LB | | $ | |
| 0210 | 08151 | | STEEL REINFORCEMENT-EPOXY COATED | 2,180.00 | LB | | $ | |
| 0220 | 08662 | | PRECAST PC BOX BEAM CB17-48 | 264.00 | LF | | $ | |
| 0230 | 08801 | | GUARDRAIL-STEEL W BEAM-S FACE BR | 80.00 | LF | | $ | |
| 0240 | 14003 | | W CAP EXISTING MAIN | 2.00 | EACH | | $ | |
| 0250 | 14004 | | W DIRECTIONAL BORE | 175.00 | LF | | $ | |
| 0260 | 14022 | | W FLUSH HYDRANT ASSEMBLY | 2.00 | EACH | | $ | |
| 0270 | 14059 | | W PIPE PVC 06 INCH | 50.00 | LF | | $ | |
| 0280 | 14089 | | W TAPPING SLEEVE AND VALVE SIZE 1 | 2.00 | EACH | | $ | |
| 0290 | 14094 | | W TIE-IN 06 INCH | 2.00 | EACH | | $ | |
| 0300 | 14105 | | W VALVE 06 INCH | 4.00 | EACH | | $ | |
| 0310 | 14144 | | W LINE MARKER | 5.00 | EACH | | $ | |
| 0320 | 21415ND | | EROSION CONTROL | 1.00 | LS | | $ | |
| 0330 | 24982EC | | CONCRETE COATING Approx. 2113 SF | 1.00 | LS | | $ | |

## Section: 0002 - DEMOBILIZATION &/OR MOBILIZATION

| LINE | BID CODE | ALT | DESCRIPTION | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|---|---|---|---|---|---|---|---|---|
| 0340 | 02569 | | DEMOBILIZATION | 1.00 | LS | | $ | |