



CALL NO. 107

CONTRACT ID. 071109

PERRY COUNTY

FED/STATE PROJECT NUMBER HSIP 5375 (031)

LETTING DATE: April 20, 2007

Sealed Bids will be received in the Division of Construction Procurement and/or the Auditorium located on the 1st floor of the Transportation Cabinet Office Building until 10:00 AM EASTERN DAYLIGHT TIME April 20, 2007. Bids will be publicly opened and read at 10:00 AM EASTERN DAYLIGHT TIME.

ROAD AND/OR BRIDGE PLANS

DBE CERTIFICATION REQUIRED

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

(Check guaranty submitted: Cashier's Check Certified Check Bid Bond)

BID BONDS WHEN SUBMITTED WILL BE RETAINED WITH THE PROPOSAL

DBE General Plan Included

BID

PROPOSAL ISSUED TO: _____

SPECIMEN

Address

City

State

Zip

TABLE OF CONTENTS

PART I	SCOPE OF WORK
	<ul style="list-style-type: none">• PROJECT(S), COMPLETION DATE(S), & LIQUIDATED DAMAGES• CONTRACT NOTES• CONTRACT DBE GOAL• FEDERAL CONTRACT NOTES• GENERAL DBE PARTICIPATION PLAN• ASPHALT MIXTURE• DGA BASE• DGA BASE FOR SHOULDERS• INCIDENTAL SURFACING• FUEL AND ASPHALT PAY ADJUSTMENT• OPTION A• PROJECT IDENTIFICATION SIGN• WASTE AND BORROWED SITES• RIGHT OF WAY NOTES• UTILITY CLEARANCE• UTILITY SPECIFICATIONS• SEWERLINE SPECIFICATIONS• DEPT OF ARMY - NATIONWIDE PERMIT• KPDES STORM WATER PERMIT, BMP AND NOI• COMMUNICATING ALL PROMISES
PART II	SPECIFICATIONS AND STANDARD DRAWINGS
	<ul style="list-style-type: none">• SUPPLEMENTAL SPECIFICATIONS• [SN-7S] STRUCTURAL ADHESIVES WITH EXTENDED CONTACT TIME*• [SP-69] EMBANKMENT AT BRIDGE END BENT STRUCTURES
PART III	EMPLOYMENT, WAGE AND RECORD REQUIREMENTS
	<ul style="list-style-type: none">• FEDERAL-AID CONSTRUCTION CONTRACTS - FHWA 1273• NONDISCRIMINATION OF EMPLOYEES• EXECUTIVE BRANCH CODE OF ETHICS• PROJECT WAGE RATES• NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EEO
PART IV	INSURANCE
PART V	STATEMENT OF INCOMPLETED WORK

PART VI BID ITEMS

PART VII CERTIFICATION

- PROVISIONS RELATED TO SENATE BILL 258 (1994)
- NON-COLLUSION CERTIFICATION
- CERTIFICATION OF ORGANIZATION(S)
- CERTIFICATION OF PERFORMANCE
- CERTIFICATION FOR FEDERAL-AID CONTRACTS
- CERTIFICATION OF BID PROPOSAL / DBE

PART I
SCOPE OF WORK

CONTRACT ID - 071109

ADMINISTRATIVE DISTRICT - 10

PROJECT(S) IDENTIFICATION AND DESCRIPTION:

COUNTY - PERRY

HSIP 5375 (031)

HAZARD-HINDMAN ROAD (KY 550) CONSTRUCT TWO-WAY LEFT TURN LANE FROM JARNIGAN PLACE TO MEADOWBROOK DRIVE ON KY 550 IN AIRPORT GARDENS, A DISTANCE OF 0.52 MILES. GRADE & DRAIN WITH ASPHALT SURFACE. SYP NO. 10-00991.00.

GEOGRAPHIC COORDINATES LATITUDE 37^17'00" LONGITUDE 83^12'00"

COMPLETION DATE(S) AND LIQUIDATED DAMAGES ESTABLISHED:

60 WORKING DAYS

APPLIES TO ENTIRE CONTRACT

SEE STANDARD SPECIFICATIONS FOR LIQUIDATED DAMAGES

CONTRACT NOTES

PROPOSAL ADDENDA

All addenda to this proposal must be incorporated into the proposal when the bid is submitted to the Kentucky Department of Highways. Failure to use the correct and most recent bid sheet(s) may result in the bid being rejected.

BID SUBMITTAL

Bidder must use the Department's Highway Bid Program available on the Internet web site of the Department of Highways, Division of Construction Procurement. (www.transportation.ky.gov/contract)

The Bidder must download the bid items created from the web site to prepare a bid proposal for submission to the Department. The bidder must insert the completed bid item sheets printed from the Program into the bidder's proposal and submit with the disk created by said program.

JOINT VENTURE BIDDING

Joint Venture bidding is permissible. However, both companies MUST purchase a bidding proposal. Either proposal may be submitted but must contain the company names and signatures of both parties where required. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

UNDERGROUND FACILITY DAMAGE PROTECTION

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

CONTRACT DBE GOAL

The Disadvantaged Business Enterprise (DBE) goal established for this contract is 1% of the total value of the contract.

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

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 2004 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
102.08 Irregular Proposals
102.09 Proposal Guaranty

102.10 Delivery of Proposals
102.14 Disqualification of Bidders

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.

FHWA 1273

The requirements of Paragraph VI of FHWA 1273 does not apply to projects with a total cost of less than \$1,000,000.00.

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.

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 READ PUBLICLY. 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 on the last page of this proposal. 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

All bidders are encouraged to submit their General DBE Participation Plan with their bid on the official form. Lowest responsive bidders whose bid packages include DBE Participation Plans may be awarded the contract at the next Awards Committee meeting provided that the DBE goal is met. 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;
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.

The apparent low bidder who does not submit a General DBE Participation Plan with the bid shall submit it within 10 calendar days after receipt of notification that they are the apparent low bidder. The project will not be considered for award prior to submission and approval of the apparent low bidder's DBE Participation Plan.

Detailed DBE Participation Plan forms will be included in the Contractor Package presented to successful bidders following the awarding of the project. The Detailed DBE Participation Plan must be completed and returned to Contract Procurement in accordance with Cabinet policy. A copy of the blank estimate will be included with the Detailed DBE Participation Plan to list sequence items by PCN (Project Control Number).

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 certainty whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the 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 out the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

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

PROMPT PAYMENT

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

CONTRACTOR REPORTING

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

Prime contractors will incorporate a requirement into DBE subcontracts, including supply contracts, that DBEs must provide to the Division of Construction, a copy of all checks received from the prime contractor within seven days of receipt of payment for work performed on Cabinet projects. Checks to DBE subcontractors must include the PCN number, estimate number, and the sequence and quantity.

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.

ASPHALT MIXTURE

The rate of application for all asphalt mixtures shall be estimated at 110 lbs/sy per inch of depth, unless otherwise noted.

DGA BASE

The rate of application for DGA Base shall be estimated at 115 lbs/sy per inch of depth.

DGA BASE FOR SHOULDERS

The rate of application shall be estimated at 115 lbs/sy per inch of depth. Payment for necessary grading and/or shaping of existing shoulders prior to placing of Dense Graded Aggregate Base shall be included in the unit price bid per ton for Dense Graded Aggregate Base.

INCIDENTAL SURFACING

The quantities established in the proposal include estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, and road and street approaches. These items are to be paved to the limits as shown on Standard Drawing RPM 110 or to the limits as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, the paving of the crossroads shall be to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. These areas are to be surfaced or resurfaced as directed by the Engineer and no direct payment will be allowed for placing and compacting.

FUEL AND ASPHALT PAY ADJUSTMENT

These contract items Lot Pay Adjustment, Asphalt Adjustment and Fuel Adjustment, are for possible future payments. Additional monies may need to be setup with an additional change order if existing contract amount is insufficient to pay all items on the contract. Unit price is \$1.00. Quantity will be actual adjustment after work is completed.

OPTION A

The Contractor is advised that the compaction of asphalt mixtures furnished for driving lanes and ramps, at 25mm (1 inch) or greater, on this project will be accepted according to OPTION A in accordance with Section 402 and Section 403 of the *2004 Standard Specification*. Joint cores as described in subsection 402.03.02 are required for surface mixtures only. The compaction of all other asphalt mixtures will be accepted by OPTION B.

SPECIAL NOTE FOR PROJECT IDENTIFICATION SIGNS

When directed by the Engineer, install Project Identification Signs furnished by the Department at each end of the project. The signs furnished by the Department will be approximately 44" X 72" or 72" X 120" aluminum sign blanks with standard color reflective sheeting with the applicable county and project names affixed. The Engineer will determine the size and location of the signs, if any, to be used on the project(s) at the time of construction.

Pick up the signs to be furnished by the Department at the District Traffic Operations Facility. Furnish posts and hardware for mounting the signs. Install the signs at locations determined by the Engineer. Maintain the signs during the duration of the project. Upon completion of the work, remove the signs and return them to District Traffic Operations Facility. Retain possession of the posts and hardware.

The Department will measure installation of the Project Identification Signs in individual units, Each. Payment at the contract unit price Each shall be full compensation for all labor, materials, equipment, and incidentals required for picking up, installing, maintaining, and returning the project identification signs furnished by the Department.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
20588NC	Install Project Identification Signs	Each

SPECIAL PROVISION FOR WASTE AND BORROW SITES

The contractor is advised that it is their responsibility to gain U.S. Army Corp of Engineer's approval before utilizing a waste or borrow site that involves "Waters of the United States". "Waters of the United States" are defined as perennial or intermittent streams, ponds or wetlands. Ephemeral streams are also considered jurisdictional waters, and are typically dry except during rainfall, but have a defined drainage channel. Questions concerning any potential impacts to "Waters..." should be brought to the attention of the appropriate District Office for the Corps of Engineers for a determination, prior to disturbance. Any fees associated with obtaining approval from the U.S. Army Corp of Engineer or other appropriate regulatory agencies for waste and borrow sites is the responsibility of the contractor.

This form must be completed and submitted to FHWA with the PS&E package for federal-aid funded Interstate, Appalachia, and Mega projects. This form shall also be submitted to FHWA for **all** federal-aid projects that fall under conditions No. 2 & 3 outlined elsewhere in this form. For all other federal-aid projects, this form shall be completed and retained in the KYTC project file.

Date: March 14, 2007

Project Name: KY 550 HES Project
Project #: _____ County: _____
Perry
Item #: 10-0991.00 Federal #: _____
FD52-097-7368001R
Letting Date: April 20, 2007

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

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

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

- Per 23 CFR 635.309, the KYTC hereby certify that all relocatees have been relocated to decent, safe, and sanitary housing or that KYTC has made available to relocatees adequate replacement housing in accordance with the provisions of the current FHWA directive(s) covering the administration of the Highway Relocation Assistance Program **and** that at least one of the following three conditions has been met. **(Check those that apply.)**
- 1. All necessary rights-of-way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish these improvements and enter on all land. **Fair market value has been paid or deposited with the court.**
- 2. Although all necessary rights-of-way have not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Trial or appeal of some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish these improvements. **Fair market value has been paid or deposited with the court for most parcels. Fair market value for all pending parcels will be paid or deposited with the court prior to start of construction. (See note.)**

Note: The KYTC shall re-submit a right-of-way certification form for this project prior to the start of construction, verifying that fair market value for all parcels has been paid or deposited with the court.

3. The acquisition or right of occupancy and use of a **few** remaining parcels are not complete and/or some parcels still have occupants. However, all remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. The KYTC is hereby requesting authorization to advertise this project for bids and to proceed with physical construction even though the necessary rights-of-way will not be fully acquired, and/or some occupants will not be relocated, and/or the fair market value will not be paid or deposited with the court for some parcels at the start of construction. KYTC will fully meet all the requirements outlined in 23 CFR 309(c)(3) and 49 CFR 102(j) and will expedite completion of all acquisitions, relocations, and full payments after construction starts. A full explanation and reason for this request, including identification of each such parcel and dates on which acquisitions, payments, and relocations will be completed, is attached to this certification form for FHWA consideration of approval. **(See note.)**

Note: The KYTC may request authorization on this basis only in unique and unusual circumstances. Proceeding to construction of projects on this basis shall be the exception and never become the rule. In all FHWA-approved cases, the KYTC shall make extraordinary efforts to expedite completion of the acquisition, payment for all affected parcels, and the relocation of all relocatees promptly after start of construction.

Approved: _____ Right-of-Way
Supervisor
Printed Name Signature

Approved: Elsworth Turner _____ 03-16-07 _____ KYTC, Director
of ROW & Utilities
Printed Name Signature



3/19/07

Approved: _____ FHWA, Right-of-
Way Officer

Date: _____

Project Name: KY 550 HES Project
 Project #: FD52-097-7368001R County: Perry
 Item #: 10-0991.00 Federal #:
 STPS-5375-(026) R
 Letting Date: April 20, 2007

This project has 17 total number of parcels to be acquired, and 0 total number of individuals or families to be relocated, as well as 0 total number of businesses to be relocated.

- 17 Parcels where acquired by a signed fee simple deed and fair market value has been paid
- Parcels have been acquired by IOJ through condemnation and fair market value has been deposited with the court
- Parcels have not been acquired at this time (*explain below for each parcel*)
- Parcels have been acquired or have a "right of entry" but fair market value has not been paid or has not been deposited with the court (*explain below for each parcel*)
- Relocatees have not been relocated from parcels , , , , , , and (*explain below for each parcel*)

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

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

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

UTILITY NOTES TO BE INCLUDED IN THE PROPOSAL
SPECIAL NOTES FOR UTILITY CLEARANCE
IMPACT ON CONSTRUCTION

PERRY COUNTY, STPS 5375 (028)
FD 52 097 73680 01U

Ky. 550 in Airport Gardens, Ky.
Item No. 10-991

The following companies have facilities to be relocated and / or adjusted on this project:

Windstream Communications
101 Winterberry Drive
Hazard, Kentucky 41701
Attn: Mr. Gary Lady
Ph: 1-606-233-0216

The telephone poles have been relocated that were within the construction limits of the project. After the TV Cable and power supply have been relocated Windstream will remove the old poles. This will be completed By March 30, 2007.

New Wave Communications
5026 South Highway 27
Somerset, Kentucky 42501
Attn: Mr. Darrel Nave
Ph: 1-606-678-9215

The TV Cable needs to be relocated to the new poles set by Alltel communications from Rt. Sta. 40+00 to 47+00. Mr. Lady has been informed of the project and it's letting date. The new power supply and the transfer of lines will be completed by March 30, 2007. This information was supplied by Mr. Darrell Nave of New Wave Communications.

American Electric and Power Co.
400 29th St. West
Charleston, West Virginia 25312
Mr. Glen Combs (Kentucky Power Co.)
Ph: 1-606-436-1291

The pole left of Sta.28+65 can remain in place if we stabilize the area around the pole with granular embankment. A note has been added to the plans and make sure there is enough quantity to cover this. The other pole in question is left of Sta.32+40 in front of the announcer's booth. AEP will move this pole during construction. We can build the storm sewer up to within 10 feet of the existing pole. After backfilling, they can set a new pole behind the storm sewer, move the lines, remove the existing pole and finish the storm sewer. A note will be added

to the plans explaining this. The contractor will be responsible for coordinating this relocation with AEP and The Department of Transportation.

Perry Co. Sanitation District #1
Mr. James Sidwell PCSD #1
Mr. Ora Main, Nesbitt Engineering
227 North Upper Street
Lexington, Kentucky 40507
Ph: 1-859-233-3111

The force main on the project from Sta. 40+00 to 47+00 shall be relocated by the Highway Contractor. Plans and Specifications have been included in the Roadway Plans.

Hazard Water and Gas
Mr. Paul Feltner, City Manager
Henry Spalding, Spalding Engineering
651 Skyline Drive
Hazard, Kentucky 41701-1664
Ph: 1-606-436-2151

The water and gas lines shall be relocated by the Highway Contractor. Plans and Specifications for this relocation have been included in the Roadway Plans.

There are no railroads involved in this project.

PROTECTION OF UTILITIES

The location of utilities provided in the contract document has been furnished by the facility owners and/or by reviewing record drawings and may not be accurate. It will be the roadway contractors responsibility to locate utilities before excavating by calling the various utility owners and by examining any supplemental information supplied by the Cabinet. If necessary, the roadway contractor shall determine the exact location and elevation of the utilities by hand digging to expose utilities before excavating in the area of a utility. The cost for repair and any other associated costs for damage to utilities caused by the roadway contractor's operations shall be borne by the roadway contractor.

The contractor is advised to contact BUD one call system: however, the contractor should be aware that owners of underground utilities are not required to be members of the BUD one call system. It may be necessary for the Contractor to contact the County Court Clerk to determine what utility companies have facilities in the project area.

TECHNICAL SPECIFICATIONS

FOR CONSTRUCTION OF

KY 550 WATER & GAS
UTILITY RELOCATION

STPS 5375 (027)

FD52 097 0550 001-002

ITEM NO. 10-991

PERRY COUNTY, KY

FOR THE
KENTUCKY TRANSPORTATION
CABINET
AND
CITY OF HAZARD, KY

OCTOBER 2003

H. A. Spalding Engineers, Inc.
651 Skyline Drive
Hazard, Kentucky 41701-1664

WATER AND GAS UTILITY RELOCATION
STPS 5375 (027)
FD52 097 0550 001-002
ITEM NO. 10-991
RELOCATE KY 550
HAZARD, PERRY COUNTY, KENTUCKY

INDEX FOR TECHNICAL SPECIFICATIONS

	<u>PAGE</u>
DESCRIPTION & SEQUENCE OF WORK	
Description	TS-1
Sequence	TS-1
SPECIAL NOTES	TS-2 - TS-4
INSTALLATION	TS-5 - TS-11
Testing of Lines	TS-11 - TS-12
One Year Guarantee	TS-12
MATERIAL	
Gas Valve and Box	TS-13
PE Gas Pipe and Fittings	TS-13
Gas Line Tapping Tees (1-1/4" - 4")	TS-13
Gas Service Tubing	TS-13
Liner Pipe/Spacers/End Seals	TS-13 - TS-14
Gas Line Vents	TS-14
GAS Line Markers	TS-14
Service Bore	TS-14
Free Bore	TS-14
Gas and Water Service (or Meter) Reties	TS-15
Relocated Gas Meter	TS-15
PVC Water Pipe - Class 200	TS-15
Ductile Iron Pipe	TS-15 - TS-16
Water Service Tubing	TS-16
Water Valve	TS-16
Water Valve Boxes	TS-17
Std. Blow-Off/Fire Hydrant	TS-17 - TS-18
New Water Meters	TS-18
Relocate 2" Water Meter	TS-18
Relocated 3/4" Water Meters	TS-18
Concrete Work	TS-19 - TS-22
Flowable Fill	TS-22 - TS-23

TECHNICAL SPECIFICATIONS

1.0 DESCRIPTION AND SEQUENCE OF WORK

1.1 Description

The Plans detail the work which must be accomplished for the gas and water relocation activities. The Contractor should pay careful attention to details, cross sections, etc., for all requirements.

1.2 Sequence

The Plans or Specifications do not designate any particular sequence that the Contractor must follow. **However, the Contractor is required to keep customers in service for both water and gas.** Short and intermittent outages are suitable, but these outages must be coordinated with Mr. Vernon Keith of the City of Hazard Gas Company and Mr. Bobby Holland of the City of Hazard Water Company. The Contractor is required to complete his work with the intention of limiting outages of water and gas service to their absolute minimum.

SPECIAL NOTES

- A. Contractors must have personnel adequately trained and certified for installation of fusion welded Polyethylene Pipe. Contractor shall also have personnel adequately trained for welding and other work associated with steel liner pipe. Contractor shall have personnel and be adequately qualified per Code of Federal Regulations 49 CFR 192.283 and 192.285. These specifications are included by reference herein.
- B. All fittings used on PE gas lines are to be Socket Type, fusion weld.
- C. Liner Pipes shall be installed at the grades shown on the Drawings.
- D. All crushed stone for bedding and backfill as directed by the Engineer is considered incidental to other areas of the work.
- E. All concrete on gas and water lines, including the thrust blocks, is a pay item if its use is directed by the Engineer. This will be paid as General Concrete.
- F. Contractors should note that all non metallic lines shall be laid with #12 copper tracer wire. No other substitutes will be accepted such as smaller ga. wire or marking tapes. Also note that the wire shall be looped into valve boxes and be continuous (by twisting or soldering for good contact) for subsequent location activities by the City of Hazard. Note that the loop allows the City to connect impressed voltages for location purposes.
- G. The Contractor should note the gas line requirements as shown on the Drawings concerning documents which outline complete gas line construction specification. The Contractor in accepting any portion of this bid is presumed to be familiar with these requirements. The project will be constructed in accordance with those requirements. These requirements specifically include the GUIDANCE MANUAL FOR OPERATORS OF SMALL GAS SYSTEMS, USDOT, 1991, and Code of Federal Regulations (49CFR Parts 190-199).
- H. Contractor is responsible for contact with Mr. Vernon Keith, City of Hazard Gas Utilities, before any gas line construction, (606)438-1517. Contractor is responsible for contact with Mr. Bobby Holland of City of Hazard Water Utilities before any waterline work, (606) 438-1082.
- I. Valve collars are required at all gas and water valves which are installed in earthen areas. The cost of the valve collars is included in your bid price for valves.
- J. The final precise location of all gas and water lines is the responsibility of the Contractor. The Contractor shall be the final judge of the suitability of installing a line in the location shown on the Plans. The plans serve as a guide to the final line location. The Contractor, because of his extensive knowledge obtained from field work, is highly capable of determining better line locations based on field conditions. Determination of field suitability of laying the line where shown on the Plans is the responsibility of the Contractor. The Contractor, in accepting any portion of this Contract, assumes the responsibility as noted above. The Contractor shall pay special attention to the vertical location of his new lines. Extra cover in certain areas may be required due to construction activities. he Contractor shall use common sense and his knowledge of this highway work required for vertical

location. The warranty period for any gas or waterline portion shall begin one (1) year after the Contractor has completed all of his work including final backslopes in a particular area.

- K. All "TIES" are bid items including all necessary materials required to make the same.
- L. Contractor shall install all liner pipes and vents at depths which will insure protection from his work and lack of conflict with final and temporary roadway requirements.
- M. In any gas line areas which require Class III Stone backfill, adequate earth cover of a minimum of 2 feet shall be installed over the pipes to provide a cushion from the stone. If he considers it in his best interest, the Contractor may use additional earth cover.
- N. Gas line markers shall be used at the locations designated on the plans. Gas line markers are paid at their unit price.
- O. The Contractor is responsible for preparation of "marked up drawings" which show the final As-Built locations of all gas facilities. These drawings shall be delivered to the office of the Utility Relocation Engineer when the gas facilities are complete.
- P. Shop Drawing submission to the Gas Line Relocation Engineer is required of the Contractor. Items which require Shop Drawing approval include:

- Gas line main
- Gas service line
- Tapping tees
- Gas valves
- Gas and water valve boxes
- Liner/vent pipe
- Gas line markers
- D.I. Waterline
- PVC Waterline
- Water valves
- Water meters.

- Q. Unless noted, all waterline fittings are Mechanical Joint. Unless specifically noted, **all waterline fittings including all ells, tees, and valves, shall be equipped with grip rings at all locations.**

The Gas and Water Line Relocation Engineer's address is:

H. A. Spalding Engineers, Inc.
651 Skyline Drive
Hazard, KY 41701-1664
(606) 436-2151
Project Engineer, Hank A. Spalding

Submission shall be complete and shall be in an adequate number to allow the Engineer to keep two (2) complete sets while allowing the Contractor any required sets for his use.

2.0 INSTALLATION

Trenching - Trenching shall be done in a true straight line at all times and fittings shall be used only at the direction of the RESIDENT ENGINEER.

Trenching shall include all clearing and grubbing, including all weeds, briars, trees, and stumps encountered in the trenching. The CONTRACTOR shall dispose of any such material by burning, burial, or hauling away, at no extra cost to the OWNER. Shrubs, hedges, and small trees (3" in dia.) shall be removed and replanted, at no extra cost to the OWNER. Trenching also includes such items as street, road, sidewalk, pipe and small creek crossings; cutting, moving, or repairing damage to fences, poles, or gates and other surface structures, regardless of whether shown on the Plans.

All material encountered in excavation shall be Unclassified. In areas where rock is encountered, a min. of 6" of gravel shall be placed in the bottom of the trench before installation of the pipe. No extra payment will be made for the installation of the gravel. The price for the pipe in place shall also include hauling off of all excavated material.

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

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

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

In case of damage to any existing structures, repair and restoration shall be made at once and backfill shall not be replaced until this is done. In all cases, restoration and repair shall be such that the damaged structure will be in as good condition and serve its purpose as completely as before and such restoration and

repair shall be done without extra charge, except as set forth under the provisions of the General Conditions. Where there is the possibility of damage to existing utility lines by trenching machine, the ENGINEER may order hand search excavation ahead of machine trenching to uncover same, at no extra cost to the OWNER.

All trenches must be dug neatly to lines. Hand trenching may be required by the ENGINEER, at no extra payment, where undue damage would be caused to existing structures and facilities by machine trenching. Trenches in earth shall be dug to just above grade by machine and shall be finished down to grade by hand, unless otherwise specified.

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

All excavation shall be open trenches, except where otherwise called for on the Plans or by special permission of the ENGINEER, for boring or jacking under railroads, sidewalks, and the highway.

When working along the highway the CONTRACTOR shall furnish, install and maintain necessary signs, lights or other warning devices as prescribed by the Kentucky Department of Transportation and shall furnish and employ sufficient flagmen to direct traffic in the construction area all as directed by the Department of Transportation. All signs, devices, flagmen, etc. shall be as prescribed in the "Manual on Uniform Traffic Control Devices, Part VI," latest revision.

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

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

In crossing a road or street a temporary bridge must be placed over the excavation if traffic conditions require its use before backfilling. Where required or when directed by the ENGINEER, road or street crossings will be limited to one-half of travel width before placing temporary bridge over the excavated side. Whenever trenching is performed on public ways, the CONTRACTOR shall furnish and maintain barricades, lanterns, warning sign and signals as far as one block ahead or at locations directed by the governing agency as required for public safety. All such necessary bridges, barricades, lanterns, signs and signals shall be provided by and at the expense of the CONTRACTOR. The CONTRACTOR shall maintain road crossings in a passable condition for traffic until the final acceptance of the work at no cost to the OWNER.

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

Sheeting and shoring of trench will be required of this CONTRACTOR where necessary to protect life, property, or any structure from damage or to maintain maximum permissible trench widths at top of pipe. Sheeting, sheet piling, trench jacks, braces, shores, and stringers shall be used to hold trench walls. These shall be withdrawn as the trenches are being backfilled, after backfill has been placed over pipe at least 18". If their removal, before backfill is completed to surface, endangers adjacent structures such as pipelines, street paving, sidewalk and buildings, then they shall be left in place until such danger has passed and then pulled if possible. Voids caused by sheeting withdrawal shall be backfilled and tamped with thin rammers designed for the purpose so as not to form an obstruction at the ground level. Dewatering of the trenches shall be considered a part of trenching at no extra cost to the OWNER. Dewatering of trenches shall include ground water and storm or sanitary sewage. Suitable pumping and other dewatering equipment is to be provided by the CONTRACTOR to insure the installation of the pipeline structure in a dewatered trench and under the proper conditions. Dewatering shall include all practical means available for prevention of surface runoff into trenches and scouring against newly laid pipe.

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

Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the ENGINEER may order stabilization by various means. Exclusive of dewatering normally required for construction and instability

caused by neglect of the CONTRACTOR, it shall be paid for at unit prices set up in the Contract such as extra excavation, crushed rock for pipe bedding, concrete cradle, or piling.

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

The work of uncovering and backfilling required for locating existing sewers, waterlines and other existing facilities for connection of improvements, or avoidance in location of proposed pipeline, where such uncovering and backfilling is not within trench for improvements, shall be at the CONTRACTOR's expense.

The CONTRACTOR will be required to test all waterlines and appurtenances with water at 150 lbs. per square inch before backfilling. Backfilling before testing will be allowed at the discretion of the ENGINEER at points where danger to the public, or other hazards, demand that such be done immediately after pipe is laid. All leakage apparent after testing must be repaired before backfilling.

Backfilling Trenches:

Backfilling must be started as soon as practicable after pipe has been laid. Packing of earth across and around pipe at six (6') foot intervals and between joints shall be the usual procedure as the laying proceeds. This is in order to avoid danger of mis-alignment from slide, flooding or other causes. The ENGINEER shall be given a maximum of 24 hours for inspection before backfilling. Only earth, or rock less than 2-1/2" size, shall be used as backfill materials up to six (6") inches above top of pipe. No stones or other hard or heavy substances may be thrown directly upon the pipes or into the trench until the above named cover of earth is obtained. Above the 6 or 12 inches above pipe, rock may be used in the backfill to an extent not greater than one-half of the total backfill materials used. If additional earth is required, it must be obtained and placed by the CONTRACTOR. Filling with rock and earth shall proceed simultaneously in order that all voids in the rock may be filled with earth. Where noted on the Plans and within the shoulder of the Kentucky Highways, the CONTRACTOR shall backfill to finish highway grade with DGA. The DGA shall be tamped in six (6") inch layers in accordance with Department of Transportation Specifications. In these areas (if any) DGA will be a pay item. All material hauled away shall be placed at no cost and at a location specified by the ENGINEERS.

No extra charge shall be made for supplying outside materials for backfill or removing excess excavation material from the site of the work.

Extra cost of compaction of backfill on street and driveway crossings and tunnels shall be included in price bid for trenching and backfilling and tunnelling.

Where highway slopes, thin grass, or cover crops are destroyed by trenching, laying, or backfilling operations, and access to them, surface shall be prepared by disking, fertilizing 5 lbs. of 5-10-5 or 6-8-6 per 1,000 square feet and seeding 21 lbs. of Italian Rye Grass per 1,000 square feet, light harrowing, then reseeding with crop destroyed or one part Red Top, three parts certified Kentucky Bluegrass seed mixed together at the rate of 2 lbs. per 1,000 square feet of surface. This shall be included in the price for trenching and backfilling. Requirement of the Department of Transportation, Bureau of Highways, for reseeding shall take precedence over these specifications.

Cleaning Up and Repairing Damage:

The Contract will not be considered complete until all construction structures and equipment and rubbish from construction are cleaned from the site of the work.

All damage to existing grounds and structures caused by construction operations must be repaired or the OWNER compensated for such damage before contract will be considered complete. This does not include replacement of sod, but does include required shaping of ground for sodding or planting of grass and the removal and disposition of all rock from blasting three (3") inches or over in size.

Hauling and Storage:

The CONTRACTOR will be required to deliver all pipe, fittings, valves and valve boxes and other materials and place same as and where required for laying.

Care must be exercised in the handling of all materials and equipment and the CONTRACTOR will be held responsible for all breakage or damage to same caused by his workmen, agents of appliances for handling or moving. Pipes and other castings shall in no case be thrown or dropped from cars, trucks, or wagons to the ground but same shall be lowered gently and not allowed to roll against or strike other castings and unyielding objects violently. Pipe and special castings may be distributed at places that will not interfere with other building operations as unloaded or yard and distributed as required, as the CONTRACTOR may elect.

Valves, valve boxes, jointing materials, meter box covers, castings, fabricated metal, reinforced steel, etc. shall be yarded or housed in some convenient location by the CONTRACTOR and delivered on the ground, as required.

The cost of all hauling, handling, and storage shall be included in the price bid for equipment and materials in place.

The OWNER takes no risk or responsibility for fire, theft, flood, or damage until after the final acceptance of the work.

Testing of Lines (Gas):

On all projects involving the installation of gas pipelines the finished work shall comply with the provisions listed below, or similar requirements which will insure equal or better results.

- ..a. All gas mains shall be given a pressure test to three (3) times the design pressure.
- ..b. Where practicable, gas pipelines shall be tested between line valves or plugs in lengths of not more than 1500 feet.
- ..c. Duration of test shall be determined by volumetric content of test section and instrumentation in order to ensure discovery of all potentially hazardous leaks per TITLE 49, CFR.
- ..d. Where leaks are evident they shall be repaired immediately.
- ..e. All pipe, fittings and other materials found to be defective under test shall be removed and replaced.
- ..f. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with.
- ..g. The CONTRACTOR shall furnish all necessary equipment, including recording gauge and clock used during leakage test and recording pressure charts during duration of test. Recording pressure charts shall remain the property of the ENGINEER at conclusion of test.
- ..h. All gas lines shall be pressure tested in strict accordance with U.S.D.O.T. 49 CFR 192.509 for steel lines and 192.513-C for plastic lines. The Contractor may test the steel line prior to installation and connection with the plastic line. After connection the entire system shall be pressure tested to 100 psi (for three (3) times design pressure) as per 192.513-C. A recording pressure gauge shall be used and pressure charts shall be furnished to the Owner at the completion of the testing and shall be retained for permanent record.

Testing of Lines (Water):

On all projects involving the installation of water pipeline, the finished work shall comply with the provisions listed below, or similar requirements which will insure equal or better results.

..a. All water mains shall be given a hydrostatic test to 150 psi, under which leakage shall not exceed the limits established in Section 4 of AWWA Standard Specifications C600.

..b. Where practicable, pipelines shall be tested between line valves or plugs in lengths of not more than 1500 feet.

..c. Duration of test shall be not less than two hours.

..d. Where leaks are evident on the surface where joints are covered, the joints shall be recaulked, repoured, bolts retightened or relaid, and leakage minimized regardless of total leakage as shown by test.

..e. All pipe, fittings and other materials found to be defective under test shall be removed and replaced.

..f. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with.

..g. The CONTRACTOR shall furnish a recording gauge and clock used during leakage test and recording pressure charts during duration of test. Recording pressure charts shall remain the property of the ENGINEER at conclusion of test.

The new potable waterlines shall not be placed in service, either temporarily or permanently, until they have been thoroughly disinfected in accordance with the following requirements and to the satisfaction of the ENGINEER.

After testing, a solution of hypochlorite using HTH, or equal, shall be introduced into the section of the line being disinfected sufficient to insure a chlorine dosage of at least 50 ppm in the main. While the solution is being applied the water should be allowed to escape at the ends of the line until tests indicate that a dosage of at least 50 ppm has been obtained throughout the pipe. Open and close all valves and cocks while chlorinating agent is in the piping system. The Chlorinated water shall be allowed to remain in the pipe for 24 hours, after which a residual of at least 25 ppm shall be obtained. The disinfection shall be repeated until 25 ppm is obtained, after which time the main shall be thoroughly flushed until the residual chlorine content is not greater than 1.0 ppm.

Following disinfection of the line, bacteriological samples shall be collected and analyzed in accordance with the requirements of Kentucky Department of Natural Resources and Environmental Protection. When the samples have been approved, the new line then may be connected to the system.

One Year Guarantee:

The CONTRACTOR, and through him each subcontractor, in accepting the contract for this construction, or respective portions of the construction covered by these Plans and Specifications, does hereby agree to replace and make good, without expense to the OWNER, any work or material which may be found to be defective within one (1) year from either the date of the final certificate of payment for all highway work or the one year period on any respective portion which the OWNER'S agent considers complete in regards all CONTRACTORS work. The logic for this is that the Road Replacement Project may take longer to complete in all respects than the utility portion. However, the OWNER needs protection that the CONTRACTOR will not damage the line through his work and equipment. The deterioration due to ordinary use and wear and failure of materials furnished by the OWNER are excepted from this guarantee.

This guarantee shall include damage done by settlement of backfills and filling regrade elevations, such damage and sinking of fills being considered as defective workmanship. This shall also include pavement failure.

The CONTRACTOR shall reimburse the OWNER for cost of damage, if any, as well as cost of replacing defective materials or workmanship. If replacements are not made within ten (10) days in case of materials, then the OWNER shall have the right to make replacements and charge cost of same to the CONTRACTOR or his Bondsman.

3.0 MATERIAL:

Gas Valve and Box:

Gas valve to be constructed of Marlex TR 418 material. Valve to be Rockwell Polyvalve Ball Valve, #82211, or approved equal. Valve Boxes for 1-1/4" to ten (10") inch valves shall be telescope type with screw top, of length for thirty-three (33") inch to forty-two (42") inch pipe cover over the top of the pipe. They shall have a minimum inside diameter of 4-1/4" for intersection with an arc base. Valve boxes shall be Mueller No. H-10366 as manufactured by the Mueller Co., Decatur, Ill., or approved equal. Valve box lids shall be Mueller H-10369 or approved equal and marked "GAS". All valve boxes not installed in pavement (bituminous or concrete) shall have installed a valve box collar similar in all respects to the Cloud Company U-235 Valve Retainer Ring, alternate as shown on the detail sheet, or approved equal.

PE Gas Pipe and Fittings:

Gas pipe and fittings shall be polyethylene PE 2406 (Yellow) SDR 11. The pipe shall conform to ASTM D 1248, and ASTM D 3350 for a PE 2406 material. All pipe and fittings shall meet requirements outlined in currently approved ASTM D 2513 specifications, ASTM D 3261 specification, and Department of Transportation Title 49, Part 192. 90 degree elbows to be socket type. All pipe and fittings to be Drisco Pipe 6500 (PE 2406), or approved equal. All PE pipe shall be fused in strict accordance with manufacturers instructions. Contractor is responsible for having personnel adequately trained for this installation.

Gas Line Tapping Tees (1-1/4" - 4"):

Only makers of long standing will be allowed. Use Continental Industries "Eliminator" or approved equal as detailed on the Drawings.

Gas Service Tubing:

All gas service tubing to meet ASTM D2513 and SDR 11, be of Yellow P.E. 2406 material. All service line to be Drisco Pipe 6500, or approved equal.

Liner Pipe:

Liner Pipe of the size and location as shown on the Plans shall be placed. The pipe shall be a new high quality Wrought Steel Schedule 40 Pipe with the same properties as determined by the American National Standard for Schedule 40 welded and seamless wrought steel pipe. Used pipe will not be accepted. The unit price for gas liner pipe includes the cost of purchasing and installing Phillips

Engineering Model PE-MS 500 plastic casing insulators (or approved equal), spaced at five feet on center and for the installation of casing end seals. These end seals shall be Phillips Engineering Company (PECO) Model C Custom, or approved equal. Where designated on the Drawings, Open Cut Liner Pipe over/under proposed highway cross drains shall be utilized with the end treatments as shown on the Drawings. These particular liner pipes shall not receive end seals.

Gas Line Vents:

Gas line vents shall be of the arrangement as shown on the Plans. Size of all anticipated gas line vents is 2" inside diameter. All gas line vent pipe shall be Schedule 40 Welded and seamless Wrought steel pipe. All vent pipe shall be new. Where gas line vents are exposed, they shall receive two (2) coats of "Safety Yellow" epoxy paint. This epoxy paint shall extend to a min. of one foot below regrade. All fittings shall be Full Weld type including the return bend as detailed. The top of the return bend shall be installed 48" above finished grade. The final bend up to the vertical portion shall be a minimum of 24" below finished grade. This final vertical vent portion shall be adequately tamped and braced per good construction technique.

Gas Line Markers:

Gas line markers shall be installed at the locations shown on the Plans. These gas line markers shall be Repnet, Sentry Post, Bno. SPF-48-GP3-Y, Flat Post, Yellow color, 48" height above finish grade. The gas line markers shall be equipped with appropriate line size indication and City of Hazard information which is on file with the manufacturer. Marker to be equipped with standard soil anchor.

Service Bore:

All service bores shall be completed with a "mole" or other device normally used for this purpose. Diameter of service bore shall be approximately 3" to allow easy installation of up to 3 (three) 3/4" service lines. The unit price for all service bores covers only the bore itself, and does not include any service line (you will be paid for any service line installed within the service bore).

Free Bore:

All free bores shall be completed in a similar manner to the installation of bored liner pipe using a suitably sized boring machine or other acceptable equipment. The unit price for free bore does not include any line inside the free bore.

Gas and Water Service(or Meter) Reties:

All gas and water service reties include only that work necessary to discover the location of services, and any fittings or other devices necessary to complete the reconnection of 3/4" gas or water service. 3/4" service line (gas or water) used is payable at your unit price for these items.

Relocated Gas Meter:

The relocate gas meter pay item covers all that work required for the removal and subsequent replacement of an existing residential gas meter. The Contractor shall reuse the existing meter. If existing meter is found or thought to be defective it will be replaced by the City of Hazard.

PVC Water Pipe - Class 200:

Waterline designated as PVC shall be PVC type pressure pipe designed ASTM Class 200. The pipe shall conform to ASTM 2241 for Standard Dimension Ratios, SDR 21 for pressure characteristics. The pipe shall be extruded from clean, virgin, approved class 12454-A PVC compound conforming to ASTM resin Specification D1784. Rubber rings shall conform to ASTM D 1869. This pipe shall be CertainTeed Fluid-Tite PVC Pressure pipe or approved equal. Laying radius of pipe shall in all cases be equal to, or greater than, that listed by the manufacturer of the pipe. All tees, elbows, and bends shall be Mechanical Joint unless noted on the Plans. All Tees, elbows and bends shall also be equipped with Grip Rings unless specifically excluded on the Plans.

Ductile Iron Pipe:

All pipe designated as ductile iron shall be of Grade 60-42-10 material meeting AWWA C151 Minimum physical properties. Thickness of the pipe shall be determined in accordance with ANSI/AWWA C150/A21.50 and shall be Type 4 Bedding Condition except in high traffic areas where Type 5 Bedding shall be used; all pipe shall be thickness Class 50 with the exception of 4" and 3" which shall be thickness Class 51. Joints shall meet the requirements of AWWA C111 for Fastite Joint Pipe ANSI/AWWA C151.51 and Mechanical Joint ANSI/AWWA C111/A21.11. Pipe shall be equal to that manufactured by the U. S. Pipe Company or approved equal. All tees, elbows, and bends shall be Mechanical Joint. The exterior of the pipe shall be furnished with an asphaltic coating. Installation shall be as recommended by the manufacturer in their printed manual. Pulling devices and tie-in devices shall be that normally furnished by the manufacturer for this type of installation. All Tees, elbows and bends shall also be equipped with Grip Rings unless specifically excluded on the Plans. All Tees, elbows and bends shall also be equipped with Grip Rings unless specifically excluded on the Plans. In

lieu of Grip Rings the Contractor may use Retainer Glands.

The Bid Form or Plans may list D.I.M.J., and D.I.C.J. These abbreviations stand for Ductile Iron, Mechanical Joint and Ductile Iron, Compression Joint (Push-On) Pipe, respectively.

Installation shall be as recommended by the manufacturer in their printed manual. Pulling devices and tie-in devices shall be that normally furnished by the manufacturer for this type of installation.

Water Service Tubing (1-1/4", 1", 3/4"):

All service tubing to be Class 200. Acceptable manufacturers are Phillips and Orangeburg. Any other manufacturer shall be approved by the Engineer.

Water Valves:

All valves must be of cast iron with bronze mountings, unless otherwise specified. Only makers of well-known and approved standings who have been making similar devices for a period of at least ten (10) years, prior to the bid date, will be considered. Also, maker shall be prepared to furnish through the bidder, within one (1) week after award is made, complete catalogues or other descriptive matter giving complete details and dimensions of valves they proposed to furnish.

All valves shall be provided with suitable operating devices and adapted for operation in the position in which they are shown on the plans. All screw operated valves shall open by turning to the left.

All valves shall have mechanical joints both ends (unless noted on the Plans) and shall conform to A.W.W.A Specifications D-150, N.R.S. complying to A.W.W.A. C222 and ANSI A21.11.

All 4" through 10" Gate valves shall be resilient seat Gate valves, 200 psi max working pressure, 400 psi test pressure, Mueller A-2370-20, or approved equal. 3" and 2" Gate valves shall be double disc, parallel seat, bronze faces and disc rings with wedging mechanism simple and direct, Mueller A-2380-20, or approved equal. 1-1/2" and 1-1/4" Gate valves shall be Mueller H-10914, bronze Gate valve with solid wedge and F.I.P. thread with appropriate fittings and hand wheel. All valves shall conform to the latest revision of "Specifications for Gate Valves for Ordinary Water Works Service," adopted by A.W.W.A. Test pressure 300 lbs. (min.) per square inch and working pressure 150 lbs. (min. allowable working pressure) per square inch.

Water Valve Boxes:

Valve Boxes for 1-1/4" through eight (8") inch valves shall be telescope type with screw top, of extension length twenty-five (25) through thirty-six (36") inches. Ten (10") inch and twelve (12") inch valve boxes shall have an extension length ranging from eighteen (18") inches to twenty-four (24") inches. These minimum valve box lengths redefine depth of cover over pipe at valve locations. These requirements shall be maintained. Pieces of scrap PVC or ductile iron pipe with lid installed **shall not** be acceptable. Valve boxes shall be Tyler 461-S for ten (10") inch and twelve (12") inch valves, Tyler 562-S for two (2") inch through eight (8") inch valves, or approved equal. All valve boxes shall have a minimum inside diameter of 4-1/4" for intersection with an arc base. All valve box lids shall be manufactured by the same firm as the box and marked WATER. All valve boxes shall have installed a valve box collar similar in all respects to the Cloud Company U-235 Valve Retainer Ring, alternate as shown on the detail sheet, or approved equal.

Std. Blow-off/Fire Hydrants:

All Fire Hydrants connected to 12", 10", 8", and 6" water mains shall have six (6") inch Mechanical Joint connections, use 6" line valve, and be 5-1/4" sized Fire Hydrants. All shall have two hose outlets and one steamer connection designed for 150 pounds working pressure and test of 300 pounds hydrostatic pressure and shall conform to the latest specifications of the A.W.W.A. All working parts shall be bronze. Steamer nozzle shall be National Standard Threads. The two 2-1/2" hose nozzles shall be National Standard Threads. Hydrants shall be designed so that no water will be lost when they are broken off and so they can be repaired in a few minutes with repair kit that is to be furnished.

Design, materials and workmanship shall be similar and equal to the latest stock pattern ordinarily produced by the manufacturer. Length of barrel shall be such to provide thirty (30") inch minimum cover over connecting lines. Working drawings and full description of proposed hydrants shall be submitted to the Engineer before ordering. Hydrant size to be 5-1/4".

Hydrants shall be painted one (1) coat of red paint and two (2) finishing coats of an approved paint of the color directed by the Engineer.

One (1) hydrant wrench and one (1) repair kit including tools for breakable top hydrant shall be furnished. Hydrants shall be set at such elevations that the connecting pipe will have the same depth of cover as the distribution mains. The hydrant shall be set as shown on the Typical Drawings for fire hydrant setting. The back of the hydrant, opposite the pipe connection, shall be firmly wedged against the vertical face of the trench to prevent the hydrant from blowing off the

line. All fire hydrants shall use bridle rods and rod stock shall be installed and shall be protected by a coat of acid-resisting paint. Not less than seven cubic feet of broken stone shall be placed around the base of the hydrant to insure drainage. The backfill around hydrants shall be thoroughly compacted to the grade line in a manner satisfactory to the Engineer. Hydrants shall have the interiors cleaned of all foreign matter before installation. Stuffing boxes shall be tightened and the hydrant shall be inspected in opened and closed positions to see that all parts are in working condition.

Hydrants shall be Mueller Super Centurion 200, Cat. No. A-423, with two (2) hose nozzles and one (1) pumper nozzle, or approved equal.

SPECIAL NOTE: All fire hydrants to be connected using same type (PVC, C900, or D.I.) line as to the main to which they connect. Contractor shall also review the project Drawings to see the requirements for tying all hydrants back to mainline tees. This tying shall consist of either duc-lugs and all-thread or grip rings when PVC pipe is used. When ductile iron pipe is used, retainer glands will be considered equal to the above.

New Water Meters:

All new water meters shall be Badger Model 25, 5/8" x 3/4", or Engineered Approved Equal. The copper setter shall be Mueller No. H-1404-2 with non approved check valve or Engineered Approved Equal. The Corporation Stop shall be Mueller No. H-15008. Service Saddle shall be Mueller No. H-13000. The Plans detail a concrete box with dimensions shown. However, in most cases, a plastic box having the same physical characteristics as that noted on the Drawings shall be acceptable. The concrete box is required only where traffic loads are heavy and frequent. The cover shall be as shown on the Drawings.

Relocate 2" Water Meter:

The Drawings detail the location where the 2" water meter shall be relocated. The Contractor is required to provide a new box of suitable size for the meter. This pay item is to cover the cost of the Contractor's work and material (new box and lid) to relocate this item completely and professionally.

Relocate 3/4" Water Meters:

The Drawings detail the locations where 3/4" water meters shall be relocated. The Contractor is required to provide a new box and lid which matches those specified above for new meter sets. This pay item is to cover the cost of the Contractor's work and material (new box and lid) to relocate this item completely and professionally.

CONCRETE WORK

Special Aggregate, Concrete, and Bituminous Materials Note:

These specifications briefly detail aggregate, concrete, and bituminous materials. Should these specifications be in conflict with specifications issued by the Kentucky Transportation Cabinet, use whatever materials gives superior results on the gas line relocation portion.

(a) Proportioning Mix:

Concrete for gas line utilities is to be proportioned in only one (1) class according to use as follows:

Class "B" for interceptor structures, curbs, gutters, driveways, sidewalks, base courses for highway and street paving, thrust blocks, creek crossings, and valve pads. All Class "B" concrete shall be paid as General Concrete.

Class "B" concrete shall have a minimum compressive strength of 3,000 lbs. per square inch and shall contain not less than 5.5 sacks of cement per cubic yard of concrete. The relative amounts of fine and admixture will not be required.

The water used in mixing must be a minimum required for a plastic mix. No water will be permitted to be used for purpose of hastening mixing and reducing of tamping and vibration.

The water content allowed will be at all times subject to regulations by the Engineer. In the case of Class "A" concrete (if used for gas line work), not more than five and one-half gallons of water to the bag of cement will be allowed in mixing concrete (or proportionately less when slump is about 4" and/or mix is wet), except in cases where, in the judgement of the Engineer, additional water is necessary to obtain proper results.

Batching equipment shall include scales for weighing contents of wheelbarrows and a device for accurately measuring water by the gallon, to be used for proportioning each batch.

In case of ready-mixed concrete, specifications for proportioning of mixes shall be the same, except that from the manufacturer's experience with his own aggregates, he shall vary proportions of sand and coarse aggregate for the greatest density and workability of mix. Prior to actual delivery of concrete, and at any change of proportioning, the manufacturer shall furnish a statement to the Engineer giving the proportion by weight (dry) of cement and of fine and coarse aggregates that will be used in the manufacture of each mix ordered. Proportions must be approved by the Engineer. Otherwise, proportioning of mix and batching plant shall be according to ASTM

Designation C-94, latest revision, specifications for ready-mixed concrete.

(b) Forms:

Forms for concrete with exposed surfaces shall consist of dressed and sized lumber or metal and must match on edges sufficiently to prevent leakage of mortar. Forms shall be built to such accuracy and braced to such an extent that they shall not vary from true lines and surfaces where exposed more than 1/4" before pouring concrete, nor more than 3/8" after pouring. Angle strips (3/4" size) shall be placed in all exposed corners of forms.

(c) Steel Reinforcement Placing:

All such steel shall be delivered in new condition either clean or with only a slight coating of rust. If stored on the site it must be kept under shelter or supporting at least 12" above ground to prevent its becoming coated with dirt and when placed in forms it must be free from scale or dirt.

When placing in forms, steel must be tied together to form a rigid frame before pouring concrete and must be secured in the walls or slabs in such a manner as to insure its holding and position designed for it in the finished work by use of form stands, steel or concrete chairs or spacers. As a rule, steel bars must have a minimum covering of 2" when exposed to air and a minimum of 3" when exposed to earth" of concrete, unless otherwise noted on the plans. All splices shall be 24 diameters long and 1" between spliced bars.

(d) Mixing and Placing:

Concrete shall be thoroughly mixed at least two minutes after all materials, including water, are in the mixer drum having a capacity of at least one sack batch.

Concrete must be poured into forms slowly enough to permit thorough tamping and vibrating to eliminate any honeycombed surfaces.

Concrete pouring will not be permitted under conditions where there is danger of freezing or when materials are frozen. After pouring, concrete must be protected from freezing weather for at least 72 hours.

Ready-mixed concrete delivery facilities pledged to the concrete pour shall be approved by the Engineer before permission will be given to start the pour. The period between termination of placing by one truck and starting by the next shall not be longer than 10 minutes at temperatures above 70° F., nor longer than 20 minutes below 70° F. The concrete in a truck mixer or agitator must be totally discharged within 1-1/2 hours after the introduction of mixing water to the cement and aggregates. The mixing

operation shall begin within 30 minutes after the cement has been intermingled with the aggregates. Otherwise, mixing, mixers, agitators, and inspection shall be according to ASTM Designation C-94, latest revision, specifications for ready-mixed concrete. Non-agitating trucks for hauling concrete from central mixing plant will not be accepted.

(e) Tempering:

All concrete must be kept wet or moist for a period of at least 48 hours after pouring in order to prevent too rapid drying out. In dry weather, wooden forms must be thoroughly wet before concrete is placed in them and must also be kept in this condition during the period above mentioned. Concrete must be covered and kept damp to protect it from the sun as soon as the surfaces are firm enough to allow the placing of such covering or protection.

TESTING CONCRETE

(a) Slump Test:

At least one slump test shall be made before first concrete pour, at the start of pouring any concrete and at each 5 cubic yards deposited during one operation. These shall be made from samples as those taken from cylinder tests and records of same kept therewith. Tests shall be made according to ASTM Designation C-143 and as required under ASTM Designation C-94, for ready-mixed concrete. Mix is designed for a slump test of 2" and not more than 4", except in cases where thin sections would indicate, in the opinion of the Engineer, that a wetter mix is more desirable. The **Contractor** shall furnish necessary equipment for the slump tests.

(b) Cylinder Test:

Cylinder tests will be taken on all important structures such as the storage tank foundation. However, on sewer and waterline jobs requiring only small amounts of concrete per pour, the cylinder tests will be waived. However, should the Engineer have reason to doubt that the concrete being furnished meets the strength requirements, he shall have the right to order cylinder tests according to the following specifications:

At the start of concreting or before, if practical, the **Contractor** shall make from a single batch a set of four (4) cylinders per ASTM Designation C-31. Two (2) shall be tested at 7 days and two (2) at 28 days per ASTM Designation C-39.

At each time when twenty or more cubic yards of concrete are placed during one operation and when the sum of smaller deposits of concrete equal thirty cubic yards since previous test and at any change in the mix four (4) cylinder tests will be required, two tested 7 days and the other two at 28 days per ASTM Designation C-39. In case of ready-mixed concrete, requirement for testing of ASTM Designation C-94 and C-172 shall

be added. Class "A" concrete sampled shall show a compressive strength of not less than 3,000 lbs. per square inch in 7 days and 4,000 lbs. per square inch in 28 days. Class "C" concrete shall have a compressive strength of 3,000 lbs. per square inch in 28 days. Seven (7) day tests on Class "C" concrete shall have the same relation to 28 days requirements.

The **Contractor** shall furnish all equipment for sampling and curing on the job and shall bear the cost of laboratory curing and testing.

FLOWABLE FILL:

Flowable Fill - Use flowable fill consisting of a mixture of cement, sand, Class F fly ash, water, and other materials the Engineer approves.

Proportion flowable fill as follows, per cubic yard batch:

Cement	30 pounds
Fly Ash, Class F	300 pounds
Sand (S.S.D.)	3,000 pounds
Water (Maximum)	500 pounds

Do not allow the loss on ignition for Class F fly ash to exceed 12 percent.

The Engineer may approve other mixtures. The mixtures may include other proportions of the above materials, Class C fly ash, chemical admixtures, or aggregate not conforming to the Standard Specifications of the Kentucky Department of Highways. When deviating from the above specified proportions and materials, make and test a trial batch of at least 4 cubic yards to ensure that the mix will have flow and density characteristics suited for the intended use. Use the ingredients, proportions, and equipment intended for the project, including batching, mixing, and delivery. Provide mixtures that are firm within 3 hours. Refer to the following general guidelines:

- a) Require a minimum flow of 8 inches when tested with a 3 by 6-inch opened ended cylinder modified flow test.
- b) Mixture bleeds freely within 10 minutes.
- c) Require the mixture to support a 150-pound person within 3 hours.

The Engineer will observe all phases of the trial batching for approval. Submit the proposed mixture proportions and test results for the minimum flow, time of bleeding, and time to achieve firmness to the Engineer for review and approval.

The Contractor will cast test cylinders for each 300 cubic yards of flowable fill in place. Do not rod the cylinders, but lightly tap the sides of the mold. Allow the test cylinders to bleed for about 30 minutes, refill, and then cover with a sheet of tough, durable, impervious plastic or cylinder lid. Secure the plastic in place around the mold, within one inch of the top, with a rubber band or string, and

cover the lid with wet burlap. Remove the burlap after 24 hours and cure for 28 days when the ambient shade temperature is 60 to 90 degrees F. Obtain an average compressive strength of 50 to 100 psi at 28 days.

TECHNICAL SPECIFICATIONS
FOR
FD 52 097 73680 01 11
**KY 550 AIRPORT GARDENS
EIGHT INCH DUCTILE IRON FORCE MAIN
RELOCATION**

PERRY COUNTY
HAZARD, KENTUCKY

BOARD OF DIRECTORS

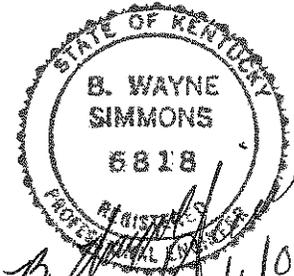
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PERRY COUNTY JUDGE/EXECUTIVE
DENNY RAY NOBLE

FUNDED BY:
KENTUCKY TRANSPORTATION CABINET

MARCH 2004



Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

TABLE OF CONTENTS
TECHNICAL SPECIFICATIONS

DIVISION 0

DIVISION 1 - GENERAL REQUIREMENTS

<u>SECTION NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
01010	Summary of Work	01010-1 thru 01010-3
01060	Regulatory Requirements	01060-1 thru 01060-2
01200	Project Meetings	01200-1 thru 01200-2
01300	Submittals	01300-1 thru 01300-7
01310	Progress Schedules	01310-1 thru 01310-4
01500	Construction Facilities and Temporary Controls	01500-1 thru 01500-5

DIVISION 2 - SITE WORK

<u>SECTION NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
02110	Site Clearing and Grubbing	02110-1 thru 02110-2
02140	Dewatering	02140-1
02200	Earthwork	02200-1 thru 02200-24
02255	Crushed Stone and Dense Graded Aggregate	02255-1 thru 02255-2
02270	Erosion and Sedimentation Control	02270-1 thru 02270-5
02700	Sewage and Drainage Pipe	02700-1 thru 02700-20
02733	Manholes	02733-1 thru 02733-6
02900	Landscaping	02900-1 thru 02900-4

DIVISION 3 - CONCRETE

<u>SECTION NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
03300	Cast-In-Place Concrete	03300-1 thru 03300-17
03740	Modifications to Existing Concrete	03740-1 thru 03740-11

DIVISION 5 - METALS

<u>SECTION NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
05540	Castings	05540-1 thru 05540-3

DIVISION 15 - MECHANICAL

<u>SECTION NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
15100	Small Plumbing Valves, Plumbing Specialties and Service Accessories	15100-1 thru 15100-7

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 SCOPE OF WORK COVERED BY THE CONTRACT

- A. These SPECIFICATIONS and the accompanying DRAWINGS describe the WORK to be done and the materials to be furnished for construction of the Perry County Sanitation District #1, KY 550 Eight Inch Ductile Iron Force Main Relocation.
- B. The proposed WORK is located along State Highway 550 Airport Gardens Road. This project provides for the relocation of an existing eight inch ductile iron force main in preparation for the widening of State Highway 550, at the location shown on the drawings.
- C. Contract WORK includes:

Wastewater Collection System Relocation including:

- 1. Approximately 955 LF of 8" Ductile Iron Class 52 Sewer Line for Force Main.
- 2. Approximately 955 LF of trenching for the new sewer location along with clearing and grading as necessary.
- 3. Erosion control.
- 4. Restore crushed aggregate driveway to downstream connection point.
- 5. Install poured in place concrete restraints.
- 6. Miscellaneous pipe fittings, air release/ vacuum valve and appurtenances.
- 7. Test and backfill new line.
- 8. Complete downstream and upstream mechanical joint tie-ins., test the connections by observation.
- 9. Restore, final dress, seed and protect the construction site.

1.02 RELATED REQUIREMENTS

- A. Refer to the CONTRACT AGREEMENT for a listing of the CONTRACT DOCUMENTS.

1.03 WORK SEQUENCE

- A. This project includes WORK that must be properly sequenced to maintain function of the collection system. Sequencing information in this Section is intended to identify constraints with respect to maintenance of existing service, and to assist the CONTRACTOR in planning the WORK. This information does not relieve the CONTRACTOR from his responsibility to complete the WORK on time.
- B. All existing sewage collection services must remain active during construction and residential and commercial traffic flow shall be maintained during construction.

Temporary pumping and piping facilities for rerouting the flows shall be provided by the CONTRACTOR as required to maintain service.

- C. The CONTRACTOR shall plan, schedule and accomplish the WORK of this Contract to avoid interruption of system service. A draw down test or an inflow test at pump station #4 by the CONTRACTOR is expected to be necessary for pipe connection planning. The final connections may have to be scheduled in the early morning hours to avoid excessive flow. Should any such interruptions become necessary, the CONTRACTOR shall notify the OWNER and ENGINEER in writing of such need as far ahead of the interruption as possible, but in no case less than one (1) week. The CONTRACTOR must state in his notification of need to interrupt the existing system at least the following:
 - 1. Construction sequence to minimize the interruption time, and propose time-of-day that WORK would be accomplished.
 - 2. Expected length of time of the interruption.
 - 3. Alternate procedures in the event the expected time is exceeded.
 - 4. List of all equipment and material that must be on hand to complete the WORK.
- D. The ENGINEER shall review the CONTRACTOR'S written notification, and the ENGINEER and OWNER must concur that the proposed interruption is acceptable prior to commencement of the interruption

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 01060

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 LABOR REGULATIONS ON KENTUCKY PUBLIC WORKS PROJECTS

- A. All Public Works Project submitted for BIDS and constructed by a Public Authority in the State of Kentucky are subject to the provisions of the Kentucky Revised Statutes, Chapter 337, entitled Wages and Hours as may be amended from time to time.

CONTRACTORS are hereby advised that both State and Federal labor wage decisions are applicable to this contract. This does not guarantee nor infer that employees may be obtained for these rates. Should the CONTRACTOR choose or find it necessary to pay higher wage rates, the OWNER will not be liable for such higher rates.

1.02 ACCESS TO WORK

- A. The representative of the OWNER, the ENGINEER, the U.S. Environmental Protection Agency, the Kentucky Division of Water, the Kentucky Transportation Cabinet, OSHA and related agencies shall have access to the WORK wherever it is in preparation or progress, and the CONTRACTOR shall provide proper facilities for such access and inspection.

1.03 LOCAL GOVERNMENT REQUIREMENTS

- A. The CONTRACTOR and all SUBCONTRACTORS and SUPPLIERS shall fully comply with all local government requirements.
- B. Construction debris must be disposed in accordance with the local Solid Waste Management Plan, and with DWM regulatory requirement.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used

01060-1

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 01200

PROJECT MEETINGS

PART 1 GENERAL

1.01 PRE-CONSTRUCTION CONFERENCES

- A. Prior to commencing the work, a pre-construction conference will be held and representatives of the following organizations shall have at least one (1) representative in attendance:

OWNER, ENGINEER, CONTRACTOR, major Subcontractors, and representatives of the appropriate State and Federal agencies as they choose.

- B. The pre-construction conference will be for the purpose of reviewing procedures to be followed concerning the orderly flow of required paperwork; coordination of the various parties involved with the project, review of shop drawing submittals, contract time, liquidated damages, payment estimates, change orders, and other items to the parties involved.

1.02 PROGRESS MEETINGS

- A. A progress meeting will be held once each month to review progress of the work, discuss problems encountered or foreseen, coordinate for the following month with the OWNER, and answer any questions as they arise.
- B. The organizations listed under 1.01 above shall have at least one representative in attendance at each meeting.

1.03 SCHEDULE UPDATE MEETINGS

- A. Schedule update meetings shall be in accordance with schedule requirements in Division 1, Section 01310.

PART 2 PRODUCTS

Not Used.

01200-1

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

PART 3 EXECUTION

Not Used.

END OF SECTION

01200-2

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This section specifies the general methods and requirements of submissions applicable to the following WORK-related submittals:
- (a) construction schedule
 - (b) schedule of submittals
 - (c) SHOP DRAWINGS, product data, samples
 - (d) construction photographs
 - (e) inspection videotape recordings.

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

1.02 CONSTRUCTION SCHEDULE

- A. In addition to the progress schedule requirements specified in Article 3 of the General Conditions, the CONTRACTOR shall, within ten (10) days after the NOTICE TO PROCEED provide and submit to the ENGINEER for review the schedule he plans to maintain in order to successfully construct the WORK within the time allotted. The schedule shall account for all WORK of the CONTRACTOR and his SUBCONTRACTORS.
- B. The CONTRACTOR shall update the schedule information monthly and submit the update information to the ENGINEER at the same time the pay estimate is prepared. The schedule shall contain all of the items of the periodic estimate and pay schedule.
- C. The CONTRACTOR bears full responsibility for scheduling all phases and stages of the WORK including his SUBCONTRACTOR WORK to insure its successful prosecution and completion within the time specified in accordance with all provisions of these SPECIFICATIONS.

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

D. Refer to Section 01310 for additional requirements.

1.03 SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND
O & M INSTRUCTIONS

A. SHOP DRAWINGS

1. SHOP DRAWINGS, as defined in the General Conditions, and as specified in the technical SPECIFICATIONS include, but are not necessarily limited to custom-prepared data such as fabrication and erection/installation DRAWINGS, scheduled information, setting diagrams, actual shop WORK manufacturing instructions, custom templates, special wiring diagrams, coordination DRAWINGS, individual system of equipment inspection and test reports including performance curves and certifications, as applicable to the WORK.
2. All details on SHOP DRAWINGS submitted for review shall show clearly the relation of the various parts to the main member and lines of the structure, and where correct fabrication of the WORK depends upon field measurements, such measurements shall be made and noted on the SHOP DRAWINGS before being submitted for review by the ENGINEER.
3. Unless otherwise specified, the CONTRACTOR is not required to resubmit SHOP DRAWINGS on existing equipment. The CONTRACTOR shall, however, be responsible for obtaining all SHOP DRAWINGS and/or other information from the manufacturer necessary to complete the installation and startup of existing equipment.

B. Product Data

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

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

instructions and recommended spare parts listing, and printed product warranties, as applicable to the WORK.

C. Samples

1. Samples specified in individual sections, included, but are not necessarily limited to, physical examples of the WORK such as sections of manufactured or fabricated WORK, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effects, graphic symbols, and units of WORK to be used by the ENGINEER or OWNER for independent inspection and testing, as applicable to the WORK.

D. Operation and Maintenance Instructions

1. O&M instructions shall conform to Article 5 of the General Conditions (Section 00710) and the particular requirements of the individual sections.

1.04 CONTRACTOR'S RESPONSIBILITY

- A. The CONTRACTOR shall review SHOP DRAWINGS, product data and samples prior to submission to determine and verify the following:
1. Field measurements.
 2. Field construction criteria.
 3. Catalog numbers and similar data.
 4. Conformance with the SPECIFICATIONS.
- B. All SHOP DRAWINGS submitted by SUBCONTRACTORS for review shall be sent directly to the CONTRACTOR for preliminary checking. The CONTRACTOR shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
- C. The CONTRACTOR shall check all SUBCONTRACTOR'S SHOP DRAWINGS regarding measurements, size of members, materials, and details to satisfy himself that they conform to the intent of the DRAWINGS and SPECIFICATIONS. DRAWINGS found to be inaccurate or otherwise in error shall be returned to the SUBCONTRACTORS for correction before submission thereof.
- D. Each shop drawing, WORKING drawing, sample and catalog data submitted by the CONTRACTOR shall have affixed to it a certification statement, signed by the CONTRACTOR. The certification shall state that

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

the CONTRACTOR represents that he has determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and has checked and coordinated each item with other applicable review SHOP DRAWINGS and all Contract requirements.

- E. The CONTRACTOR shall notify the OWNER in writing, at the time of submittal, of any deviations in the submittals from the requirements of the CONTRACT DOCUMENTS.
- F. The CONTRACTOR should include the notation "Critical Path" on critical path submittals.
- G. The review of SHOP DRAWINGS, samples or catalog data by the ENGINEER shall not relieve the CONTRACTOR from his responsibility with regard to the fulfillment of the terms of the Contract.
- H. No portion of the WORK requiring a shop drawing, WORKING drawing, sample or catalog data shall be started nor shall any materials be fabricated or installed prior to the review or qualified review SHOP DRAWINGS and data shall be at the CONTRACTOR'S risk. The OWNER will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- I. PROJECT WORK, materials, fabrication, and installation shall conform with reviewed SHOP DRAWINGS, WORKING DRAWINGS, applicable samples, and catalog data.

1.05 SUBMISSION REQUIREMENTS

- A. The CONTRACTOR shall make submittals promptly in accordance with the accepted schedule, and in such sequence as to cause no delay in the WORK or in the WORK of any other CONTRACTOR.
- B. Number of submittals required:
 - 1. SHOP DRAWINGS: Submit six (6) copies.
 - 2. Operation and Maintenance Instructions: Submit six (6) copies.
- C. Submittals shall contain:
 - 1. The date of submission and the dates of any previous submissions.
 - 2. The PROJECT title, contract number, and submittal number.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

3. CONTRACTOR identification.
4. The names of:
 - (a) CONTRACTOR
 - (b) SUPPLIER
 - (c) Manufacturer
5. Identification of the product, with the specification section number.
6. Field dimensions, clearly identified as such.
7. Relation to adjacent or critical features of the WORK or materials.
8. Applicable standards, such as ASTM or Federal Specification numbers.
9. Identification of revisions on re-submittals.
10. An 8-inch x 3-inch blank space for CONTRACTOR'S and ENGINEER'S stamps.

1.06 RESUBMISSION REQUIREMENTS

- A. The CONTRACTOR shall make any corrections or changes in the submittals required by the ENGINEER and resubmit until accepted, in accordance with the following:
 1. SHOP DRAWINGS and Product Data:
 - (a) Revise initial DRAWINGS or data, and resubmit as specified for the initial submittal.
 - (b) Indicate any changes which have been made other than those requested by the ENGINEER.
 2. Samples:
 - (a) Submit new samples as required for initial submittal.

1.07 CONSTRUCTION PHOTOGRAPHS

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

1. Photographs are required on this PROJECT and are the responsibility of the CONTRACTOR. Photographs shall be 3" x 5" color snapshots taken with a standard 35mm or digital camera. CONTRACTOR shall be responsible for the taking, development, labeling and organizing of the photographs. All photographs shall be identified as to location, date and subject matter. Photographs shall be arranged in a photo album(s) by location, subject matter and date taken.
2. The CONTRACTOR, before final payment is made, shall deliver one (1) set of photographic prints and negatives to the OWNER one (1) set of prints to the ENGINEER. Both sets of prints shall be arranged in a photo album(s) and labeled as outlined above.
3. No pay item has been set up for the photographs. The CONTRACTOR shall allow for a minimum of 50 - 3" x 5" color photographs (taken and arranged as outlined above) in his BID.

1.08 GENERAL PROCEDURES FOR SUBMITTALS

A. Coordination of Submittal Times:

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

1.09 SCHEDULE OF VALUES AND PAYMENTS

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

PART 2 PRODUCTS

Not Used.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

PART 3 EXECUTION

Not Used.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 01310

PROGRESS SCHEDULES

PART 1 GENERAL

1.01 GENERAL

A. Scheduling Responsibilities

1. In order to provide a definitive basis for determining job progress, a construction schedule of a type approved by the OWNER will be used to monitor the PROJECT.
2. The CONTRACTOR shall be responsible for preparing the schedule and updating on a monthly basis. It shall at all times remain the CONTRACTOR'S responsibility to schedule and direct his forces in a manner that will allow for the completion of the WORK within the contractual period.

B. Construction Hours

1. No WORK shall be done between 8:00 p.m. and 7:00 a.m. nor on Sundays or legal holiday without the written permission of the OWNER. However, emergency work may be done without prior written permission.
2. If the CONTRACTOR, for his convenience and at no additional cost to the OWNER, should desire to carry on his WORK at night or outside the regular hours, he shall submit a written request to the ENGINEER and shall allow nine (9) days for satisfactory arrangements to be made for inspecting the WORK in progress. If permission is granted, the CONTRACTOR shall light the different parts of the PROJECT as required to comply with all applicable Federal, State and local regulations. The CONTRACTOR shall also revise his schedule as appropriate at the next monthly schedule update meeting to reflect the changes in working hours.

C. Progress of the WORK

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

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

and equipment, to assure completion of the WORK in the time established by the Contract.

2. The CONTRACTOR agrees that whenever it becomes apparent from the current monthly Schedule update that delays have resulted and, hence, that the Contract completion date will not be met or when so directed by the OWNER, he will take some or all of the following actions at no additional cost to the OWNER.
 - (a) Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of WORK.
 - (b) Increase the number of working hours per shift, shifts per working day or days per week, the amount of construction equipment, or any combination of the foregoing to substantially eliminate the backlog of WORK.
 - (c) Reschedule activities to achieve maximum practical concurrence of accomplishment of activities, and comply with the revised schedule.
 - (d) The CONTRACTOR shall submit to the OWNER or the OWNER'S representative for review a written statement of the steps he intends to take to remove or arrest the delay to the critical path in the accepted schedule. If the CONTRACTOR should fail to submit a written statement of the steps he intends to take or should fail to take such steps as required by the Contract, the OWNER may direct the level of effort in manpower (trades), equipment, and work schedule (overtime, weekend and holiday work, etc.), to be employed by the CONTRACTOR in order to remove or arrest the delay to the critical path in the accepted schedule, and the CONTRACTOR shall promptly provide such level of effort at no additional cost to the OWNER.

1.02 CONSTRUCTION SCHEDULE

A. Schedule Submissions

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

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

revise and resubmit schedule until it is acceptable and accepted by the OWNER or the OWNER'S representative.

1.03 SCHEDULE UPDATES

A. Monthly Meetings

1. A monthly Schedule Update Meeting will be held in conjunction with the applicable progress meeting at the construction site to review and update the Schedule. The Schedule Update Meetings will be chaired by the OWNER or the OWNER'S representative and attended by the CONTRACTOR and the ENGINEER. Actual progress of the previous month will be recorded and future activities will be reviewed. The duration of activities and their logical connections may be revised as needed. Decisions made at these meetings and agreed to by all parties are binding with the exception that no contractual completion dates will be modified without formal written requests and acceptance as specified herein.

B. Conditions Requiring Revisions are as follows:

1. When a delay in completion of any WORK item or sequence of WORK items results in an extension of the PROJECT completion.
2. When delays in submittals or deliveries or work stoppages are encountered which make re-planning or rescheduling of the WORK necessary.
3. When the schedule does not represent the actual prosecution and progress of the PROJECT.

1.04 CONTRACT COMPLETION TIME

A. Causes for Extensions

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

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

supporting evidence, make findings of fact and will advise the CONTRACTOR in writing thereof.

B. Request for Time Extension

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

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SANITARY FACILITIES

- A. The CONTRACTOR shall construct and maintain sanitary facilities for his employees and employees of the subcontractors. The CONTRACTOR shall, at completion of the Contract Work, properly dispose of these sanitary facilities.

1.02 UTILITIES

- A. The CONTRACTOR shall be totally responsible for installation, maintenance and cost of his and his sub-contractor's telephone service.
- B. The CONTRACTOR shall install meters at all his points of use of electric, water, and natural gas utilities. The CONTRACTOR shall pay the monthly billed cost from the servicing utility for the CONTRACTOR'S use of these utilities. The CONTRACTOR shall pay any initial installation costs.
- C. If CONTRACTOR requires other utilities, he shall obtain and pay for them.

1.03 MAINTENANCE OF SERVICE IN EXISTING UTILITIES

- A. Where the existing utilities must be disturbed during construction under this Contract, their operation and function shall be maintained by the CONTRACTOR to such a degree that service to customers will be interrupted for minimum time periods only. Such disturbances and any maintenance use of these lines shall constitute no cost to the OWNER. The OWNER shall be notified of interruptions in sufficient time to prepare for them and shall agree to the hour, date, and duration of them before they are undertaken.
- B. Should shutdowns in service be in excess of the time of duration agreed upon, and such excessive shutdown time be due to the CONTRACTOR'S negligence, faulty Work and/or inability to perform, then and in that event, the CONTRACTOR shall be held liable to the OWNER for any and all

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

damages that may accrue to the OWNER, by reason of such excessive shutdown periods.

- C. Digging through services with trenching machines will not be permitted. Upon damage to utility services, such services shall be repaired immediately and tested to the satisfaction of the ENGINEER. The CONTRACTOR shall notify all utility users of impending interruption of service and shall be responsible for all damage resulting from same. Payment for necessary disconnection and reconnection of utility services shall be included as a part of the CONTRACTOR'S bid and no extra compensation will be made for same.
- D. The CONTRACTOR shall at all times maintain on hand an adequate supply of repair materials and tools with which to make repair to damaged water, gas and sewer lines. Should the CONTRACTOR inadvertently damage existing utilities, he shall make immediate repair thereto and in no event shall he leave the site before such repair has been made and proven to be successful.
- E. As far as possible, the locations and sizes of existing mains are indicated on the drawings; however, exact locations, pipe materials and sizes cannot be guaranteed. It shall be the responsibility of the CONTRACTOR to locate and uncover existing lines. The CONTRACTOR shall provide all connecting fittings of the correct size and type for each connection to existing lines.

1.04 PROPERTY PROTECTION

- A. Care is to be exercised by the CONTRACTOR in all phases of construction, to prevent damage and/or injury to the OWNER'S and/or other property.
- B. The CONTRACTOR shall avoid unnecessary injury to trees and shall remove only those authorized to be removed by written consent of the OWNER. Fences, gates, and terrain damaged or disarranged by the CONTRACTOR'S forces shall be immediately restored in their original condition or better.

1.05 CONSTRUCTION WARNING SIGNS

- A. The CONTRACTOR shall provide construction warning signs for each location where he is working in the state highway right-of-way or in City or County streets. He will further provide flag men as required and shall

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

abide by all Kentucky Transportation Cabinet, Department of Highways safety rules, including size, type and placement of construction signs.

1.06 RESIDENT OBSERVER OFFICE

- A. The CONTRACTOR shall provide at the beginning of construction and remove at the completion of construction, an office for the exclusive use of the Resident Observer.

The office shall be furnished with a desk, chair and plans table. The office shall be equipped with a one-drawer steel filing cabinet, telephone, electric lights, and plug-in duplex receptacles.

During occupancy, the office shall be supplied with janitor services, adequate heat and air conditioning.

Subject to approval of the ENGINEER, the CONTRACTOR may furnish office space in an existing building or a trailer.

1.07 EXCAVATION

- A. No separate payment for solid rock excavation will be made under this Contract, unless specifically noted on the Bid Form. All excavation shall be considered unclassified, except in locations where solid rock excavation is paid for on a unit price basis.

1.08 ACCESS ROADWAYS

- A. The CONTRACTOR shall construct all access roadways needed during construction, and the planned access roadways for the completed project. The CONTRACTOR shall maintain access roadways continuously during the construction period.
- B. The CONTRACTOR shall maintain all existing roadways within the project site which are used for any purpose by construction operations. The degree and frequency of maintenance shall be adequate to keep existing roadways in a condition at least equal to their condition prior to construction. Road maintenance shall include dust control and sweeping.

1.09 RESPONSIBILITY FOR TRENCH SETTLEMENT

- A. The CONTRACTOR shall be responsible for any settlement caused by the construction, that occurs within one (1) year after the final acceptance of this Contract by the OWNER. Temporary fences shall be provided at no extra cost to the OWNER wherever necessary to keep livestock away from the construction area. Ornamental shrubbery and tree branches shall be

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

temporarily tied back, where appropriate, to minimize damage. Damaged limbs shall be trimmed and damaged tree trunks shall be treated with wound dressing.

1.10 DAMAGE TO CROPS, LIVESTOCK AND VEGETATION

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

1.11 WASTE DISPOSAL

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

1.12 CONTRACTOR'S TRAILERS AND MATERIAL STORAGE

- A. The location of the CONTRACTOR'S and Subcontractor's office, work trailers and parking areas for the project shall be subject to the OWNER'S approval.
- B. The CONTRACTOR'S and Subcontractor's material storage yards for the project shall be subject to the OWNERS approval.

1.13 JURISDICTIONAL DISPUTES

- A. It shall be the responsibility of the CONTRACTOR to pay all costs that may be required to perform any of the work shown on the Drawings or specified herein in order to avoid any work stoppages due to jurisdictional disputes. The basis for subletting work in question, if any, shall conform with precedent agreements and decisions on record with the Building and Construction Trades Department, AFL-CIO, dated June, 1973, including any amendments thereto.

PART 2 PRODUCTS

Not Used.

01500-4

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

PART 3 EXECUTION

Not Used.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02110

SITE CLEARING AND GRUBBING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Furnish all labor and equipment required and perform all clearing, grubbing and stripping of topsoil complete as shown on the DRAWINGS and as specified herein.

1.02 RELATED WORK

None this section.

1.03 SUBMITTALS

None this section.

PART 2 PRODUCTS

None in this Section.

PART 3 EXECUTION

3.01 GENERAL

- A. The proposed areas designated for embankment construction, impoundments, ditches and channel changes, borrow pits, etc., (except any portions thereof that may be reserved) shall be cleared of all trees, timbers, brush, stumps, rubbish and other debris. All this material, unless otherwise specified, shall be burned or otherwise removed, as may be directed and without injury to adjoining property. Burning must be in compliance with any applicable regulations covering open burning and smoke abatement. Where clearing is to be done, all stumps and roots shall be grubbed. No debris will be allowed to be left under or in the embankments. In felling trees near structures and wire lines, necessary precaution must be exercised in order to prevent damage to wire lines, structures, the facilities of others. Payment for all clearing and grubbing shall be incidental to the prices bid for doing other work.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

3.02 TREES

- A. Trees (3" caliper and larger) shall not be disturbed by construction without written permission from the OWNER, except in those areas to be cleared. Trees disturbed by construction shall be replaced by the CONTRACTOR with same size and type at no additional cost to the OWNER.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02140

DEWATERING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Furnish all labor and equipment required to dewater all excavations. Dewatering of all excavations shall be the responsibility of the CONTRACTOR, and no additional compensation will be allowed for same unless specifically included as a BID item.

1.02 RELATED WORK

- A. Earthwork is included in Division 2, Section 02200.

1.03 SUBMITTALS

Not applicable to this CONTRACT.

PART 2 PRODUCTS

Not applicable to this CONTRACT.

PART 3 EXECUTION

3.01 GENERAL

- A. Dewatering equipment shall be of adequate size and quantity to assure maintaining proper conditions for installing pipe, concrete, backfill or other material or structure in the excavation. Dewatering shall include proper removal of any and all liquid, regardless of its source, from the excavation and the use of all practical means available to prevent surface runoff from entering any excavation. No extra payment shall be made for dewatering.
- B. No sanitary sewer shall be used for the disposal of water from trenches or other excavations. (From "10-States' Standards)

END OF SECTION

02140-1

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02200

EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. Extent of earthwork is indicated on the DRAWINGS.
 - 1. Preparation of sub-grade for embankments and outlet works is included as part of this WORK.
 - 2. Engineered fill course for support of concrete slabs is included as part of this WORK.
 - 3. Backfilling of structures, headwalls, channels, manholes and trenches is included as part of this WORK.
- B. Excavation for Mechanical/Electrical WORK

Excavation and backfill required in conjunction with underground mechanical and electrical appurtenances is included as WORK of this Section.
- C. Definition

“Excavation” consists of removal of material encountered to sub-grade elevations indicated and subsequent disposal of materials removed.

1.02 RELATED WORK

- A. Dewatering is included in this Division, Section 02140.
- B. Erosion and sedimentation control is included in this Division, Section 02270.
- C. Piping is included in this Division, Section 02610 and 02700.
- D. Landscaping is included in this Division, Section 02900.

1.03 QUALITY ASSURANCE

A. Codes and Standards

Perform excavation WORK in compliance with applicable requirements of governing authorities having jurisdiction.

B. Testing and Inspection Services

Employ, at CONTRACTOR'S expense, testing laboratory acceptable to the OWNER and the ENGINEER to perform soil testing and inspection service for quality control during earthwork operations.

1.04 SUBMITTALS

A. Test Reports

Submit following reports directly to the ENGINEER from the testing services, with copy to CONTRACTOR:

1. Test reports on borrow material.
2. Verification of each cutoff trench elevation and embankment sub-grade elevation.
3. Field density test reports, one per 3,000 S.F. per lift.
4. One optimum moisture-maximum dry density curve for each type of soil encountered, per ASTM D-698.

1.05 JOB CONDITIONS

A. Site Information

1. Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that OWNER will not be responsible for interpretation or conclusions drawn therefrom by CONTRACTOR. Data are made available for convenience of CONTRACTOR.
2. Additional test borings and other exploratory operations may be made by CONTRACTOR at no cost to OWNER.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

B. Existing Utilities

Locate existing underground utilities in areas of WORK. If utilities are to remain in place, provide adequate means of protection during earthwork operations.

C. Use of Explosives

Do not bring explosives onto site or use in WORK without prior written permission from authorities having jurisdiction. Contact Kentucky Department of Mines and Minerals for information. CONTRACTOR is solely responsible for handling, storage, and use of explosive materials when their use is permitted.

D. Protection of Persons and Property

1. Barricade open excavations occurring as part of this WORK and post with warning lights.
 - a. Operate warning lights as directed by authorities having jurisdiction.
 - b. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

PART 2 PRODUCTS

2.01 SOIL MATERIALS

A. Definitions

1. Sub-base material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand.
2. Backfill and fill materials: Satisfactory soil materials free of debris, waste, frozen materials, vegetable, and other deleterious matter.

3. Embankment Materials

All fill materials shall be obtained from required excavations and from the proposed borrow areas if shown on the CONTRACT DRAWINGS. The selection, blending, routing and disposition of materials shall be subject to the approval of the ENGINEER.

a. Materials - Impervious Clay Core

Core fill materials shall consist of residual overburden soils within the proposed excavation and borrow areas. These soils consist primarily of brown clays classified as CH or CL using the Unified Soil Classification System.

Fill materials shall contain no sod, organic topsoil, brush, roots or other deleterious materials. Fill material shall be rock free and shall be approved by the ENGINEER prior to fill placement.

b. Materials - Random Earth and Rock Zones

Fill material shall consist of non-organic soil or weathered rock with a maximum particle size of 12 inches. Rock materials from the borrow area shall be excavated by ripping methods. No blasting will be allowed without written permission from the OWNER.

2.02 EMBANKMENT DRAINAGE MATERIALS

- A. No. 57 crushed stone is specified in this Division, Section 02255.
- B. Filter fabric for use with the embankment drain location at the downstream face of the impervious core, where called for in this Section, on the DRAWINGS or as determined by the ENGINEER shall be Mirafi 140N as manufactured by Celanese Corporation, New York, NY 10036, or equal.

PART 3 EXECUTION

3.01 STRIPPING AND TOPSOILING

- A. Before excavation and grading is commenced for structures, the embankment, outlet works or other WORK described hereinafter (except pipelines and manholes) or before material is removed from borrow pits, (impoundment area) the topsoil shall be removed from the areas affected

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

and stockpiled. When final grading is accomplished, the topsoil shall be spread evenly over the disturbed area, except within the impoundment area. Rough grading shall have been carried approximately 6 inches below finished grade (except solid rock, where it shall be carried 12 inches below finished grade) and brought back up to grade with topsoil as set out herein.

3.02 EXCAVATION

- A. All excavation to be unclassified standard excavation includes excavation to sub-grade elevations indicated including excavation of earth, rock (at depth shown on DRAWINGS), bricks, wood, cinders, and other debris.
- B. Differing Site Conditions
 - 1. Should the CONTRACTOR, during the course of construction, encounter subsurface or latent physical conditions differing materially from the subsurface information provided, or unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in this CONTRACT, he shall immediately notify the ENGINEER in writing of the conditions encountered.
 - 2. Upon receipt of such notice, the ENGINEER shall promptly investigate the conditions described by the CONTRACTOR and shall advise the CONTRACTOR in writing of the decision and/or disposition of the conditions encountered.
- C. Unanticipated Material
 - 1. No classification of excavation will be made when unanticipated material is encountered in WORK:
 - a. Excavation includes excavation of pavements and other obstructions visible on ground surface; underground structures, utilities, and other items indicated to be demolished and removed; together with earth and other materials encountered that are not classified as unauthorized excavation.
- D. Unauthorized excavation consists of removal of materials beyond indicated sub-grade elevations or dimensions without specific direction of ENGINEER. Unauthorized excavation, as well as remedial WORK directed by ENGINEER, shall be at CONTRACTOR'S expense.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

1. Under footings or foundation bases fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to the ENGINEER.
2. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by the ENGINEER.

E. Additional Excavation

1. When excavation has reached required sub-grade elevations, notify the ENGINEER who will make an inspection of conditions.
 - a. If unsuitable bearing materials are encountered at required sub-grade elevations, carry excavations deeper and replace excavated material as directed by the ENGINEER.
 - b. Removal of unsuitable material and its replacement as directed will be paid on basis of CONTRACT conditions relative to changes in WORK using Unit Price Modification prices.

F. Stability of Excavations

1. Slope sides of excavations to comply with Federal, State and local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
2. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

G. Shoring and Bracing

Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross-braces, in good serviceable condition.

1. Establish requirements for trench shoring and bracing to comply with Federal, State and local codes and authorities having jurisdiction.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

2. Maintain shoring and bracing in excavations regardless of time period excavation progresses.
3. Provide permanent steel sheet piling or pressure creosoted timber sheet piling wherever subsequent removal of sheet piling might permit lateral movement of soil under adjacent structures. Cut off tops as required and leave permanently in place.

H. Dewatering

1. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding PROJECT site and surrounding area.
 - a. Do not allow water to accumulate in excavation. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of sub-grades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
 - b. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavation to collecting or runoff areas. Do not use trench excavations as temporary drainage ditches.
2. Prevent impoundment of water behind embankment during construction and prior to acceptance of OWNER.
3. See this Division, Section 02140 for additional requirements.

I. Material Storage

1. Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
 - a. Dispose of excess soil material and waste materials as herein specified.

J. Excavation for Structures

1. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.
2. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other WORK.

K. Excavation for Pavements

1. Cut surface under pavements to comply with cross-sections, elevations, and grades as shown on DRAWINGS.

L. Trench Excavation

1. The CONTRACTOR shall include in his lump sum BID all trenching and backfill necessary for installation of all pipelines as planned and specified. Trenching shall include clearing and grubbing of all trash, weeds, briars, trees and stumps encountered in the trenching. The CONTRACTOR shall dispose of such material at no extra cost to the OWNER. Shrubs shall be removed, maintained and replanted in the same or adjacent location as the ENGINEER may direct. Trenching also includes such items as pipe and small creek crossings; cutting, moving or repairing damage to fences, posts, gates, and other surface structures regardless of whether shown on the DRAWINGS.
2. All existing facilities shall be protected from danger or damage while pipelines are being constructed and backfilled, and from damage due to settlement of the backfill.
3. In the event any existing structure is damaged, repair and restoration shall be made at once and backfill shall not be replaced until this is done. Restoration and repair shall be such that the damaged structure is equal to or better than its original condition and can serve its purpose as completely as before. All such restoration and repair shall be done without extra cost to the OWNER.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

4. Trenches must be dug to lines and grades shown on the DRAWINGS. Hand trenching will be required in areas where machine trenching would result in undue damage to existing structures and facilities.
5. Excavation shall be open trenches.
6. Sheeting and shoring of trenches shall be provided at the expense of the CONTRACTOR where necessary to protect life, property and the new or existing structures from damage or to maintain maximum permissible trench widths at top of pipe. All necessary materials, including, but not limited to, sheeting, sheet piling, trench jacks, braces, shores and stringers, shall be used to hold trench walls. Sheeting and shoring may be withdrawn as the trenches are being backfilled, after backfill has been tamped over top of the pipe at least 18 inches. If removal before backfill is completed to surface endangers adjacent structures, such as buildings, pipelines, street paving, and sidewalks, then the sheeting and shoring shall be left in place until such danger has passed, and then pulled if practical. Voids caused by sheeting withdrawal shall be backfilled and tamped. If not withdrawn, sheeting shall be cut off at least 18 inches below final surface grade, so there is no obstruction at the ground level.
7. Where sub-grade of trench has insufficient stability to support the pipeline and hold it to its original grade, the ENGINEER may order stabilization by various means. Exclusive of dewatering normally required for construction, and instability caused by neglect of the CONTRACTOR, the necessary stabilization shall be paid for at unit price set up in the CONTRACT. In the event no particular BID price is applicable, then the payment for stabilization will be negotiated.
8. The location of the pipelines and their appurtenances as shown are those intended for the final construction. However, conditions may present themselves before or after construction on any line is started that would indicate desirable changes in location. The OWNER reserves the right to make reasonable changes in line and structure locations without extra cost, except as may be determined by extra units of materials and construction actually involved. The OWNER is under no obligation to locate pipelines, so they may be excavated by machine.
9. Tunneling may be used as an alternate to open-cut trenching, at no extra cost to the OWNER. The annular space between plates and

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

excavation shall be either permanently placed pea gravel or sand, pumped grout (3 parts sand and 1 part Portland cement by volume) or other suitably installed material approved by the ENGINEER. Backfilling shall be kept close to the heading and completed after each day's WORK. Where grout is used for backfill, injection holes with threaded plugs shall be provided in liner plates at various levels and in sufficient number to effectively grout the void around the tunnel. A minimum of 3 grout holes shall be provided in each 8 feet of tunnel length. Grout shall be injected in the lower holes first, proceeding upward as the void is filled. Plugs shall be installed after each hole is filled and grout stops shall be provided behind plates as necessary to ensure complete filling of the void. In tunneling under buildings, the CONTRACTOR will be responsible for all damage resulting from his operations and methods of excavation and backfilling. Boring may also be used as an alternate to tunneling or open-cut trenching, at no extra cost to the OWNER.

10. Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide 6" to 9" clearance on both sides of pipe or conduit.
 - a. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.
 - b. Where rock is encountered, carry excavation 6 inches below required elevation and backfill with a 6-inch layer of crushed stone or gravel prior to installation of pipe.
 - c. For pipes or conduit 3 inches or less in nominal size and for flat-bottomed, multiple-duct conduit units, excavate to sub-base depth indicated or, if not indicated, then to 2 inches below bottom of WORK to be supported.
 - d. For pipes or conduit 6 inches or larger in nominal size, tanks, and other mechanical/electrical WORK indicated to receive sub-base, excavate to sub-base depth indicated or, if not otherwise indicated, to 6 inches below bottom of WORK to be supported.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- e. Except as otherwise indicated, excavate for exterior water-bearing piping (water, steam, condensate, drainage) so top of piping is no less than 2 feet 6 inches below finish grade.
- f. Grade bottoms of trenches as indicated on DRAWINGS, notching under pipe bells to provide solid bearing for entire body of pipe.
- g. Concrete is specified in Division 3.
- h. Do not backfill trenches until tests and inspections have been made and backfilling authorized by the ENGINEER. Use care in backfilling to avoid damage or displacement of pipe systems.
- i. For piping or conduit less than 2 feet 6 inches below surface of roadways, provide 4-inch thick concrete base slab support. After installation and testing of piping or conduit, provide minimum 4-inch thick encasement (sides and top) of concrete prior to backfilling or placement of roadway sub-base.

M. Cold Weather Protection

- 1. Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F (1°C).

3.03 COMPACTION

A. General

- 1. Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.
 - a. Percentage of maximum density requirements: Compact soil to not less than the following percentages of maximum density for soils which exhibit a well-defined moisture density relationship (cohesive soils) determined in accordance with ASTM D698; and not less than the following percentage of relative density, determined in accordance with ASTM D2049, for soils which will not exhibit a well-defined moisture-density relationship (cohesionless soils). CONTRACTOR is responsible for providing one optimum moisture content - maximum dry

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

density curve in accordance with the above referenced ASTM standards for each soil type encountered.

- b. Structures, building slabs and steps, pavements: Compact top 12 inches of sub-grade and each 8 inch loose, uncompacted layer of backfill or fill material at 100 percent maximum density for cohesive material or 95 percent relative density for cohesionless material.
 - c. Lawn or unpaved areas: Compact to 6 inches of sub-grade and each 8 inch loose, uncompacted layer of backfill or fill material at 90 percent maximum density for cohesive soils and 90 percent relative density for cohesionless soils.
 - d. Walkways: Compact top 6 inches of sub-grade and each 8 inch loose, uncompacted layer of backfill or fill material at 95 percent maximum density for cohesive material or 95 percent relative density for cohesionless material.
2. Subgrade and backfill for sewers located in fill areas shall be compacted to not less than 95 percent maximum density.

B. Moisture Control

1. Where sub-grade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface or sub-grade, or layer of soil material, to prevent free water from appearing on surface during or subsequent to compaction operations.
2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by deicing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

3.04 BACKFILL AND FILL

A. General

1. Place acceptable soil material in layers to required sub-grade elevations, for each area classification listed below.

02200-12

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- a. In excavations, use satisfactory excavated or borrow material.
 - b. Under grassed areas, use satisfactory excavated or borrow material.
 - c. Under walks and pavements, use sub-base material, or satisfactory excavated or borrow material, or combination of both.
 - d. Under steps, use sub-base material.
 - e. Under building slabs, use engineered fill material for a minimum depth of 6 inches.
 - f. Sub-base material or satisfactory excavated or borrow material may be used below engineered fill at building slabs.
 - g. Under piping and conduit, use sub-base material where sub-base is indicated under piping or conduit; shape to fit bottom 90° of cylinder.
- B. Backfill excavations as promptly as WORK permits, but not until completion of the following:
1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
 2. Inspection, testing, approval, and recording locations of underground utilities.
 3. Removal of concrete formwork.
 4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
 5. Removal of trash and debris.
 6. Permanent or temporary horizontally supported walls.

C. Ground Surface Preparation

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface, except as otherwise specified in Section 02200-3.05 for embankments.
2. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, adjust moisture condition to optimum moisture content, and compact to required depth and percentage of maximum density.

D. Placement and Compaction

1. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
 - a. Before compaction, add moisture to each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - b. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.

E. Backfilling Trenches

1. Backfilling shall be accomplished as soon as practical after pipe has been laid and jointing and alignment approved. Packing of crushed rock between joints shall be the usual procedure as the laying progresses. This is in order to avoid danger of misalignment from slides, flooding or other causes. The ENGINEER shall be given a maximum of 24 hours for inspection before backfilling.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

2. The backfill over the pipe shall be in accordance with the standard details shown on the DRAWINGS for bedding and backfilling pipe.
3. In case maximum permissible trench widths (as designated by the pipe manufacturer) are exceeded, the CONTRACTOR shall furnish crushed rock backfill to a minimum of 12 inches over the top of pipe at no extra cost to the OWNER.
4. After the foregoing cover requirements over top of the pipe have been met, rock may be used in the backfill in pieces no larger than 12 inches in any dimension and to an extent not greater than one-half the backfill materials used. If additional earth is required for backfilling, it must be obtained and placed by the CONTRACTOR at no additional cost to the OWNER. Filling with rock and earth shall proceed simultaneously, such that no voids are left in the rock. After cover requirements over top of pipe have been met, backfilling may be employed without tamping, provided caution is used in quantity per dump and uniformity of level of backfilling. Surplus material shall be uniformly ridged over trench and excess rock hauled away, with no rock over 1-1/2 inch diameter in the top 6 inches. Ridged backfill shall be confined to the width of the trench and no higher than needed for replacement of settlement of backfill. All rock over 1-1/2 inch diameter shall be broomed to remove all earth and loose rock, all immediately following backfilling.
5. In the case of street, highway, railroad, sidewalk and driveway crossings; or within any roadway paving; or about manholes, valve and meter boxes; the backfill must be mechanically tamped in not over 6 inch layers, measured loose. Alternate method of compacting backfill shall be used, if refill material is in large hard lumps (crushed rock excepted) which cannot be consolidated without leaving voids.
6. In the case of tunnels, the annular space between plates and excavation shall be either permanently placed pea gravel or sand, pumped grout (3 parts sand and 1 part Portland cement by volume) or other suitably installed material approved by the ENGINEER. Backfilling shall be kept close to the heading and completed after each day's WORK. Where grout is used for backfill, injection holes with threaded plugs shall be provided in liner plates at various levels and in sufficient number to effectively grout the void around the tunnel. A minimum of 3 grout holes shall be provided in each 3 feet of tunnel length. Grout shall be injected in the lower

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- holes first, proceeding upward as the void is filled. Plugs shall be installed after each hole is filled and grout stops shall be provided behind plates as necessary to ensure complete filling of the void.
7. Where traffic on streets, driveways, railroads, sidewalks and highways requires temporary surfacing, backfilling shall be terminated 4 inches below original ground level and 4 inches to 6 inches of dense graded aggregate shall be placed on the trench. Backfills shall be maintained easily passable to traffic at original ground level, until acceptance of PROJECT or replacement of paving or sidewalks.
 8. Excavated materials from trenches and tunnels in excess of that required for backfill shall be disposed of on the plant lot, as directed by the ENGINEER.
 9. The CONTRACTOR shall protect all sewer, gas, electric, telephone, water, and drain pipes of conduits from damage while pipelines are being constructed and backfilled, and from danger due to settlement of trench backfill.
 10. No extra payment shall be made for backfilling of any kind, except as specified herein before. Backfilling shall be included as a part of the Unit Price BID. No extra payment will be made to the CONTRACTOR for supplying outside materials for backfill.
 11. On completion of the PROJECT, all backfills shall be dressed; holes filled; and surplus material hauled away. All permanent walks, street paving, roadway, etc., shall be restored and seeding and sodding performed as required.

3.05 EMBANKMENTS

A. Borrow Excavation

Should insufficient quantities of suitable soil fill material for construction of the embankment be located within the designated areas, where shown on the PLANS, the CONTRACTOR shall obtain suitable soil material conforming to the requirements of the "Materials" SPECIFICATIONS at no additional cost to the OWNER.

Excavation areas shall be excavated and finally dressed in a manner such that no steep or unstable side slopes or other hazardous or unsightly conditions exist.

02200-16

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

To the extent that they are needed, all suitable materials shall be used in the construction of permanent earth fill or rock fill. The suitability of materials for specific purposes will be determined by the ENGINEER. The CONTRACTOR shall not waste or otherwise dispose of suitable excavated materials.

B. Foundation Preparation

Foundations for earth fill shall be stripped of all topsoil to remove vegetation and other deleterious materials or shall be excavated as specified.

Except as otherwise specified for foundation benches, earth foundation surfaces shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise acceptably scored and loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the earth fill, and the surface materials of the foundation shall be compacted and bonded with the first layer of earth fill as specified for subsequent layers of earth fill.

When the original ground surface is sloping at rate of 15 percent or greater, perpendicular to the embankment axis, embankment foundation benches shall be constructed as shown on the CONTRACT DRAWINGS. Preparation of the foundation shall proceed as described in the previous paragraph.

Earth abutment surfaces shall be free of loose, uncompacted earth in excess of two inches in depth normal to the slope and shall be at such a moisture content that the earth fill can be compacted against them to effect a good bond between the fill and the abutments.

C. Fill Placement

Fill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the ENGINEER. Fill shall not be placed upon a frozen surface, nor shall snow, ice or frozen material be incorporated in the fill.

Fill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed twelve inches (12"). Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted. Hand compacted fill, including fill compacted by manually directed power tampers, shall be placed in layers whose thickness before compaction does not exceed six inches (6").

Adjacent to pipe or structures, fill shall be placed in a manner which will prevent damage to the pipes or structures and will allow the pipes or structures to assume the loads from the fill gradually and uniformly. The height of the fill adjacent to a structure shall be increased at approximately the same rate on all sides of the structures.

Earth fill for embankments shall also be placed so as to meet the following additional requirements:

1. The distribution of materials, throughout the zone shall be essentially uniform, and the fill shall be free from voids, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material.
2. If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified parallel to the axis of the fill to a depth of not less than 2 inches before the next layer is placed.
3. The top surfaces of embankments shall be maintained approximately level during construction, except that a crown or cross-slope of not less than 2 percent shall be maintained to insure effective drainage. If the DRAWINGS or SPECIFICATIONS require or the ENGINEER directs that fill be placed at a higher level in one part of an embankment than another, the top surface of each part shall be maintained as specified above.
4. Embankments shall be constructed in continuous layers except where openings to facilitate construction or to allow the passage of stream flow during construction are specifically authorized.
5. Embankments built at different levels as described under (3) or (4) above shall be constructed so that the slope of the bonding surfaces between embankment in place and embankment to be placed is not steeper than 3 feet horizontal to 1 foot vertical. The bonding surface of the embankment in place shall be stripped of all loose material, and shall be scarified, moistened and recompactd when the new fill is placed against it as needed to insure a good bond with the new fill and to obtain the specified moisture content and density in the junction of the in place and new fill.
6. Embankment materials shall be placed in the zones (impervious core and random earth and rock) shown on the CONTRACT DRAWINGS. Prior to fill placement in the cutoff trench, the

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

bottom of the cut off trench shall be inspected by the ENGINEER. All fractures or joints shall be clean and filled with mortar or concrete unless otherwise directed by the ENGINEER.

7. Fill placement shall then proceed in accordance with CONTRACT PLANS AND SPECIFICATIONS and in a manner such that no steep or unstable slopes or other hazardous or unsightly conditions exist. Fill material used shall conform to requirements of the "Materials" SPECIFICATIONS previously mentioned.
8. Rocks placed in the random earth and rock zones shall be kept at least 2 feet below the embankment surface. The rock shall not be dumped into final position, but shall be distributed by blading or dozing in a manner that will ensure proper placement in the embankment so that voids, pockets and bridging will be eliminated.

D. Compaction

Each layer of fill shall be compacted as necessary to make density of the fill matrix not less than the minimum density specified. The fill matrix is defined as the portion of the fill material finer than the maximum particle size used in the compaction test method specified. Embankment fill shall be compacted to minimum field densities equal to or greater than 95 percent of maximum dry density as determined by the Standard Procter Maximum Dry Density test method ASTM D-698. Moisture content may vary optimum, -2 percent to +1 percent as also determined by ASTM D-698.

CONTRACTOR shall provide one moisture content vs. dry density relationship curve as determined by standard test method ASTM D-698 to help determine optimum moisture content and maximum dry density for each soil type encountered during construction prior to placement in the embankment.

Fill adjacent to structures shall be compacted to a density equivalent to that of the surrounding fill by means of hand tamping or manually directed power tampers or plate vibrators. Heavy equipment shall not be operated within 2 feet of any structure. Vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from a crane or hoist will not be permitted.

The passage of heavy equipment will not be allowed: (a) over cast-in place conduits prior to 14 days after placement of the concrete; (b) over cradled pre-cast conduits prior to 7 days after placement of the concrete

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

cradle; or (c) over any type of conduit until the backfill has been placed above the top surface of the structure to a height equal to one-half of the clear span width of the structure or pipe or 2 feet, whichever is greater.

E. Testing

During the course of the WORK, the CONTRACTOR will perform such tests as are required to identify the materials, to determine compaction characteristics, to determine moisture content, and to determine density of fill in place. These tests performed by the CONTRACTOR will be used to verify that the fills conform to the requirements of the SPECIFICATIONS. Such tests are intended to provide the CONTRACTOR with the information required by him for the proper execution of the WORK.

Submittals shall be per Section 02200, paragraph 1.04 A.

F. Removal and Replacement of Defective Fill

Fill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the SPECIFICATIONS shall be reworked to meet the requirements or removed and replaced by acceptable fill. The replacement fill, the foundation, and the surfaces upon which the fill is placed shall conform to all requirements of the SPECIFICATIONS for foundation preparation, approval, placement, moisture control and compaction.

3.06 GRADING

A. General

1. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between such points and existing grades.

B. Grading Outside Building Lines

1. All materials used for backfill around structures shall be of a quality acceptable to the ENGINEER and shall be free from large or frozen lumps, wood and other extraneous material. All spaces excavated and not occupied by footings, foundations, walls or other permanent WORK shall be refilled with earth up to the surface of the surrounding ground, unless otherwise specified, with sufficient allowance for settlement. In making the fills and terraces

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

around the structures, the fill shall be placed in layers not exceeding 12 inches in depth and shall be kept smooth as the WORK progresses. Each layer of the fill shall be rolled with an approved type roller and/or be compacted. When it is not practicable to compact sections of the fill immediately adjacent to buildings or structures by rolling, then such sections shall be thoroughly compacted by means of mechanical tamping or hand tamping as may be required by the conditions encountered. All fills shall be placed so as to load structures symmetrically.

2. As set out herein before, rough grading shall be held below finished grade and then the topsoil which has been stockpiled shall be evenly spread over the surface. The grading shall be brought to the levels shown on the DRAWINGS or to the elevations established by the ENGINEER. Final dressing shall be accomplished by hand WORK or machine WORK, or a combination of these methods as may be necessary to produce a uniform and smooth finish to all parts of the re-grade. The surface shall be free from clods greater than 2 inches in diameter. Excavated rock (6 inches maximum size) may be placed in the fills, but it shall be thoroughly covered. Rock placed in fills shall not be closer than 12 inches from finished grade.
3. Grade areas adjacent to building lines to drain away from structures and to prevent ponding.
 - a. Finish surfaces free from irregular surface changes, and as follows:
 - (1) Lawn or unpaved areas: Finish areas to receive topsoil to within not more than 0.10 ft. above or below required sub-grade elevations.
 - (2) Walks: Shape surface of areas under walks to line, grade, and cross-section, with finish surface not more than 0.10 ft. above or below required sub-grade elevation.
 - (3) Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than 0.04 ft. above or below required sub-grade elevation.

C. Grading Surface of Fill Under Building Slabs

1. Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 0.04 ft. when tested with a 10ft. straightedge.

D. Compaction

1. After grading, compact sub-grade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.07 PAVEMENT SUB-BASE COURSE

A. General

1. Sub-base course consists of placing sub-base material, in layers of specified thickness, over sub-grade surface to support a pavement base course.

B. Grade Control

1. During construction, maintain lines and grades including crown and cross-slope of sub-base course.

C. Shoulders

1. Place shoulders along edges of sub-base course to prevent lateral movement. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each sub-base course layer. Compact and roll at least a 12 inch width of shoulder simultaneously with compacting and rolling of each layer of sub-base course.

D. Placing

1. Place sub-base course material on prepared sub-grade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting sub-base material during placement operations.
2. When a compacted sub-base course is shown to be 6 inches thick or less, place material in a single layer. When it is shown to be more than 6 inches thick, place material in equal layers, such that no single layer shall be more than 6 inches or less than 3 inches in thickness when compacted.

3.08 BUILDING SLAB ENGINEERED FILL COURSE

A. General

1. Engineered fill course consists of placement of fill material, in layers of indicated thickness, over sub-grade surface to support concrete building slabs.

B. Placing

1. Place fill material on prepared sub-grade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.
2. When a compacted course is shown to be 6 inches or less, place material in a single layer. When it is shown to be more than 6 inches thick, place material in equal layers, such that no single layer shall be more than 6 inches or less than 3 inches in thickness when compacted.

3.09 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction

1. Allow testing service to inspect and report to the ENGINEER on findings and approve sub-grades and fill layers before further construction WORK is performed.
 - a. Perform field density tests in accordance with ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2992 (nuclear density method), as applicable.
 - b. Footing sub-grade: For each strata of soil on which footings will be placed, conduct at least one test to verify required design bearing capacities. Subsequent verification and approval of each footing sub-grade may be based on a visual comparison of each sub-grade with related tested strata, when acceptable to ENGINEER.
 - c. Paved areas and building slab sub-grade: Make at least one field density test of sub-grade for every 2,000 square feet of paved area or building slab, but in no case less than three tests. In each compacted fill layer, make one field density

test for every 2,000 square feet of overlaying building slab or paved area, but in no case less than three tests.

- d. Foundation wall backfill: Take at least two field density tests, at locations and elevations as directed.
- B. If in the opinion of the ENGINEER, based on testing service reports and inspection, sub-grade or fills which have been placed are below specified density, CONTRACTOR shall provide additional compaction and testing at no additional expense to the OWNER.

3.10 MAINTENANCE

- A. Protection of Graded Areas
 1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- B. Reconditioning Compacted Areas
 1. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.
- C. Settling
 1. Where settling is measurable or observable at excavated areas during general PROJECT warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent WORK, and eliminate evidence of restoration to greatest extent possible.

3.11 BASIS FOR PAYMENT

Payment for excavation shall be made on a unit price or a lump sum basis where a separate bid item is provided. Otherwise payment for all excavation, trenching and backfilling required for other work, such as structures, pipelines, etc., shall be made on a unit price or lump sum basis bid for that work.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02255

CRUSHED STONE AND DENSE GRADED AGGREGATE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish and install crushed stone for miscellaneous uses as shown on the Drawings, as called for in the Specifications, or as may be directed in writing by the ENGINEER.
- B. Sizes, types, and quality of crushed stone are specified in this Section, but its use for replacement of unsuitable material, pavement base, and similar uses is specified in detail elsewhere in the Specifications. The ENGINEER may order the use of crushed stone for purposes other than those specified in other sections, if, in his opinion, such use is advisable.

PART 2 PRODUCTS

2.01 MATERIALS

- A. When referred to in these Specifications, crushed stone shall be Number 57 graded in accordance with the Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, 2000 Edition.
- B. When referred to in these Specifications, dense graded aggregate (DGA) shall be crushed stone classified by the Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, 2000 Edition, and conforming to the following requirements:

Sieve Size	Percent Passing
1 Inch	100
3/4 Inch	70 - 100
3/8 Inch	50 - 80
#4	30 - 65
#30	10 - 40
#200	4 - 13

PART 3 EXECUTION

3.01 INSTALLATION

- A. Crushed stone shall be placed in uniform layers not greater than 6 inches deep and shaped by power equipment to required lines, grades, cross sections, and depths. No minimum compacted density, method of compaction, or compaction equipment is required since a nominal amount of compaction effort with vibration can establish the desired inter-granular locking of the aggregate under controlled placement depth. Acceptable compaction can be achieved with pneumatic-tired and tracked vibratory equipment and vibratory rollers.
- B. All compaction operations shall be performed to the satisfaction of the ENGINEER.
- C. Crushed stone shall be placed in those areas as shown on the Drawings and as may be directed by the ENGINEER.

3.02 BASIS FOR PAYMENT

Payment for crushed stone or DGA shall be made on a unit price or a lump sum basis where a separate bid item is provided. Otherwise payment for crushed stone or DGA required for other work show on the PLANS shall be made on a unit price or lump sum basis bid for that work.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02270

EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials and equipment required for erecting, maintaining and removing temporary erosion and sedimentation controls as shown on the Drawings and as specified herein.
- B. Temporary erosion controls include, but are not limited to grassing, mulching, seeding, watering, and reseeded on all disturbed surfaces including waste area surfaces and stockpile and borrow area surfaces; scheduling work to minimize erosion and providing interceptor ditches at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits.
- C. Temporary sedimentation controls include, but are not limited to, silt dams, silt fences, traps, barriers, staked straw-bale diversions and appurtenances at the foot of sloped surfaces, which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits.
- D. CONTRACTOR is responsible for providing and maintaining effective temporary erosion and sediment control measures during construction or until final controls become effective.
- E. The erosion and sedimentation controls where shown on the Drawings and/or specified herein are intended to provide the required environmental protection. However, should additional controls be directed by the ENGINEER, CONTRACTOR shall furnish, install and maintain additional mulching and straw-bale diversions to control erosion and sedimentation to the satisfaction of the ENGINEER at no additional cost to OWNER.
- F. Construction methods that will minimize siltation and erosion shall be employed. The CONTRACTOR shall take steps to minimize unnecessary excavation and disturbing or uprooting trees and vegetation. The CONTRACTOR is prohibited from dumping soil or debris, or pumping silt-laden water into a stream. Cleanup, grading, seeding and planting or restoration of all work areas shall begin immediately. Exposed areas shall not remain unprotected for more than seven days. (From 10-States' Standards)

Job Title
Location
Job #

1.02 RELATED WORK NOT INCLUDED

- A. Site clearing and grubbing is included in this Division, Section 02110.
- B. Dewatering is included in this Division, Section 02140
- C. Landscape work is included in this Division, Section 02900.
- D. Final erosion protection measures are included in this Division, Section 02200.

PART 2 PRODUCTS

- A. Erosion control blanket where called for in this Section, on the Drawings, or as determined by the ENGINEER, shall be AMXCO Curlex Blanket as manufactured by American Excelsior Company, Arlington, TX 76011, or equal.
- B. Rip-rap lining where called for in this Section, on the Drawings or as determined by the ENGINEER shall be Class III or Class II lining as shown on the Drawings and as specified in Section 703 of the 2000 edition of the Kentucky Department of Highways "Standard Specifications for Road and Bridge Construction."

For Class III, no less than 80 percent, by volume, of individual stones shall range in size from 1/4 to 1-1/2 cubic feet. Stones of smaller sizes are permissible for use in filling voids in the upper surface and dressing to the proper slope. In addition to the above referenced specifications, individual stone dimensions are limited to 4 inches (minimum) and 24 inches (maximum).

For Class II lining, no more than 20 percent of the finished product shall pass through square openings 5 inches by 5 inches.

- C. Filter fabric for use with rip-rap where called for in this Section, on the Drawings, or as determined by the ENGINEER, shall be Mirafi 700X as manufactured by Celanese Corporation, New York, NY 10036, or equal.
- D. Silt fence fabric where called for in this Section, on the Drawings or as determined by the ENGINEER shall be Mirati 100X as manufactured by Celanese Corporation, New York, NY 10036, or equal.

02270-2

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

PART 3 EXECUTION

3.01 GENERAL

- A. Erosion control practices shall be adequate to prevent erosion of all disturbed and/or all regraded areas.
- B. Earthwork procedures shall be as specified in this Division, Section 02200.
- C. Silt fences shall be located and staked in all disturbed locations and/or all regraded where erosion may occur.

3.02 TEMPORARY SEEDING

- A. This item shall consist of seeding a temporary cover of grass, or grass and small grain, on areas disturbed on the construction site, which will not be redisturbed within a 60 day period. The determination of the area to be temporarily seeded and the time of seeding shall be made by the ENGINEER.
- B. The seed mixtures to be used for temporary cover will be governed by the time of year the seeding is accomplished. The mixture of seeding shall be as follows:
 - 1. Time of Seeding - February 15 to June 1

Rye 1-1/2 bushels and rye grass 25 pounds per acre; or tall fescue 30 pounds and rye grass 20 pounds per acre.
 - 2. Time of Seeding - June 2 to August 15

Tall fescue 30 pounds and rye-grass 20 pounds per acre; or, spring oats 2 bushels and rye grass 30 pounds per acre.
 - 3. Time of Seeding - August 16 to February 14

Rye 2 bushels and rye grass 20 pounds per acre; or, tall fescue 30 pounds and rye- grass 20 pounds per acre.
 - 4. Lime will not be required for temporary seeding.
 - 5. Fertilizer at the rate of 400 pounds per acre of 10-10-10 fertilizer, or equivalent, broadcast uniformly on the area to be seeded.

6. All seed shall be broadcast evenly over the area to be seeded and culti-packed or otherwise pressed into the soil. Seed and fertilizer may be mixed together and applied after the seed has been prepared.
7. Mulch for temporary seeding will not be required except on those areas, in the ENGINEER'S opinion, which are too steep to hold the seed without protective cover.

3.03 RIP-RAP LINING

- A. Rip-rap lining shall be constructed to the lines and grades and at the location designated on the Drawings.

The filter fabric shall be placed at the locations shown on the Drawings. The surface to receive the fabric shall be prepared to a relatively smooth condition free of obstructions, debris or sharp objects that may puncture the fabric. Construction equipment will not be permitted to operate directly on the fabric.

The fabric shall be placed with long dimension parallel to the channel or embankment centerline and shall be laid smooth and free of tension, stress, folds, wrinkles, or creases. If more than one strip is necessary, the strips shall overlap a minimum of 3 feet. Transverse laps shall be placed so the upstream strip laps over the downstream strip.

Fastener pins shall be installed through both strips of overlapped fabric at no less than 5 foot intervals along a line through the midpoint of the lap, and at any other locations as necessary to prevent any slippage of the fabric.

Fabric shall be covered with the rip-rap lining within 14 calendar days after placement of the fabric. Fabric not covered within this time shall be removed and replaced at the CONTRACTOR'S expense if the ENGINEER determines that damage or deterioration is evident.

The fabric shall be protected from damage due to the placement of the channel lining by limiting the height of drop of the material at no greater than 3 feet or by placing a cushioning layer of sand on top of the fabric before dumping the material, at the CONTRACTOR'S option. The CONTRACTOR shall demonstrate that the placement technique will prevent damage to the fabric.

Placement of channel lining shall begin at the toe of the channel and proceed upstream. The lining shall be placed to conform to the template

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

shown on the Drawings. The lining need not be compacted but shall be placed upgrade in a manner to ensure that the larger rock fragments are uniformly distributed and the smaller rock fragments serve to fill the spaces between the larger rock fragments in such a manner as will result in a well keyed, densely placed, uniform layer of lining of the specified thickness. Hand placing will be required only to the extent necessary to secure the results specified above.

3.04 MAINTENANCE OF CONTROLS AND PERFORMANCE

- A. Erosion and sedimentation controls shall be inspected weekly and after significant rainstorms. Replace silt fencing which is damaged filter stone which is dislodged, erosion control blanket which is damaged, and make other necessary repairs.
- B. Should any of the temporary erosion and sediment control measures employed by the CONTRACTOR fail to produce results consistent with normal and acceptable standards of the industry. The CONTRACTOR shall immediately take whatever steps are necessary to correct the deficiency at his own expense.
- C. Remove all temporary erosion and sedimentation controls as final landscaping and grading is performed.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02700

SEWAGE AND DRAINAGE PIPING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals necessary to install and test pipe and fittings as shown on the DRAWINGS and required by the SPECIFICATIONS.
- B. Piping shall be located substantially as shown. The ENGINEER reserves the right to make such modifications in locations as may be found desirable to avoid interference between pipes or for other reasons. Pipe fitting notation is for the CONTRACTOR'S convenience and does not relieve him from laying and jointing different or additional items where required without additional compensation.
- C. Wherever the word pipe or piping is used it shall mean pipe and fittings unless otherwise noted.

1.02 RELATED WORK

- A. Trenching, backfilling and compacting are included in this Division, Section 02200.
- B. Concrete is included in Division 3, Section 03300.
- C. General Piping

1.03 DESCRIPTION OF SYSTEM

- A. Piping shall be installed substantially as shown on the DRAWINGS so as to form a complete smooth flow path and workable system.
- B. The piping and materials specified here in are intended to be standard types of pipe for use in transporting the fluids as indicated on the DRAWINGS. The pipe and fittings shall be designed, constructed, and installed in accordance with the best practices and methods and the manufacturer's recommendations.

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

1.04 QUALIFICATIONS

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

1.05 SUBMITTALS

- A. The CONTRACTOR shall submit to the ENGINEER for review in accordance with Division 1, Section 01300, complete sets of SHOP DRAWINGS showing layout and details of materials, joints and methods of construction and installation of the pipe, specials and fittings required.
- B. Before fabrication and/or shipping of the pipe is begun, the CONTRACTOR shall submit for approval a schedule of pipe lengths for the entire job. All pipe furnished under the CONTRACT shall be fabricated in full accordance with the approved DRAWINGS.
- C. Submit to the ENGINEER within 30 days after execution of the CONTRACT a list of materials to be furnished, the names of the SUPPLIERS and the approximate date of delivery of materials to the site.

1.06 INSPECTION

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

PART 2 PRODUCTS

2.01 DUCTILE IRON PIPE (FORCE MAIN AND GRAVITY SEWER APPLICATIONS)

- A. General
 - 1. Ductile iron pipe shall be centrifugally cast of ductile iron conforming to ASTM Specification A-746-82, or latest revision. Unless noted otherwise on the DRAWINGS, all ductile iron pipe shall have a wall thickness not less than 0.33 inch (Class 52).

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

2. The manufacturing tolerances included in the nominal thickness shall not be less than specified by ANSI/AWWA C150/A21.50-latest revision.
3. Pipe may be furnished in 16', 16-1/2', 18' or 20' nominal laying lengths; and the weight of any single pipe shall not be less than the tabulated weight by more than 5 percent for pipe 12 inches or smaller in diameter, not by more than 4 percent for pipe larger than 12 inches in diameter.
4. The hydrostatic and acceptance tests for the physical characteristics of the pipe shall be as specified in ANSI/AWWA C151/A21.51-latest revision.
5. Any pipe not meeting the ANSI/AWWA SPECIFICATIONS quoted above shall be rejected in accordance with the procedure outlined in the particular specification.
6. The ENGINEER shall be provided with 3 copies of a certification by the manufacturer that the pipe supplied for this CONTRACT has been tested in accordance with the referenced SPECIFICATIONS and is in compliance therewith.
7. The net weight, class or nominal thickness and sampling period shall be marked on each pipe. The pipe shall also be marked to show that it is ductile iron.
8. Unless otherwise noted, joints for ductile iron pipe will be "push-on" type consisting of a rubber gasket installed in a recess in the bell.

B. Lining and Coating Ductile Iron Pipe

1. All ductile iron pipe and fittings shall have manufacturer's outside coal tar or asphaltic base coating. The inside lining shall be one of the following protective coatings:
 - a.) Calcium Aluminate Cement Mortar with Sealcoat (ANSI/AWWA C104/A21.4);
 - b.) Coal Tar Epoxy (20 to 40 mil, nominal);
 - c.) Amine Cured Novalac Epoxy (40 mil, nominal);

- d.) Polyethylene (40 mil, nominal)
 - e.) Polyurethane (40 mil, nominal).
- C. Fittings for Ductile Iron Pipe - 3" and Larger
- Fittings shall be the same as specified in paragraph 2.02 C of these SPECIFICATIONS.
- D. Ductile Iron Pipe and Fittings - Smaller than 3"
- Fittings shall be the same as specified in paragraph 2.02 D of these SPECIFICATIONS.
- E. Flanged Cast Iron Pipe and Flanged Coupling Adapters for Flexible Couplings
- Fittings shall be the same as specified in paragraph 2.02 E of these SPECIFICATIONS.
- 2.02 POLYVINYLCHLORIDE (PVC) PIPE AND FITTINGS (GRAVITY SEWER APPLICATIONS)
- A. PVC pipe used for gravity sewer applications shall meet all requirements of ASTM specification D3034-latest revision. Pipe and fittings shall meet the extra strength minimum of SDR-35 of that specification.
 - B. All pipe and fittings shall be inspected at the factory and on the job site. Testing of PVC pipe and fittings shall be accomplished in conformance with the latest revision of ASTM D3034, ASTM D2444, ASTM D2412 and ASTM D2152. The manufacturer shall submit 5 copies of certification of test for each lot of material represented by shipment to the job site.
 - C. The pipe shall be homogeneous throughout and free from cracks, holes foreign inclusions or other defects. The pipe shall be as uniform in color as commercially practical. PVC pipe shall have a ring painted around spigot ends in such a manner as to allow field checking of setting depth of pipe in the socket.
 - D. Pipe must be delivered to job site by means which will adequately support it, and not subject it to undue stresses. In particular, the load shall be so supported that the bottom rows of pipe are not damaged by crushing. Pipe shall be unloaded carefully and strung or stored as close to the final point

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

of placement as is practical. Pipe shall not be stored outside where subject to sunlight.

- E. Jointing of PVC pipe shall be by a natural rubber ring inserted into the belled end of the pipe or double hub joints. Solvent weld joints are not acceptable.
- F. The PVC pipe manufacturer shall provide special fittings, acceptable to the ENGINEER to make water-tight connections to manholes.

2.03 POLYVINYLCHLORIDE (PVC) PIPE AND FITTINGS (FORCE MAIN APPLICATIONS)

A. General

1. PVC pipe used for force main applications shall meet all the requirements of ASTM specification D2241-latest revision. The PVC cell classification shall be 1245B as defined under ASTM D1784.
2. Elastomeric gaskets shall comply with the requirements specified in ASTM F477.
3. Joints shall comply with the requirements specified in ASTM D3139.
4. PVC pipe shall be as manufactured by IPEX, J-M Manufacturing or equal.
5. The lubricant used for joint assembly shall be a water soluble lubricating and shall not be detrimental to the gasket or the pipe.
6. The manufacturer shall, upon written request by the purchaser, furnish an affidavit that all basic materials used in pipe production meet the requirements of this recommended standard.
7. Pipe shall be homogeneous throughout. It shall be free from voids, cracks, inclusions and other defects. It shall be uniform as commercially practical in color, density, and other physical properties. Pipe surfaces shall be free from nicks and scratches. Joining surfaces of spigots and joints shall be free from gouges and imperfections that could cause leakage.
8. Pipe shall be nominal sizes and dimension ratio as shown on the DRAWINGS or specified elsewhere. Pipe outside diameters shall

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

be consistent with iron pipe sizes (IPS), to assure the pipe can be directly connected to ductile iron fittings without adapters or complicated procedures.

9. Pipe shall be a standard green color representative of sewer pipe.

B. Testing and Certification

1. The manufacturer shall be subject to random inspection and evaluation by an independent third party in order to assure the purchaser of full compliance with this specification. The third party shall report all findings to the purchaser upon request. The third party selection shall be subject to the approval of the OWNER and shall be provided at no additional cost to the OWNER.
2. The third party inspector shall have free access to those parts of the manufacturer's plant involved in WORK performed to meet requirements of this recommended standard. The manufacturer shall afford the third party inspector reasonable facilities needed to determine if the pipe meets the requirements of this recommended standard.
3. Certification: Upon request by the OWNER, the manufacturer shall furnish a certificate of conformance to specified standards. Upon request by the OWNER, the manufacturer shall furnish production standard dimensions and tolerances of the joint and gasket.
4. Test Preparation
 - a. Testing shall be performed at $73.4^{\circ}\text{F} + 36^{\circ}\text{F}$ ($23^{\circ}\text{C} + 2^{\circ}\text{C}$) unless otherwise specified. Care shall be exercised to condition test specimens to the proper temperature before testing. In cases of disagreement, specimens shall be conditioned in accordance with Procedure A of ASTM D618.
 - b. Selection of pipe specimens for testing, if not specified in this recommended standard, shall be as agreed upon by the purchaser and manufacturer.

5. Test Methods

- a. All measurements shall be made in accordance with ASTM D2122.
- b. Flatten three (3) specimens of pipe, 2 inches long, between parallel plates in a suitable press until the distance between the plates is 5% of the original outside diameter of the pipe, or the walls touch, whichever occurs first. The rate of flattening shall be uniform and such that the compression is completed within two (2) to five (5) minutes. Remove the applied load and examine the specimen for evidence of splitting, cracking or breaking.
- c. The extrusion quality test shall be performed in accordance with ASTM D2152. This procedure determines the extrusion quality as indicated by reaction to immersion in anhydrous acetone. The test distinguishes between fused and unfused PVC. After completion of test procedure, remove the specimen and examine for evidence of flaking or disintegration.
- d. The design of the gasket joint provided on the PVC pipes shall comply with ASTM D3139.
- e. Impact testing shall be performed in accordance with ASTM D2444.
- f. The manufacturer shall hydrostatically proof-test all pipe, including the joint, that is marked with the designation number of piece of pipe, whether ANSI/AWWA C905-latest revision at $73.4^{\circ}\text{F} + 3.6^{\circ}\text{F}$ ($23^{\circ}\text{C} + 2^{\circ}$). Each piece of pipe, whether standard or random length shall be proof-tested at twice the pressure rating of the pipe. The test shall be run for a minimum dwell of 5 seconds.
- g. Impact Resistance Requirements
 - 1) TUP Weight shall be 20 lb. or 30 lb.
 - 2) TUP shall have a 1/2" radius nose piece.
 - 3) Sample lengths shall be 12" O.A.L.
 - 4) Ten samples shall be tested and all shall pass. Any failures shall result in rejection.
 - 5) All samples shall pass a minimum impact of 220 ft. lbs.

6. Test Frequency

- a. The dimensions of pipe and joints shall be measured at the beginning of each extrusion run and hourly thereafter.
- b. The flattening test shall be performed at the beginning of each extrusion run and once every twenty-four hours thereafter.
- c. The extrusion quality test shall be performed at the beginning of each extrusion run of each specific material on size, and every two hours thereafter. The test shall also be run immediately following any change from established running conditions that could affect extrusion quality.
- d. The joint integrity test shall be performed by the manufacturer to evaluate gasket joint design whenever the design of the joint or the gasket is changed.
- e. The impact test shall be performed every two hours during the extrusion run.
- f. The hydrostatic proof test shall be performed every twenty-four hours during the extrusion run.

C. Quality Control Records.

1. The manufacturer shall maintain for a period of not less than two years a record of all quality control tests and shall, if requested, submit the pertinent record to the purchaser.

D. Markings

1. Pipe and couplings shall bear identification markings that will remain legible during the normal handling, storage, and installation. Markings shall be applied in a manner that will not weaken or damage the pipe or coupling. Marking shall be applied at the intervals of not more than five (5) feet on the pipe.
2. Marking on the pipe and coupling shall include the following:
 - a. Nominal size and OD base (e.g. 24CI)
 - b. PVC
 - c. Dimension ratio and pressure rating (e.g. DR25 PR165)
 - d. UNI-B-11
 - e. Manufacturer's name or Trademark

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- f. Manufacturer's production code to include day, month, year, shift, plant and extruder of manufacture.
 - g. Certification seals pertaining to entire documents or specific sections, if desired or requested.
3. Special Marking: If plant inspection is made by a third party inspector, a special marking of no more than three (3) letters, as specified by the OWNER may be added to markings on the pipe and coupling.
 4. Double Assembly Lines: Pipe shall be supplied with twin assembly lines on the spigot to guard against over-assembly.

2.07 DETECTABLE UNDERGROUND UTILITY WARNING TAPES

- A. Detectable underground utility warning tapes which can be located from the surface by a pipe detector shall be installed directly above non-metallic (PVC, polyethylene, concrete) pipe.
- B. The tape shall consist of a minimum thickness 0.35 mils solid aluminum foil encased in a protective inert plastic jacket that is impervious to all known alkalis, acids, chemical reagents and solvents found in the soil.
- C. The minimum overall thickness of the tape shall be 5.5 mils and the width shall not be less than 2" with a minimum unit weight of 2-1/2 pounds/1" x 1000'. The tape shall be color coded and imprinted with the message as follows:

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

- D. Detectable underground tape shall be "Detect Tape" as manufactured by Allen Systems, or equal.
- E. Installation of detectable tapes shall be per manufacturer's recommendations and shall be as close to the grade as is practical for optimum protection and detectability. Allow a minimum of 18" between the tape and the line.

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

PART 3 EXECUTION

3.01 LAYING NON-PRESSURE PIPE - GENERAL

A. General

1. All pipe may be tested for uniform diameter, straightness and defects before laying. Rejected pipe shall be removed from the PROJECT.
2. All pipe after being inspected and accepted shall be laid to the lines and grades shown on the DRAWINGS. The CONTRACTOR shall furnish all labor and materials for staking out lines and grades. All gravity pipelines shall be laid to constant grades between invert elevations shown on the DRAWINGS. Grades shown on DRAWINGS are invert of pipe, unless specifically noted otherwise. The pipe lengths shall be fitted together and matched to form a smooth and uniform invert.
3. Sub-grade, undercut, bedding and backfilling under, around and over the pipe shall all be in accordance with the details shown on the DRAWINGS. No pipe shall be laid until the sub-grade is properly in place.
4. Unnecessary walking upon the completed pipelines shall be avoided until trench has been backfilled to over the top of the pipe.
5. The interior of the pipe shall be cleaned of all dirt, jointing materials and superfluous materials of every description. When laying of pipe is stopped, the end of the pipe shall be securely plugged or capped. Care should be taken to prevent flotation of the pipe in the event the trench should floor. The CONTRACTOR will be responsible for relaying and/or relocating pipe if the pipe is laid before trenching has progressed far enough to eliminate the possibility of grade conflicts or realignment on account of existing structures, pipelines, or conduits.
6. In trench conditions where pipe is in danger of sinking below grade or floated out of grade or line, or where backfill materials are such a fluid nature that such movements of pipe might take place during

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

the placing of the backfill, the pipe shall be weighted or secured permanently in place.

7. Pipes shall be laid free from all structures other than those planned. Openings in and joints to contact walls shall be constructed as shown on the DRAWINGS.
8. Non-pressure pipes entering structures underground and unsupported by original earth for a distance of more than 3', shall be supported by Class "B" concrete, where depth of such support does not exceed 3'. All pipes entering buildings or basins, below original ground, which are higher than 3' depth above sub-grade, span more than 3' depth above sub-grade, span more than 3' between wall and original earth, and with more than 24" of cover or under a roadway, shall be supported by concrete beams with piers at 6' intervals between structural wall and edge of excavation for the structure, in order to prevent breakage from settlement of backfill about the structure. Concrete and reinforcing steel for these supports shall be in the lump sum portion of the CONTRACT; and no extra payment will be allowed. Pipe entering structures shall have flexible joint within 18" of exterior of structure or from point of leaving concrete support.
9. No backfilling except for securing pipe in place, shall be done until the ENGINEER has inspected the joints, alignment, and grade in the section laid. Such inspection, however, does not relieve the CONTRACTOR of liability in case of defective joints. Joints that show leakage will not be accepted. If after backfilling and inspection, any joints are found that are allowing groundwater to enter the sewer, such joints shall be sealed by the CONTRACTOR.
10. Flexible thermoplastic sewer pipe installation shall conform to ASTM D-2321, latest revision.
11. Ductile iron pipe installation shall conform to AWWA C-600-82, or latest revision.

B. Pipe Bedding

1. Pipe bedding for gravity sewers shall be as shown on the DRAWINGS. Crushed stone used for bedding shall be size shown, and shall comply with State Highway Department Standards.

3.02 TESTING SANITARY SEWERS PIPE

Note: Before entering any confined space, follow all local, state and federal safety precautions.

- A. A wetted interior pipe surface is desirable and will produce more consistent test results. Where practical, clean the line with cleaning balls, manufactured by Cherne Industries Incorporated or equal, prior to testing, to wet the pipe surface and eliminate debris.
- B. All new pipe shall be low-pressure air tested to insure the integrity of the pipe and joints.
- C. Air testing shall be performed by the CONTRACTOR using equipment manufactured by Cherne Industries Incorporated or approved equal. Equipment used shall meet the following minimum requirements:
 - 1. Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be inspected.
 - 2. Pneumatic plugs shall resist internal test pressures without requiring external bracing or blocking.
 - 3. All air used shall pass through a single control panel.
 - 4. Three (3) individual hoses shall be used for the following connections:
 - a. From control panel to pneumatic plugs for inflation.
 - b. From control panel to sealed line for introducing the low pressure air.
 - c. From sealed line to control panel for continually monitoring the air pressure rise in the sealed line.
- D. Air testing procedures shall follow guidelines outlined in ASTM SPECIFICATIONS C828, C924 and Uni-Bell B6, (see ASTM C828, C924 and Uni-Bell B6). All pneumatic plugs shall be seal tested before being used in the actual test installation. One length of pipe shall be laid on the ground and sealed at both ends with the pneumatic plugs to be checked. Air shall be introduced into the plugs to the manufacturer's recommended inflation pressure. The sealed pipe shall be pressurized to 5 PSIG. The plugs shall hold against this pressure without bracing and without movement of the plugs out of the pipe.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

After a manhole to manhole reach of pipe has been backfilled and cleaned, and the pneumatic plugs are checked by the above procedure, the plugs shall be placed in the line at each manhole and inflated to manufacturer's recommended inflation pressure. Low pressure air shall be introduced into this sealed line until the internal air pressure reaches 4 PSIG. At least two minutes shall be allowed for the air pressure to stabilize. After the stabilization period (3.5 PSIG minimum pressure in the pipe), the air hose from the control panel to the air supply shall be disconnected. The portion of line being tested shall be termed "Acceptable" if the allocated line pressure decreases less than one PSI in the time shown for the given diameters in the following table:

Nominal Pipe Size Inches	Time Minutes per 100 Feet
4.....	0.3
6.....	0.7
8.....	1.2
10.....	1.5
12.....	1.8
15.....	2.1
18.....	2.4
21.....	3.0
24.....	3.6

In areas where ground water is known to exist, the height in feet shall be divided by 2.35 to establish the pounds of pressure that will be added to all readings. (For example, if the height of water is 11-1/2 feet, then the added pressure will be 5 PSIG.)

If the installation fails to meet this requirement, the CONTRACTOR shall, at his own expense, determine the source of leakage. He shall perform a leak location test and then repair or replace all defective materials and/or workmanship.

E. Joints

Individual joint air tests shall be performed on pipe over 24" in diameter according to the following instructions: (see ASTM C1103-89)

1. Determine test pressure. Test pressure for large diameter pipe should be 3.5 PSIG (.24 bar). In addition, .43 PSIG (0.3 bar) is added to the 3.5 PSIG (.24 bar) for every foot of water head above the top of the pipeline, to a maximum pressure of 15 PSIG (1.03 bar). (i.e. 10 ft. of water head above a 60" diameter pipe would

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

require a test pressure of $10 \times .43 = (4.3 \text{ PSIG}) + 3.5 \text{ PSIG} = 7.8 \text{ PSIG}$ required test pressure.)

2. Position the Joint Tester so the end elements (inflatable pneumatic rings) are located on both sides of the joint to be tested. Inflate the end elements to 50 PSIG 93.4 bar).
3. Pressurize center cavity with air or water to test pressure calculated in Step 1 above. Allow pressure to stabilize (approx. 10-15 seconds) and turn off pressure source.
4. If the pressure in the cavity holds or drops less than 1 PSIG (.68 bar) in 5 seconds, the pipe joint shall be found to be acceptable. If the pressure drops over 1 PSIG the joint is defective and should be repaired.
5. When the joint test is completed all pressure must be exhausted from center cavity to 0 PSIG and then from the end elements to 0 PSIG. The Joint Tester can then be transported and positioned on the next joint to be tested.

The equipment used must be manufactured by Cherne Industries Incorporated or approved equal.

F. Deflection Test

Mandrel test (deflection test) shall be performed by the CONTRACTOR in order to verify the roundness and proper installation of the pipeline.

1. Mandrels shall be approved by the ENGINEER with proving rings prior to use and shall meet the following requirements:
 - a. Mandrel Sizing: The outside diameter of the mandrel shall be fabricated to the following SPECIFICATION:

Base Pipeline Diameter – (Percent of deflection limit times base pipeline diameter) = Mandrel diameter. In accordance with ANSI/ASTM D-3034 and F-679.
 - b. Mandrel Construction: The mandrel shall be of open design to prevent debris build-up from occurring between the channels of adjacent fins which in-turn causes erratic test results. The fin sets shall number at least (9) and be removable from the mandrel core by unscrewing the wing-nut and loosening the end caps which secure the fins in

02700-14

Perry County Sanitation District I
 KY 550 Airport Gardens Force Main
 Job 829.25

position. The contact area of the fins shall be equal to the nominal inside diameter of the pipe. Gauges of various diameters shall be assembled by substituting fin sets of appropriate dimension.

Equipment used must be manufactured by Cherne Industries Incorporated or approved equal.

2. Deflection Test

The deflection test shall consist of testing pipe for proper installation by the method outlined: (Set ASTM D3034)

After the pipeline has been installed and backfill materials have been compacted to their required standard densities (called out in ASTM D 2321 or other applicable standard), the mandrel shall be pulled by hand through the pipeline with a suitable rope or cable that is connected to an eyebolt at one end of the gauge. A similar rope or cable shall be attached to the eyebolt at the opposite end of the mandrel and tension shall be applied to it. This will insure that the mandrel maintains its correct position during testing and also to remove the mandrel if it should be lodged in an excessively deflected pipeline. Winching or other means of forcing the mandrel through the pipeline are unacceptable. Pipeline deflection testing performed within thirty (30) days of installation shall have a deflection not exceeding 5% of the base inside pipe diameter as established by ASTM Standards D3034 and F679 listed in the following table:

Deflection Gauge Dimensions: SDR 35

Nominal Size	Average I.D.	Base I.D.	5% Deflection Gauge
6"	5.893	5.742	5.46
8"	7.891	7.665	7.28
10"	9.864	9.563	9.08
12"	11.737	11.361	10.79
15"	14.374	13.898	13.20
18"	17.564	16.976	16.13
21"	20.707	20.004	19.00
24"	23.296	22.480	21.36
27"	26.258	25.327	24.06

Pipeline deflection testing performed thirty days (30) beyond the date of installation shall have a deflection not exceeding 7.5% of the nominal inside diameter or as established otherwise by the applicable governing body.

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

3. A permanent record of all testing with locations where excessive pipeline deflections occur shall be kept by the CONTRACTOR and forwarded to the ENGINEER after completion of testing on each line.
4. The CONTRACTOR shall immediately replace all sections of pipe which deflect more than 5% (or 7 1/2%).
5. All materials and labor required for testing and replacement of pipelines shall be furnished by the CONTRACTOR and the cost thereof included in the prices BID for furnishing and laying sewers.

3.03 PRESSURE PIPE INSTALLATION - GENERAL

A. General

1. Pipe shall be handled with such care as necessary to prevent damage during installation. The interior of the pipe shall be kept clean and the pipe shall be installed to the lines and grades shown on the DRAWINGS. Whenever pipe laying is stopped, the end of the pipe shall be securely plugged or capped.
2. Fittings shall be firmly blocked to original earth or rock to prevent water pressure from springing pipe sideward or upward. Concrete or other blocking material shall be placed such that it does not cover the pipe joints, nuts, and bolts.
3. Pipes shall be free of all structures other than those planned. Openings and joints to concrete walls shall be constructed as shown on the DRAWINGS.

B. Pressure Pipe Laying

1. Pressure pipe shall first be thoroughly cleaned at joints, then joined according to instructions and with tools recommended by the manufacturer. A copy of such instructions shall be available at all times at the site of the WORK.
2. All pipes must be forced and held together, or "homed" at the joints, before sealing or bolting. Pipe must be aligned as each joint is placed, so as to obtain straight lines and grades. Curves and changes in grades shall be laid in such a manner that maximum allowable joint deflection is not exceeded. If the manufacturer's specification prohibits deflection at a joint, all curvature must be

provided though deflection of the pipe within the tolerances permitted by the manufacturer.

3. Trench excavation for pipe laying must be of sufficient width to allow the proper jointing and alignment of the pipe. Trenches in earth or rock shall be dug deep enough to insure 30" minimum cover over top of the pipe, unless otherwise indicated on the DRAWINGS.
4. Trench line stations shall be set ahead of the trenching at least each 100 feet of pipeline. Trenches shall be dug true to alignment of stakes. Alignment of trenches or pipes in trench must not be changed to pass around obstacles such as poles, fences and other evident obstructions without the approval of the ENGINEER. Lines will be laid out to avoid obstacles as far as possible, consistent with maintenance of alignment necessary to finding the pipeline in the future and avoiding obstruction of future utilities and structures.
6. Cut pieces of pressure pipe 18" or more length may be used in fitting to the specials and valves and fitting changes in grade and alignment. Cut ends shall be even enough to make first class joints.
7. Pipe shall maintain a consistent positive or negative slope between air release and/or vacuum valves, and shall not create highpoints in the force main other than at air release and/or vacuum valve locations as shown on the DRAWINGS.
8. Push-on restrained joints, thrust-lock boltless push-on restrained joints. Grip Ring Pipe Restrainer (ROMAC) Series 1100 MEGALUG Mechanical Joint Restraint or equal shall be used at all pipe joint fitting angle changes in addition to concrete blocking.

C. Testing Pressure Pipe – Hydrostatic Testing

1. Test procedures shall meet the requirements of ANSI/AWWA C600.
2. The piping shall be complete, and thrust blocks shall have been in place for not less than 10 days prior to being tested.
3. Test closed-end pressure piping as follows:

- a. Expel all air from the piping prior to the application of test pressure. Tap the piping at high points, if necessary, to release all air from the piping. Plug taps after the test is successfully completed. Plugs shall be watertight.
 - b. Test piping at a static pressure of 150 pounds per square inch over a period of not less than eight consecutive hours. The test will be considered successful when the pressure drop over the test period is 5 pounds per square inch or less. If the pressure drop exceeds 5 pounds per square inch, repair the leaks and repeat the test. Repair leaks and repeat the test until the pressure drop over the test period is 5 pounds per square inch or less.
4. Test open-end pressure piping and ductile iron sewer piping as follows:
- a. The ends of piping being tested shall have test plugs or caps adapted with a tap of adequate diameter to fill and pressurize the system with water.
 - b. When a section is terminated at a manhole with a plain end (spigot), the pipe must extend into the manhole of sufficient length to accommodate a restraining cap. The benchwall shall be formed in the manhole after the test section has been approved.
 - c. Water shall be introduced into the section to be tested at the lower end. The upper end shall have an orifice at the top of the plug or cap to expel air when filling the system with water. All air shall be expelled from the pipe.
 - d. The test plugs or caps shall be capable of withstanding an internal pressure of 175 psi.
 - e. Gravity flow systems shall be tested in conformance with Section 13 of ANSI/AWWA C600, at 50 pounds per square inch over a period of not less than one hour. The system will not be acceptable until all leaks have been repaired.
 - f. Pumped flow systems shall be subjected to an internal pressure equal to 50% more than the maximum operating pressure, but in no case less than 50 psig or greater than 120 psig.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- g. Hydrostatic tests may be dangerous if, because of ignorance or carelessness, a line is improperly prepared. It is extremely important that the various plugs be installed in such a way as to prevent blowouts. Inasmuch as a force of 2,500 pounds is exerted on an 8-inch plug by an internal pipe pressure of 50 psi, it should be realized that sudden expulsion of a poorly installed plug or cap can be dangerous. As a safety precaution, no one shall be allowed in the manholes when the pipe is pressurized.

3.04 VALVE LEAKAGE TESTING

Test valves for leakage at the same time that the connecting pipelines are tested. See pressure testing requirements. Protect or isolate any parts of valves, operators, or control and instrumentation systems whose pressure rating is less than the pressure test. Valves shall show zero leakage. Repair or replace valves showing leaks and retest.

3.05 VALVE FIELD TESTING

- A. Operate manual valves through 10 full cycles of opening and closing. Valves shall operate from full open to full close without sticking or binding. If valves stick or bind, repair or replace the valve and repeat the tests.
- B. Gear operators shall operate valves from full open to full close through 10 cycles without binding or sticking. The pull required to operate handwheel or chainwheel-operated valves shall not exceed 80 pounds. The torque required to operate valves having 2-inch AWWA nuts shall not exceed 150 ft lbs. If operators stick or bind or if pulling forces and torques exceed the values stated previously, repair or replace the operators and repeat the tests. Operators shall be fully lubricated in accordance with the manufacturer's recommendations prior to operating.

3.06 FINAL CLEAN-UP

Before completion of the CONTRACT, all backfill shall be reshaped, holes filled and surplus material hauled away, and all permanent walks, street, driveway and highway paving, and sod, replaced and reseeding performed.

The CONTRACTOR shall be responsible for clean-up, grading, seeding, sodding or otherwise restoring all areas that he disturbs, even if these areas are within the WORK limits of other CONTRACTORS on this PROJECT.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

The WORK shall not be accepted until the right-of-way of roads and all private property has been cleared of all rubbish and loose stone, and also all equipment, excess material and temporary structures. All property which has been damaged in the course of the WORK shall be restored in a manner fully acceptable to the property owner.

3.07 BASIS FOR PAYMENT

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

END OF SECTION

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02733

MANHOLES

PART 1 GENERAL

1.01 SCOPE OF WORK

The WORK to be performed includes the furnishing of all labor, materials, equipment and services necessary for the construction of all manholes, including reinforced concrete rings, bases, barrels, steps, frames and covers, invert construction, stubs and all other appurtenances.

PART 2 PRODUCTS

2.01 MANHOLES

Precast concrete manholes shall consist of precast reinforced concrete sections, a conical or flat slab top section and a base section conforming with the typical manhole details as shown on the DRAWINGS.

Precast manhole sections shall be manufactured, tested and marked in accordance with the latest provisions of ASTM SPECIFICATION C-478.

Manholes shall be constructed of specified materials to the sizes, shapes and dimensions and at the location shown on the DRAWINGS or as otherwise directed by the ENGINEER. The height or depth of the manhole will vary with the location, but unless shown otherwise on the DRAWINGS, shall be such that the top of the manhole frame will be at finish grade in pavement and 2 inches above ground surface elsewhere and the invert will be at the designated elevations. Wall thickness of precast concrete manholes shall be as shown on the DRAWINGS.

Manholes shall be constructed of precast reinforced concrete manhole rings, unless specified otherwise. Form and dimensions shall be as shown on DRAWINGS. Bases for manholes shall be poured as shown on DRAWINGS.

The minimum compressive strength of the concrete for all sections shall be 4,000 psi.

The maximum allowable absorption of the concrete shall not exceed 8 percent of the dry weight.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

The ends of each reinforced concrete manhole riser section and the bottom end of the manhole top section shall be so formed that when the manhole risers and the top are assembled, they will make a continuous and uniform manhole.

Joints of manhole sections shall be of the tongue and groove type with preformed plastic gasket meeting the requirements of Federal SPECIFICATION SS-S-00210, "Sealing Compound, Preformed Plastic for Pipe Joints" Type 1, Rope Form. The sealing compound shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler and shall contain no solvents, irritating fumes, or obnoxious odors. The compound shall not depend on oxidizing, evaporating, or chemical action for its adhesive or cohesive strength. It shall be supplied in extruded rope-form of suitable cross-section and of such sizes as to seal the joint space when the manhole sections are set. The sealing compound shall be protected by a suitable removable two-piece wrapper.

Each section of the precast manhole shall have not more than two (2) holes for the purpose of handling and setting. These holes shall be tapered and shall be plugged with rubber stoppers or mortar after installation.

2.02 Manhole Castings

Manhole rims, toe pockets and covers shall be cast iron conforming to the minimum requirements of Federal SPECIFICATION WW-1-652 or to the latest ASTM SPECIFICATION A-48, for Class 30 gray iron castings. All castings shall be made accurately to the required dimensions, fully interchangeable, sound, smooth, clean and free from blisters and/or other defects. Defective castings which have been plugged or otherwise treated shall not be used. All castings shall be thoroughly cleaned and painted or coated with bituminous paint. Each casting shall have its actual weight in pounds stenciled or painted on it in white paint.

Manhole frames and covers shall be of the size and weights shown on the DRAWINGS and as manufactured by the J.R. Hoe & Sons, Neenah Foundry Co. No R1772-C, Clow No. F-3245-1 or equal. Sanitary sewer manhole covers shall have the word "Sanitary Sewer" cast on the top in letters 2 inches high.

Watertight manhole covers shall be equal to J.R. Hoe & Sons, Neenah Foundry Co., or equal. The size and weights shall be as shown on the DRAWINGS. Payment shall be as a cost difference between regular and watertight frames and covers.

2.03 Manhole Steps

Manhole steps shall be reinforced with three-eighths inch (3/8") Re-bar and shall have a polypropylene plastic coating identical to the dimensions of cast iron manhole steps. They shall be produced specifically for use as manhole steps. Spacing of steps shall be built into the walls of all manholes.

Manhole steps shall be installed in each section of the manhole in accordance with the details on the DRAWINGS.

2.04 Line Connectors

All manholes shall have rubber and/or neoprene line connectors for the installation of the line such as Kor-N-seal or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

Manhole inverts shall be constructed of 1:2 grout in accordance with details on the DRAWINGS and inverts shall have the same cross-section as the invert of the sewer which they connect. The manhole invert shall be carefully formed to the required size and grade by gradual and even changes in sections. Changes in direction of flow through the sewer shall be made to a true curve with as large a radius as the size of the manhole will permit. Only inverts with a smooth trowel finish will be acceptable.

The cast iron frame for the manhole cover shall be set at the required elevation and properly anchored to the masonry. Where manholes are constructed in paved areas, the top surface of the frame and cover shall be tilted to conform to the exact slope, crown and grade of the existing adjacent pavement.

Masonry WORK shall be allowed to set for a period of not less than 24 hours. Outside forms, if any, then shall be removed and the manhole backfilled and compacted in the manner provided in these SPECIFICATIONS. All loose or waste material shall be removed from the interior of the manhole. The manhole cover then shall be placed and the surface in the vicinity of the WORK cleaned off and left in a neat and orderly condition.

After backfilling has been completed, the excavated area, if located in a street, alley or sidewalk, shall be provided with a temporary surface.

A bench shall be provided in each side of any manhole channel when the pipe

diameter(s) are less than the manhole diameter. The bench should be sloped no less than ½ inch per foot (4%). No lateral sewer, service connection, or drop manhole pipe shall discharge onto the surface of the bench. (From "10-States Stds.")

3.02 TESTING

- A. Vacuum tests shall be conducted on newly constructed manholes. Preliminary manhole testing shall take place following construction after all connections are made, and before backfilling. Test results derived from this test will allow time for necessary repairs to be completed before further construction proceeds and hinders such repairs. Final tests must be performed after the manhole has been backfilled.
- B. Equipment:
 - 1. Manhole vacuum tester assembly and vacuum pumps shall be manufactured by Cherne Industries Incorporated or approved equal.
 - 2. Pneumatic plugs shall be manufactured by Cherne Industries Incorporated or approved equal. These plugs shall have a sealing length equal to or greater than the diameter of the connecting pipe to the be sealed.
- C. Procedures:
 - 1. Plug all manhole entrances and exits other than the manhole top access using suitably sized pneumatic or mechanical pipeline plugs and follow all manufacturer's recommendations and warnings for proper and safe installation of such plugs. Plugs should be inserted a minimum of 6" beyond manhole wall. Make sure such plugs are properly rated for the pressures required for the test. The standard test of 10" Hg. (mercury) is equivalent to approximately 5 PSIG (.3 bar) backpressure. Unless such plugs are mechanically restrained, it is recommended that the plugs are used with a minimum two times (2x) safety factor or a minimum of 10 PSIG (0.7 bar) backpressure usage rating.

CAUTION: BRACE INVERTS IF LINES ENTERING THE MANHOLE HAVE NOT BEEN BACKFILLED TO PREVENT PIPE FROM BEING DISLODGED AND PULLED INTO THE MANHOLE.

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

2. Install the vacuum tester head assemble at the top access of manhole. Adjust the cross brace to insure that the inflatable sealing element inflates and seals against the straight top section of the manhole or the ring assembly, if possible. (If using a "plate" style manhole tester, position the plate on the manhole ring assembly.)
3. Attach the vacuum pump assembly to the proper connection on the test head assemble. Make sure the vacuum inlet/outlet valve is in the closed position.
4. Following safety precautions and manufacturer's instructions, inflate sealing element to the recommend maximum inflation pressure.

CAUTION: DO NOT OVER INFLATE!

5. Start the vacuum pump and allow pre-set RPM to stabilize.
6. Open the inlet/outlet ball valve and evacuate the manhole to 10" Hg. (approximately negative 5 PSIG, 0.3 bar).

CAUTION: DO NOT PRESSURIZE MANHOLE! THIS MAY RESULT IN MANHOLE DAMAGE AND/OR RESULT IN MANHOLE TEST HEAD DISLODGING FROM MANHOLE INLET!

7. Close vacuum inlet/outlet ball valve and monitor vacuum for specified test period (see Minimum Test Times for Various Manhole Diameters table on the following page). If vacuum does not drop in excess of 1" Hg., manhole is considered acceptable and the manhole passes the test. If manhole fails the test, complete necessary repairs and repeat test procedure until satisfactory results are obtained.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

Minimum Test Times for Various Manhole Diameters									
Depth, Feet	Diameter, Inches								
	30	33	36	42	48	54	60	66	72
	Time, Seconds								
0 to 8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	64	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	98	108	121

(The valves listed above are taken from ASTM SPECIFICATION C1244-93 "Standard Test Method for Concrete Manholes by the Negative Air Pressure (Vacuum) Test.")

- D. Repeat the above test procedure after backfilling manhole for final acceptance test.

All plugs and equipment used must be manufactured by Cherne Industries Incorporated or approved equal.

3.05 BASIS FOR PAYMENT

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

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 02900

LANDSCAPING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. Landscape development work in this phase is generally limited to seeding and sodding.

1.02 RELATED WORK

- A. Sub-grade elevations, excavation, filling, and grading required to establish elevations shown on Drawings are not specified in this Section. Refer to this Division, Section 02200.
- B. Erosion and sediment control are included in this Division, Section 02270.

1.03 SCOPE OF WORK

- A. Sod shall be placed on all slopes steeper than 3:1 except for dam embankment slopes. All other surfaces including dam embankment slopes shall be fertilized and seeded as specified hereinafter, except for those surfaces to be paved or rip-rapped.
- B. Fertilizing and seeding shall be performed on all disturbed areas within the limits of work of this contract which are not specified to be sodded and are not occupied by structures, road, concrete slab walls, etc. or within the impoundment area.

PART 2 PRODUCTS

2.01 QUALITY OF SOD

- A. Sod shall be well-rooted Kentucky Blue Grass sod or other approved pasture sod, completely free from noxious weeds, and reasonably free from objectionable grasses, weeds and stones or other foreign materials. The source of the sod shall be available for inspection and approval by the ENGINEER prior to stripping.
- B. Sections of sod stripped may vary in length not to exceed 8 feet but shall be of uniform width of not less than 10 inches nor more than 18 inches,

and shall be cut to a depth of not less than 1 inch and not more than 2 inches. The above widths and lengths are required to ensure proper handling without undue tearing and breaking. Sod from light sand or heavy clay will not be accepted. When cut in strips, the sod shall be rolled with the grass folded inside. The sod shall be cut by means of an approved mechanical sod cutter. During dry weather, the sod shall be watered before stripping to ensure its vitality and to prevent the loss of soil from the roots. Sod shall be rejected if permitted to decay or dry out to the extent that, in the judgment of the ENGINEER, its survival is doubtful.

2.02 PLACING SOD

- A. The sod bed shall be shaped to a smooth even surface and shall be graded such that the sod, when in place, shall be flush with any adjacent turfed area, pavement or other structures, except when otherwise directed by the ENGINEER. Prior to placing of the sod, fertilizer (10-20-10 - Ratio - 25 lbs. per one thousand square feet), Agricultural Limestone (Ratio - 75 lbs. per one thousand square feet), shall be applied, harrowed, raked or otherwise incorporated into the soil. After application of above, the sod bed, if dry, shall be moistened to the loosened depth.
- B. No sod shall be placed when the temperature is below 32°F. No frozen sod shall be placed, nor shall any sod be placed on frozen soil. Sod shall not be placed during extremely dry weather unless authorized, in writing, by the ENGINEER and provided that immediately after placing, the wood is covered with a 1 inch thickness of straw mulch.
- C. The sod shall be carefully placed by hand so that each section closely joins the adjacent sections without overlapping. All open spaces or gaps shall be plugged with sod cut to the same size and shape.
- D. The sod, after it is placed, shall be wetted thoroughly and tamped or rolled to incorporate the roots with the sod bed and to ensure tight joints between strips.
- E. All sodded areas shall be kept thoroughly moist for 2 weeks after sodding.

2.03 FERTILIZING AND SEEDING

- A. This work consists of furnishing all labor, equipment and materials and in performing all operations in connection with the fertilizing and seeding of all the finished graded areas not specified to be sodded or occupied by structures, roads, concrete slabs, sidewalks, walls, etc., and including grassed areas destroyed or damaged by the CONTRACTOR.

Perry County Sanitation District 1
 KY 550 Airport Gardens Force Main
 Job 829.25

- B. The areas to be seeded shall be thoroughly tilled to a depth of at least 4" by deicing, harrowing, or other approved methods until the condition of the soil is acceptable to the ENGINEER. After harrowing or deicing, the seed bed shall be dragged and/or hand raked to finished grade.
- C. Fertilizer shall be 25 lbs. of 10-20-10 or equivalent per 1,000 square feet. The incorporation of the fertilizer and the agricultural lime (Ratio - 75 lbs. per one thousand square feet) may be a part of the tillage operation and shall be applied not less than 24 hours nor more than 48 hours before the seed is to be sown.
- D. The seed mixture to be sown shall be in the following proportions:

Common Name	Proportion By Weight	% of Purity	% of Germination
Kentucky Bluegrass	40	90	85
Chewings Fescue	25	90	85
Italian Rye Grass	20	90	85
Red Top	10	90	85
White Clover	5	95	90

- E. All seed shall be fresh and clean and shall be delivered mixed, in unopened packages, bearing a guaranteed analysis of the seed and mixture.
- F. Seed shall be broadcast either by hand or approved sowing equipment at the rate of ninety (90) pounds per acre (two pounds per 1,000 square feet), uniformly distributed over the area. Broadcasting seed during high winds will not be permitted. The seed shall be drilled or raked into a depth of approximately 1/2 inch and the seeded area shall be lightly raked to cover the seed and rolled. Drill seeding shall be done with approved equipment with drills not more than 3 inches apart. All ridges shall be smoothed out, and all furrows and wheel tracks, shall be removed.
- G. Seed may be sown during the following periods:

February 1 to April 15
 August 15 to October 15
- H. Seed may not be sown at any other time except with the written approval of the ENGINEER.

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

- I. After the seed has been sown, the areas so seeded shall be mulched with clean straw at the rate of one (1) bale per 2,000 feet (approximately 1 inch loose depth). Mulch on slopes shall be held in place with binder twine staked down at approximately 18 inch centers or by other equally acceptable means.
- J. Areas seeded shall be protected until a uniform stand develops, when it will be accepted and the CONTRACTOR relieved of further responsibility for maintenance. Displaced mulch shall be replaced or any damage to the seeded area shall be repaired promptly, both in a manner to cause minimum disturbance to the existing stand of grass. If necessary to obtain a uniform stand, the CONTRACTOR shall re-fertilize, re-seed and re-mulch as needed. Scattered bare spots up to one (1) square yard in size will be allowed up to a maximum of 10 percent of any area.

PART 3 EXECUTION

3.01 SEQUENCE OF WORK

- A. All finish grading in a general area shall be complete before sodding or fertilizing and seeding begins.

3.02 BASIS FOR PAYMENT

- A. Payment for sod or fertilizing and seeding shall be made on a unit price or a lump sum basis where a separate bid item is provided. Otherwise payment for all landscaping required for other work, such as structures, pipelines, etc., shall be made on a unit price or lump sum basis bid for that work.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 WORK INCLUDED

- A. This section includes cast-in-place concrete, formwork, reinforcing steel and related accessories in conformance with the requirements of ACI 301-latest revision, Specifications for Structural Concrete, which is hereby made a part of these Specifications except as modified by the Supplemental Requirements under PART 3. - EXECUTION, this Section.
- B. ACI 301 - latest revision is the latest consensus standard publication on concrete work and, as modified by the Supplemental Requirements in PART 3 - EXECUTION, this Section, is a complete specification. ACI 301-latest revision is part of Field Reference Manual ACI Publication SP-15 (latest revision) which includes pertinent ACI and ASTM standards considered helpful and necessary job-site reference. The Supplemental Requirements can easily be noted or clipped and taped in SP-15 (latest revision) for ready referral. The CONTRACTOR shall keep at least one copy of SP-15 (latest revision) in the field office at all times.
- C. PART 2 - PRODUCTS, this Section, includes the common concrete ingredients of cement, aggregate and water as well as admixture and grout and other concrete related items such as reinforcing steel, waterstop and joint materials. These products are also generally addressed under PART 3 - EXECUTION in ACI 301-latest revision with modifications.
- D. The work also includes furnishing all labor, materials, equipment and incidentals required to place anchor bolts, inserts, reglets, flashing, pipe sleeves, conduits and other items to be embedded or passed through the concrete as specified under other sections or as shown on the Architectural, Mechanical, Electrical and Instrumentation and Heating and Ventilating Project Drawings.
- E. Quality assurance (ACI Section 1.6). The CONTRACTOR shall employ a qualified testing agency to measure the slump, air, temperature and age of the concrete mixture delivered to the site. The CONTRACTOR'S testing agent will also make three test cylinders from each 50 cubic yards, or fraction thereof, of each concrete mixture placed in any one day.

PART 2 PRODUCTS

2.01 MATERIALS

A. General

1. After award of the Contract, the CONTRACTOR shall submit in writing to the ENGINEER the name, address and qualifications of the ready-mix supplier who will furnish concrete for the project. The CONTRACTOR shall also submit the supplier and source of the sand, coarse aggregate, cement, admixtures, and the proposed mix design. The testing laboratory selected by the CONTRACTOR and approved by the ENGINEER shall receive from the ENGINEER a copy of this Section 03300, this Division, of the Project Specifications. The CONTRACTOR shall send the required materials to the testing laboratory for mix design testing unless pre-qualified mixes are on hand that have adequate test results per ACI 301.
2. Each material submitted for tests shall be from the same single source as material proposed for the concrete work unless otherwise required or permitted.
3. Also refer to ACI 301-latest revisions and Supplemental Requirements under PART 3 - EXECUTION, this Section.

B. Cement (ACI Section 4.2.1.1.a)

1. Portland cement for concrete and mortar shall conform to ASTM C 150-latest revision, Type I.
2. The ENGINEER may require the CONTRACTOR to deliver cement to the testing laboratory for tests according to ASTM Specification C 150-latest revision for Type I. Should cement fail the tests, the CONTRACTOR shall pay for the tests and the ENGINEER shall have the right to reject the brand.
3. Cement for tests shall be delivered in four-ply paper bags with supplier and source identified in writing. Cement shall be stored in a dry location for not longer than 90 days after delivery from the mill.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

C. Admixtures (ACI Section 4.2.1.4)

1. The air-entraining admixture for concrete shall conform to ASTM C 260-latest revision.
2. The water-reducing admixture for concrete shall conform to ASTM C 494-latest revision for Type A (water-reducing admixtures). The water-reducing, set retarding admixture for concrete shall conform to ASTM C 494-latest revision for Type D (water-reducing and retarding admixtures).
3. The admixture manufacturer shall furnish a qualified concrete technician employed by the manufacturer, to assist in the proper field batching and use the specified admixtures if requested by the Engineer. The technician shall visit the site at the beginning of concrete operations and as requested during construction. In addition, the manufacturer shall furnish the ready mix plant with accurate and dependable equipment for the proper dispensing of admixture.
4. Substitute admixtures will be acceptable provided they meet or exceed all properties of the specified materials and specified field service is provided.
5. The CONTRACTOR shall deliver, to the testing laboratory selected by the OWNER, 12 fluid ounces of each admixture required in the concrete design mix such as air entraining, water-reducing, and water-reducing, set-retarding admixtures. Admixture samples shall be labeled with printed identification indicating trade name, strength, dosage instructions and manufacturer.
6. Pozzolanic admixtures according to "Specification for Fly Ash and Raw or Calcined Natural Pozzolans for Use in Portland Cement Concrete" (ASTM C 618-latest revision) and ACI 301, 4.2.1.1.c shall be limited to 25% of the minimum cement by weight.
7. In some circumstances approved in writing by the Engineer, accelerating admixtures conforming to AASHTO M 194, Type C, may be used except the relative durability factor shall not be less than 90 and the chloride content (as Cl) shall not exceed one percent by weight of the admixture.

- D. Water (ACI 301 Section 4.2.1.3)
1. Water shall be clean and free from injurious amounts of oils, acid, alkali, organic matter, or other deleterious substances. Potable tap water will normally fulfill the above requirements, but the requirements of ASTM C 94 shall be met.
 2. When subjected to the mortar strength test described in ASTM C 94-latest revision, the 28-day strength of mortar specimens made with the water under examination and normal portland cement shall be at least 100 percent of the strength of similar specimens made with distilled water.
- E. Fine Aggregate (ACI 301 Section 4.2.1.2)
1. Fine aggregate shall consist of clean, well graded particles of hard, durable sand and shall contain limited amounts of deleterious substances. Fine aggregates shall meet the requirements of KTC Section 805 or ASTM C 33.
 2. The CONTRACTOR shall deliver sand as requested by the ENGINEER to the testing laboratory for initial and periodic tests. Usually 150 pounds of sand for initial and periodic tests will be sufficient. All material delivered to the laboratory shall be accompanied by identification in writing as to supplier and source.
 3. Sand shall be graded in accordance with Section 804-latest revision of the Kentucky Transportation Cabinet, Department of Highways Standard Specifications for Road and Bridge Construction - latest edition.

	Percent
Passing 3/8 inch Sieve	100
Passing No. 4 Sieve	90-100
Passing No. 16 Sieve	45-85
Passing No. 50 Sieve	5-25
Passing No. 100 Sieve	0-8

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

4. Sand shall meet the requirements of these Specifications and the specifications and tests listed below:

Deleterious Substances	Par. 5 - ASTM Designation C 33-latest revision.
Soundness	Par. 6 - ASTM Designation C 33-latest revision.
Organic Impurities	ASTM Designation C 33-latest revision.

F. Coarse Aggregate (ACI 301 Section 4.2.1.2)

1. Coarse aggregate shall be washed river gravel or crushed limestone of hard durable particles and shall contain limited amounts of deleterious substances. Crushed limestone shall come from ledges of a quarry approved by the Kentucky Transportation Cabinet, Department of Highways for use in reinforced concrete untreated bridge superstructures above the tops of the caps excluding pedestals.
2. The CONTRACTOR shall deliver coarse aggregate as requested by the ENGINEER to the testing laboratory for initial tests and periodic tests. Usually 200 pounds of coarse aggregate for initial and periodic tests will be sufficient. All material delivered to the laboratory shall be accompanied by identification in writing as to supplier and source.
3. Coarse aggregate shall be graded in accordance with ASTM C 33 and Section 805 of the Kentucky Transportation Cabinet, Department of Highways Standard Specifications for Road and Bridge Construction-latest edition. Refer to ACI 301 Section 4.2.2.3 for maximum size of coarse aggregate.

	Percent By Weight	
	No. 57	No. 67
Passing 1-1/2-Inch Square Sieve	100	--
Passing 1-Inch Square Sieve	95-100	100
Passing 3/4-Inch Square Sieve	--	90-100
Passing 1/2-Inch Square Sieve	25-60	--
Passing 3/8-Inch Square Sieve	--	20-55
Passing No. 4 Square Sieve	0-10	0-10
Passing No. 8 Square Sieve	0- 5	0- 5

4. Coarse aggregate shall meet the requirements of these Specifications and the specifications and tests listed below:

Deleterious Substances Par. 9 - ASTM Designation C 33-
latest revision

Soundness Par. 9 - ASTM Designation C 33-
latest revision

Abrasion Par. 9 - ASTM Designation C 33-
latest revision

G. Reinforcing Steel (ACI Section 3)

1. Unless otherwise required or permitted, concrete reinforcing bars shall conform to grade 60 deformed bars and shall meet requirements of Deformed and plain Billet-Steel Bars for Concrete Reinforcement (ASTM A 615-latest revision), Rail-Steel Deformed and Plain Bars for Concrete Reinforcement (ASTM A 616-latest revision) or Axle-Steel Deformed and Plain Bars for Concrete Reinforcement (ASTM A 617-latest revision). All other reinforcement and details shall conform to ACI Standard Building Code Requirements for Reinforced Concrete (ACI 318-latest revision).
2. Before steel is shipped to job, the reinforcing steel supplier shall submit to the ENGINEER, 2 certified copies of mill tests on all steel to be used in the work. The tests shall substantiate that chemical and physical properties of the steel comply with the requirements of the governing specifications.
3. The CONTRACTOR shall carry in stock at the beginning of the concrete work the following amounts of extra reinforcing steel for replacement of lost steel or additional steel considered necessary by the ENGINEER.

5	3/8-Inch Rods	30 Feet	-	0-Inch Long
5	1/2-Inch Rods	30 Feet	-	0-Inch Long
5	5/8-Inch Rods	30 Feet	-	0-Inch Long

H. Non-shrink Grout

1. Unless otherwise required or permitted, the grout for non-shrink waterproof joints, waterproof mortar patches, filling under handrail

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

floor flanges and anchoring bolts into existing concrete shall be Sonneborn-Contech SonogROUT, Master Builders' Masterflow 713 grout, or equal. The grout for use under base plates of columns, pumps, compressors, generators and similar heavy equipment, and for rebar grouting shall be Sonneborn-Contech FerroLith GNC, Master Builders' Embeco 636 grout or equal.

I. Waterstop for Construction and Control Joints

1. Water stops shall be volclay waterstop RX101 by American Colloid Co., or equivalent. Alternately, waterstops may be 4-inches wide, 3/16-inch minimum thickness, ribbed with center bulb, virgin polyvinyl chloride, in accordance with Corps of Engineers Specifications CRD-C-572, latest revision, as manufactured by Vinylex Corp., W. R. Grace Co., or approved equal.
2. Waterstops shall be furnished in maximum lengths available to reduce the number of joints to the minimum. All joints shall be lapped, as recommended by manufacturer, to make the stops continuous and watertight.

J. Waterstop for Expansion Joints

1. Waterstops, where required in expansion joints, shall be 9-inches wide, 1/4-inch minimum thickness, ribbed with center bulb, virgin polyvinyl chloride, in accordance with Corps of Engineers Specification CRD-C-572, latest revision, as manufactured by Vinylex Corp., W. R. Grace Co., or approved equal.

K. Premolded Joint Fillers

1. Joint fillers, where required, shall be Sonneborn-Contech Sonoflex F foam expansion joint filler (closed cell, ultraviolet stable, polyethylene foam), or equivalent W. R. Grace Co., products, or equal. Where application requires cementing the joint filler into place, such as in a wall expansion joint, a pressure-sensitive adhesive recommended by the filler manufacturer shall be used.

L. Joint Sealants and Backing for Sealants

1. For sealing vertical exposed faces of joint filters, use Sonneborn-Contech Sonolastic NPI (one component urethane) or equivalent W. R. Grace Co. products, or equal. For water immersion, prime with Sonneborn-Contech Primer No. 733 for concrete and masonry

and Primer No.758 for glass and metals or as required by manufacturers of equivalent acceptable sealants.

2. For sealing horizontal exposed faces of joint fillers, use Sonneborn-Contech Sonolastic SL1, one-part, self-leveling, polyurethane sealant with Primer No. 733 or equivalent W.R. Grace Co. products, or equal.
3. Where additional sealant backing is needed to control the depth of sealant in relation to joint width, use Sonneborn-Contech Sonoflex F foam expansion joint filler or Sonofoam Backer Rod (closed cell polyethylene foam) or equivalent W. R. Grace Co. products, or approved equal.

M. Self-Leveling Floor, Deck and Sidewalk Joint Sealant

1. One-part self-leveling polyurethane sealant for concrete floors, decks, sidewalks and other horizontal contraction and expansion joints shall be Sonolastic SL1 as manufactured by Sonneborne-Contech or equivalent by W. R. Grace Company, or equal.
2. Sealant shall comply with Federal Specification TT-S-00230C, Type 1 Class A and ASTM C 920-latest revision, Type S, Grade P, Class 25. Joint primer shall be Sonolastic Joint Primer No. 733, or equal, shall be used where joints will be subjected to continuous or protracted periods of water immersion. When required in deep joints, backing material shall be Sonofoam Backer-Rod, or equal, which should not be primed and/or punctured.
3. Sealant color shall be limestone gray, tan, and/or mortar (stone) as selected by the ENGINEER unless otherwise required or permitted.

N. Concrete Floor Curing and Sealing System

1. System shall be a pigmented, ready to use, non-yellowing, acrylic curing and sealing compound which seals by providing a tough scuff resistant film over freshly finished concrete and complies with ASTM C309 and AASHTO M-148. System shall be Gray Kure-N-Seal as manufactured by Sonneborn-Contech or equivalent by W. R. Grace Company, or approved equal.

O. Vibration Isolating Pit Liners

place by process mechanical equipment, curbs, gutters, driveways, sidewalks, and base courses for highway and street paving.

1. Class 3,000 concrete ($f'c = 3,000$ psi) for structures and components as indicated on the Project Drawings.
1. Class 2,500 concrete ($f'c = 2,500$ psi, minimum cement factor of 450 lb./cu. Yd. And 3 to 6 inch slump) for encasement around sewers and branches for cradle or refill under conduits and fill under structures as specified or indicated on the Project Drawings.

1. ACI Section 7 – Weight

Lightweight concrete shall not be used unless otherwise required or permitted.

1. ACI Section 4 – Durability

1. ACI Section 4.2.2.4 – Air Entrainment

Substitute the following:

Classes 4,000 and 3,500 concrete required to be watertight or subjected to potentially destructive exposure (other than wear and loading) such as freezing and thawing, severe weathering or deicer chemicals shall have an entrained air content of 5 +1% by volume. Measurement of air content shall meet the requirements of ASTM C231-latest revision, ASTM C173-latest revision or ASTM C138-latest revision.

1. ACI 301 Section 4.2.2 – Water-Cement
Ratio/Watertightness

Substitute the following:

Classes 4,000 and 3,500 concrete which must be watertight shall have a maximum water-cement ratio of 0.45. Where watertightness is the primary concern, refer to ACI 350.

1. ACI 301 Section 5 – Handling, Placing, and Constructing.

1. ACI 301 Section 5 – Use

Add the following final paragraph:

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

The ENGINEER may require a set-retarding admixture if required by construction conditions. Otherwise, the CONTRACTOR shall have the option to use a retarding, a water reducing, or a water reducing set-retarding admixture. However, once accepted by the ENGINEER, the CONTRACTOR shall be consistent in admixture use, for example in all wall pours of a structure. Accelerating admixture shall not be used unless otherwise required or permitted.

1. ACI 301 Section 4.2.2 – Performance and Design Requirements

1. ACI 301 Table 4.2.2.1- Minimum cementitious-materials content for floors.

Add the following final paragraph:

Classes 4,000, 3,500 and 3,000 concrete as required in the work, shall be proportioned according to ACI Sections 3.9 or 3.10. The CONTRACTOR shall furnish design mixes of Classes 2,500 concrete, if requested by the ENGINEER, in accordance with good practices of proportioning and the required cement factors and slumps.

1. ACI Section 3.14.1 – Concrete Floors

Add the following final paragraph:

All floors including those in liquid-holding basins shall be case of Class 4,000 concrete and shall meet the requirements for Class 4 floors unless otherwise required or permitted.

1. ACI 301 SECTION 2 – FORMWORK AND FORMWORK ACCESSORIES

1. ACI Section 2.1 – General

- a. ACI Section 2.1.2 – Submittals

Substitute the following:

Formwork is the CONTRACTOR'S responsibility and shop drawings will not be required.

2. ACI Section 2.2 - Products
 - a. ACI Section 2.2.1 Materials
 - 2.2.1.3 - Formwork Release Agents
Add the following paragraph:
For potable water treatment facilities, the form coating shall be non-toxic after a specified period, usually 30 days.
 - b. ACI Section 2.2.2 Performance and design requirements
 - c. ACI Section 2.2.3 Fabrication and manufacture
3. ACI Section 2.3 – Execution
 - a. ACI Section 2.3.1 Construction and erection of formwork
 - b. ACI Section 2.3.2 Removal of formwork

Substitute the following:

Forms and shoring in the formwork used to support the weight of concrete in beams, slabs and other structural members shall remain in place until the concrete has reached 75 percent of the specified strength if, after stripping the forms, the structural system is reshored the same day of stripping and shores remain in place until the specified concrete strength is reached. Deviation from these requirements shall not occur unless otherwise required or permitted.

When shores and other vertical supports are so arranged that the non-load-carrying form facing material may be removed without loosening or disturbing the shores and supports, the facing material may be removed when the concrete has reached 50 percent of the specified strength unless otherwise required or permitted.
 - c. ACI Section 2.3.3 Reshoring and backshoring
 - d. ACI Section 2.3.4 Strength of concrete required for removal of formwork
 - e. ACI Section 2.3.5 Field quality control – horizontal and vertical location.

D. ACI SECTION 3 – REINFORCEMENT AND REINFORCEMENT SUPPORTS

1. ACI Section 3.1 – General
 - a. ACI Section 3.1.1 Submittals, data, and drawings
Add the following:
Submit cut sheets describing any coated reinforcement, placement spacers, or other accessories.
 - b. ACI Section 3.1.2 Materials delivery, storage, and handling
2. ACI Section 3.2 - Products
 - a. ACI Section 3.2.1 Materials
 - b. ACI Section 3.2.2 Fabrication
3. ACI Section 3.3 – Execution
 - a. ACI Section 3.3.1 Preparation
 - b. ACI Section 3.3.2 Placement

E. SECTION 4 – CONCRETE MIXTURES

1. ACI Section 4.1 – General
 - a. ACI Section 4.1.2 – Submittals are required. Note that calcium chloride use is not permitted
 - b. ACI Section 4.1.3 – Quality control
 - c. ACI Section 4.1.4 – Materials storage and handling
2. ACI Section 4.2 - Products
 - a. ACI Section 4.2.1 – Materials. Cement Mill Test reports are required.
 - b. ACI Section 4.2.2 – Performance and design requirements
 - c. ACI Section 4.2.3 – Proportioning

3. ACI Section - Execution
 - a. ACI Section 4.3.1 – Measuring, batching, and mixing
 - b. ACI Section 4.3.2 – Delivery

F. SECTION 5 – HANDLING, PLACING, AND CONSTRUCTING

1. ACI Section 5.1 – General
 - a. ACI Section 5.1.1- Description
 - b. ACI Section 5.1.2 – Submittals
 - c. ACI Section 5.1.2 – Delivery, storage, and handling
2. ACI Section 5.2 – Products
 - a. ACI Section 5.2.1 – Materials
 - b. ACI Section 5.2.2 – Performance and design requirements
3. ACI Section 5.3 – Execution
 - a. ACI Section 5.3.1 – Preparation
 - b. ACI Section 5.3.2 - Placement of concrete
 - c. ACI Section 5.3.3 – Finishing formed surfaces
Substitute the following:

After removal of forms, the surfaces of concrete shall be given the finishes specified below unless otherwise required or permitted.

Add the following paragraph:

When finishing is initially started, a sample of each finish required shall be produced on an area of at least 100 sq. ft. in a location designated by the ENGINEER to establish a standard of acceptability and a reference for ongoing comparison.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

Add the following paragraph:

Rough form finish shall be used on all concrete surfaces which are not normally exposed to the view of the public or to the view of personnel responsible for operation of maintenance of the facilities. Covered under this category shall be surfaces similar to and inclusive of inside surfaces of covered vaults, covered intake structures, covered clear wells and covered basins; surfaces 2 feet and greater below operating liquid level in open basins; surfaces in contact with fills and 1 foot or greater below the top of fills; and any additional surfaces required or permitted.

d. ACI Section 5.3.3.3.b - Smooth Form Finish

Add the following final paragraph:

Smooth form finish shall be used on all surfaces not included in ACI Section 5.3.3 above unless otherwise required or permitted.

e. ACI Section 5.3.3.4.b - Grout-Cleaned Finish

Add the following final paragraphs:

Grout-cleaned finish shall be applied to all smooth form finish surfaces unless otherwise required or permitted.

Grout-cleaned finish shall be undertaken as soon as forms can be removed without jeopardizing the structure and after necessary patching has been completed. In order to insure continuity of color and texture, grout cleaned finish shall be applied at one time to continuous, plane, surfaces such as from corner to corner of a wall, as determined by the ENGINEER.

H. ACI 5.3.4 – Finishing unformed surfaces (Slabs)

1. ACI Section 5.3.4.2 – Finishes and tolerances - Add Specified Finishes.

Slab finishes shall be as follows unless otherwise required or permitted.

a. Trowel finish shall be applied to concrete on which process water and sewage flow and to all surfaces normally

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

intended as walking surfaces including surfaces to receive covering such as tile, and in working and operating areas except as required below for non-slip surfaces.

- b. Broom or belted finish shall be applied to all exterior sidewalks, steps, platforms, ramps and concrete walking surfaces and to interior sloped walking surfaces frequently cleaned by hosing such as garage floors. Brooming shall be in the direction of the slab drainage maintaining the required surface tolerance to provide non-slip finish.
 - c. Floated finish shall be applied to all surfaces intended to receive roofing, waterproofing membranes or sand bed terrazzo.
 - d. Refer to Project Drawings for any special requirements.
- I. ACI Section 5.3.5 – Sawed Contraction Joints
 - J. ACI Section 5.3.6 - Curing and Protection
 - 1. ACI Section 5.3.6.4 - Preservation of Moisture
 - a. Add the following paragraph:

Detailed recommendations given in "Recommended Practice for Curing Concrete" (ACI 308-latest revision) shall be followed.
 - b. Add the following final paragraph:

When concrete floors are shown on the Drawings to be sealed, two coats of Gray Kure-N-Seal, or equal, specified under Section 5.2 – Products, shall be applied at the rate of 200-400 SF/gal. Depending on surface texture and porosity. The first coat shall be applied over freshly finished concrete and the final coat shall be applied after completion of the work to thoroughly cleaned floors. All work shall be done strictly according to the manufacturer's instructions.
 - K. ACI Section 5.3.7 – Repair of surface defects
 - L. Acceptance of Structure.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

All concrete intended to hold liquids or intended to prevent passage of liquids such as groundwater shall be watertight. Water seepage or dampness shall not be apparent after concrete has been subjected to service conditions including backfills, operating liquid levels and groundwater for a minimum of 7 days unless otherwise required or permitted. The OWNER will furnish test water for pumping by the CONTRACTOR. To achieve the required watertightness, the foregoing specifications must be rigidly followed. If any leakage or dampness shows on slab wall surfaces or is apparent after testing, the defects shall be corrected by the CONTRACTOR before acceptance is granted.

M. BASIS FOR PAYMENT

1. Payment for concrete work shall include all excavation, crushed stone bedding, forms, reinforcing steel, finishing, concrete testing, etc. and shall be made on a unit price or lump sum basis where a separate bid item is provided. Otherwise payment for all concrete required for other work as shown on the PLANS shall be made on a unit price or a lump sum basis for that work.
2. Payment for concrete work shall be made only after an acceptable finish and compression tests results are obtained.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 03740

MODIFICATIONS TO EXISTING CONCRETE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required to cut, repair or otherwise modify parts of existing concrete structures or appurtenances as shown on the Drawings and as specified herein as necessary to complete the work under this Contract.
- B. Work under this Section shall also include bonding new concrete to existing concrete.

1.02 RELATED WORK

- A. Demolition is included in Division 2, Section 02050.
- B. Excavation and Backfill are included in Division 2.
- C. Concrete, Concrete Reinforcement and Accessories are included in this Division.

1.03 GENERAL

- A. No existing structure or concrete shall be shifted, cut, removed, or otherwise altered until authorization is given by the ENGINEER.
- B. When removing materials or portions of existing structures and when making openings in existing structures, all precautions shall be taken and all necessary barriers, shorings and bracing and other protective devices shall be erected to prevent damage to the structures beyond the limits necessary for the new work, protect personnel, and to prevent damage to the structures or contents by falling or flying debris. Unless otherwise permitted, shown or specified, saw cutting shall be required in cutting existing concrete. Where saw cutting is not possible, line drilling will be permitted.

PART 2 PRODUCTS

2.01 MATERIALS

A. Bonding Compound

1. General

- a. The bonding compound shall be a 2-component, solvent-free, moisture insensitive epoxy resin material suitable for use as a bonding adhesive to bond fresh, plastic concrete to clean, sound hardened concrete and for grouting bolts and the bonding of mating materials.

2. Material

- a. The epoxy material shall conform to the following requirements:

- (1) Component A - Component A shall be a modified epoxy resin of the epichlorohydrin-bisphenol-A type containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.

- (2) Component B - Component B shall be primarily a reaction product of a selected amine blend with an epoxy resin of the epichlorohydrin-bisphenol-A type containing suitable viscosity control agents, pigments, and accelerators.

- (3) The ratio of Component B:A shall be 1:1 by volume.

- (4) The material shall not contain asbestos.

b. Properties of the Mixed Material*

- (1) Pot Life -- 25 to 35 minutes.

- (2) Tack-free Time to Touch (20 mil thickness) -- 3 to 5 hours.

- (3) Initial Viscosity (Brookfield Viscometer Spindle #3; Speed 100) -- 1900-3700 cps.

- (4) Color -- Gray.

03740-2

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

c. Properties of the Cured Material*

- (1) Compressive Properties (ASTM D-695) at 28 days
Compressive Strength - 8,500 psi minimum;
Modulus of Elasticity 375,000 psi minimum.
- (2) Tensile Properties (ASTM D-638) at 14 days.

Tensile Strength - 4,000 psi minimum; Elongation
at Break -- 1.5-2.25%; Modulus of Elasticity --
275,000 psi minimum.
- (3) Flexural Properties (ASTM D-790) at 14 days.

Flexural Strength (Modulus of Rupture) -- 6,300 psi
minimum.
- (4) Shear Strength (ASTM D-732) at 14 days.

Shear Strength -- 5,000 psi minimum.
- (5) Water Absorption (ASTM D-570; Section 6.5) at 14
days.

Water Absorption - 1% maximum
- (6) Bond Strength (ASTM C-882) Hardened to Plastic

Bond Strength (14 days moist cure) -- 1500 psi
minimum.
- (7) Effective Shrinkage (ASTM C-883)

Effective Shrinkage - Passes Test

*All test data is based on material and curing
conditions of 73 + 2 deg. F., 50 +5% relative
humidity.

3. Approval Requirements

- a. The CONTRACTOR shall furnish notarized certification
that the material proposed for use meets all the above
requirements.

03740-3

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- b. Bonding agent shall be Sikastix 370, Sikadur Hi-Mod, as manufactured by Sika Corporation, Lyndhurst, New Jersey, or equal.

B. Repair Mortar

1. General

- a. Repair mortar shall be a 2-component, polymer-modified, cementitious, fast-setting, trowel grade, structural repair mortar suitable for use on horizontal, vertical and overhead surfaces on grade above, and below grade on concrete and mortar.

2. Material

- a. The polymer modified cementitious system shall consist of a factory pre-proportioned, 2-component system whose components conform to the following requirements:

- (1) Component A shall be a liquid polymer emulsion of an acrylic copolymer and shall have the following properties:

pH	4.5 - 6.5
Minimum film forming temperature	Approx. 68 deg. F.
Tear Strength	Approx. 990-1420
Elongation at Break	500 - 900%
Particle Size Range	Less than 0.1 micron

- (2) Component B shall be a blend of selected portland cements, specially graded aggregates, organic accelerator, and admixtures for controlling setting time, water reducers for workability and a corrosion inhibitor.

- (3) The component ratio A:B shall be 1:7.2 by weight. The system shall not contain chlorides, nitrates, added gypsum, added lime, or high alumina cements. The system shall be non-combustible, either before or after cure.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

b. Typical Properties of Mixed Components

- 1) Application Time (Working Time) - 15 minutes after combining components.
- 2) Finishing Time -- 20 to 60 minutes after combining components.
- 3) Color - Concrete Gray.

c. Typical Properties of Cured Material.

- 1) Abrasion Resistance -- 6 times that of controlled concrete.
- 2) Bond Strength (pull off method) - 100% concrete substrate failure.
- 3) Modulus of Elasticity -- 4,500,000 psi.
- 4) Surface Scaling (deicing salt solution freeze/thaw) -
- No deterioration after 120 cycles.
- 5) Compressive Strength (2 hours 50% RH) -- 150 psi minimum.
- 6) Compressive Strength (28 days 50% RH) -- 5,550 psi minimum.
- 7) Flexural Strength (28 days 50% RH) -- 1,300 psi minimum.
- 8) This system shall conform with ECA/USPHS Standards for surface contact with potable water.
- 9) This system shall not produce a vapor barrier.
- 10) This system shall be thoroughly compatible with concrete.
- 11) Stone may be added.
- 12) System may be finished with power trowel.

(d) Approval Requirements

- 1) The CONTRACTOR shall furnish notarized certification that the material proposed for use meets all the above requirements.
- 2) Repair mortar shall be SikaTop 122 as manufactured by Sika Corporation, Lyndhurst, New Jersey, or equal.

C. Crack Sealant

1. General

03740-5

- a. Crack sealant shall be a 2-component, solvent-free, moisture insensitive epoxy resin material suitable for crack grouting by injection or gravity feed, bolt grouting; as a binder for mortar, concrete or grout in thermally stable environments; and, as a concrete sealer.

2. Material

- a. The epoxy material shall conform to the following requirements:
 - 1) Component A - Component A shall be a modified epoxy resin of the epichlorohydrin-bisphenol-A type containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.
 - 2) Component B - Component B shall be primarily a reaction product of a selected amine blend with an epoxy resin of the epichlorohydrin-bisphenol-A type containing suitable viscosity control agents, pigments, and accelerators.
 - 3) The ratio of Component B:A shall be 1:2 by volume.
 - 4) The material shall not contain asbestos.
- b. Properties of the Mixed Material*
 - 1) Pot Life -- 20 to 30 minutes.
 - 2) Tack-free Time to Touch (3-5 mil thickness) -- 2 to 4 hours.
 - 3) Initial Viscosity (Brookfield Viscometer Spindle #2, Speed 100) -- 300 to 450 cps.
 - 4) Color -- Amber.
- c. Properties of the Cured Material*
 - 1) Compressive Properties (ASTM D-695) at 28 days
Compressive Strength - 10,500 psi minimum;
Modulus of Elasticity 300,000 psi minimum.
 - 2) Tensile Properties (ASTM D-638) at 14 days.

Tensile Strength - 5,500 psi minimum.

Elongation at Break -- 2-5%; Modulus of Elasticity
-- 60,000 psi minimum.

03740-6

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- 3) Flexural Properties (ASTM D-790) at 14 days.

Flexural Strength (Modulus of Rupture) -- 12,500 psi minimum.

Tangent Modulus of Elasticity in Bending -- 325,000 psi minimum.
- 4) Shear Strength (ASTM D-732) at 14 days.

Shear Strength -- 4,500 psi minimum.
- 5) Water Absorption (ASTM D-570) at 7 days.

Water Absorption - 1.5% maximum
- 6) Bond Strength (ASTM C-882)

Bond Strength (2 days dry + 12 days moist) -- 2,000 psi minimum.
- 7) Effective Shrinkage (ASTM C-883)
Effective Shrinkage - Passes Test
- 8) When tested following the procedure prescribed by the Environmental Control Administration of the U.S. Public Health Service, the cured material shall be in conformity with the Federal Regulation requiring water extractables of less than 0.5 mg/in.² of exposed surface for potable water containers.

* All test data is based on material and curing conditions of 73 + 2 deg. F., 50 +5% relative humidity.

3. Approval Requirements

- a. The CONTRACTOR shall furnish notarized certification that the material proposed for use meets all the above requirements.
- b. Crack sealant shall be Sikastix 350, Sikadur Hi-Mod LV, as manufactured by Sika Corp., Lyndhurst, New Jersey, or equal.

D. Epoxy Paste Adhesive

1. General

03740-7

- a. Epoxy paste adhesive shall be a 2-component, solvent-free, moisture insensitive epoxy resin material suitable for bolt grouting; as an adhesive for mating surfaces where the glue line is 1/8-inch or less; and to bond fresh, plastic concrete to clean, sound, hardened concrete.
- b. The material shall be classified as Type I, Grade 3, Class B and C and a Type II, Grade 3, Class B and C adhesive in conformity to ASTM C-881.

2. Material

- a. The epoxy material shall conform to the following requirements:

- 1) Component A - Component A shall be a modified epoxy resin of the epichlorohydrin-bisphenol-A type containing suitable viscosity control agents and pigments. It shall not contain butyl glycidyl ether.
- 2) Component B - Component B shall be primarily a reaction product of a selected amine blend with an epoxy resin of the epichlorohydrin-bisphenol-A type containing suitable viscosity control agents, pigments, and accelerators.
- 3) The ratio of Component B:A shall be 1:2 by volume.
- 4) The material shall not contain asbestos.

- b. Properties of the Mixed Material*

- 1) Pot Life -- 25 to 45 minutes.
- 2) Tack-free Time to Touch -- 2 to 3 hours.
- 3) Consistency (2 inch thick) -- Non-sag
- 4) Color -- Gray.

- c. Properties of the Cured Material*

- 1) Compressive Properties (ASTM D-695) at 28 days.

Compressive Strength - 10,000 psi minimum.

Modulus of Elasticity - 700,000 psi minimum.
- 2) Tensile Properties (ASTM D-638) at 14 days.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

Tensile Strength - 3,000 psi minimum.
Elongation at Break, % - 0.3 minimum.

Modulus of Elasticity - 630,000 psi minimum.

- 3) Flexural Properties (ASTM D-790) at 14 days.

Flexural Strength (Modulus of Rupture) - 3,700 psi minimum.

Tangent Modulus of Elasticity in Bending - 850,000 psi minimum.

- 4) Shear Strength (ASTM D-732) at 14 days.

Shear Strength - 2,800 psi minimum.

- 5) Water Absorption (ASTM D-570, Section 6.5) at 7 days.

Water Absorption, % - 1.0 maximum

- 6) When tested following the procedure prescribed by the Environmental Control Administration of the U.S. Public Health Services, the cured material shall be in conformity with the Federal Regulation requiring water extractables of less than 18 mg/in.2 of exposed surface for potable water containers.

* All test data is based on material and curing conditions of 73 + 2 deg. F.; 50 +5% relative humidity.

3. Approval Requirements

- a. The CONTRACTOR shall furnish notarized certification that the material proposed for use meets all the above requirements.
- b. Epoxy paste adhesive shall be Sikastix 390, Sikadur 31 Hi-Mod Gel, as manufactured by Sika Corporation, Lyndhurst, New Jersey, or equal.

- E. Non-shrink Grout
 - 1. Non-shrink grout for setting reinforcing bars in existing concrete shall be ready-to-use formulation, which when mixed with specific amounts of water, will provide a pourable cementitious mixture.

PART 3 EXECUTION

3.01 GENERAL

- A. Concrete removal, repairs and fabrication shall be as shown on the Project Drawings and/or specified herein.
- B. In all locations where new concrete is to be deposited against existing concrete, bonding compound shall be applied to the surfaces of the existing concrete prior to placement of new concrete.
- C. In all cases where the joint between new concrete and existing concrete will be exposed in the finished work, except as otherwise shown or specified, the limit of concrete removal shall be defined by a 1-1/2 inch deep saw cut on each exposed surface of the existing concrete.
- D. When the finished surface is not specified to be coated, the color of new concrete in the exposed surfaces shall match the color of the existing adjoining concrete as closely as possible.
- E. Where indicated or specified, existing concrete shall be removed to the depth indicated or required to expose sound concrete. The surface exposed shall be roughened by chipping, sandblasting, scarifying, or other appropriate means before applying bonding compounds, or repair material as specified.
- F. The ENGINEER may, from time to time, direct the CONTRACTOR to make repairs to existing concrete. These repairs shall be made as specified herein or by such other methods as may be appropriate.
- G. Reinforcing in existing concrete which is exposed as a result of removal of deteriorating concrete shall be wire brushed to remove all loose material and products of corrosion before proceeding with the repair.
- H. All commercial products specified in this Section shall be stored, mixed, and applied in strict accordance with the manufacturer's recommendations.

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

- I. In all cases where concrete is repaired in the vicinity of an expansion joint or isolation joint the repairs shall be made so as to preserve the isolation between components on either side of the joint.

3.02 SURFACE REPAIR AND PATCHING

- A. Remove fractured, loose, deteriorated and unsound concrete by saw cutting, bush hammering, chipping or other appropriate means. Restore area to original limits or as shown using repair mortar.

3.03 EXPANSION JOINT REPAIR

- A. Where indicated, existing pre-molded joint filler shall be removed and replaced with pre-molded joint filler as specified in this Division, Section 03300. Special joint sealant shall be installed as indicated in accordance with manufacturer's instructions.

3.04 CRACK REPAIR

- A. Cracks on vertical and horizontal surfaces shall be repaired by pressure injecting crack sealant through polyethylene valves sealed to surface with epoxy paste adhesive; where appropriate as determined by the ENGINEER, gravity feeding crack sealant into cracks on horizontal surfaces may be used.

END OF SECTION

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

SECTION 05540

CASTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

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

1.02 RELATED WORK NOT INCLUDED

- A. Concrete work is included in Division 3.
- B. Surface preparation and furnishing of castings is included in Division 9, Section 09900.

1.03 SUBMITTALS

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

PART 2 MATERIALS

2.01 GENERAL

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

2.02 MANHOLE CASTINGS

- A. Frames and Covers
 - 1. Sanitary sewer manhole castings shall consist of cast iron frames and 22-3/4 inch diameter covers, having a combined weight of not less than 350 pounds for out of traffic locations and 460 pounds for traffic locations. The frame shall be at least 7 inches high overall. Manhole covers must set neatly in the frame, with contact surfaces machined smooth for even bearing. The top of the cover shall be flush with the frame edge. The top of the cover shall sufficient

corrugations to prevent slipperiness and be marked in large letters "SANITARY SEWER." Covers shall have one pick hole only, about 1-1/2 inches wide and 3/4 inch deep with 3/8 inch square undercut at rear and 3/4 inch square undercut on sides. Covers on sanitary sewer manholes must not be perforated and shall be as manufactured by J.R. Hoe & Sons, Inc. or approved equal.

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

B. Steps

1. Cast iron or polypropylene plastic encapsulated steel manhole steps shall be patterns shown on the detail Drawings, and have corrugated treads. In case of need for non-protruding steps, shop drawings of special inset cast iron steps shall be reviewed by and be acceptable to the ENGINEER.
2. If a step constructed of another material is going to be considered, shop drawings will need to be submitted far enough in advance to allow consideration.
3. It is intended that the cast iron step be Neenah Foundry Company's R-1980-E, or equal, and the polypropylene plastic encapsulated steel step be M.A. Industries PS-1, or equal.

2.03 VALVE BOXES

A. Slip Type for Iron Body Gate Valves

1. Valve boxes for 2 inch through 10 inch valves shall be the 2 piece slip type, without screw, of sufficient length to allow for 36 inches of cover over the top of the pipe, Tyler 6855 series, model #562-A, or approved equal. The inner section shall have a minimum inside diameter of 5-1/4 inches with a hood type base that will cover the packing gland on a 2 inch through 10 inch valve (minimum of 8 inches inside diameter). The base of the top section shall be flanged at least 1-1/4 inches. The caps shall be circular with a corrugated surface and have pick holes in the periphery and be marked "Water", "Gas", "Sewer", or "Air" according to use. For

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

12 inch through 16 inch valves, the valve boxes shall be Opelika Foundry Company No. 4907 for cast iron or approved equal.

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

PART 3 EXECUTION

3.01 INSTALLATION

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

END OF SECTION

SECTION 15100

SMALL PLUMBING VALVES, PLUMBING SPECIALTIES AND SERVICE ACCESSORIES

PART 1 GENERAL

1.01 WORK INCLUDED

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

1.02 RELATED WORK

- A. Excavation, backfill and grading are included in Division 2
- B. Painting is included in Division 9, Section 09900.
- C. Electrical is included in Division 16.

1.03 SYSTEM DESCRIPTION

- A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of wastewater, sludge, water, air or chemicals, depending on the applications.

1.04 QUALITY ASSURANCE

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

1.05 REFERENCES

- A. Kentucky Basic Building Code.
- B. Kentucky State Plumbing Law, Regulations and Code

1.06 SUBMITTALS

- A. Copies of all materials required to establish compliance with these Specifications shall be submitted in accordance with the provisions of Division 1, Section 01300. Submittals shall include at least the following:
 - 1. Certified drawings showing all important details of construction and dimensions.
 - 2. Descriptive literature, bulletins, and/or catalogs of the equipment.
 - 3. The total weight of each item.
 - 4. A complete total bill of materials.
 - 5. A list of the manufacturer's recommended spare parts.

1.07 OPERATING INSTRUCTIONS

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

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. General
 - 1. All valves and appurtenances shall be of the size shown on the Drawings and as far as possible all equipment of the same type shall be from one manufacturer.
 - 2. All valves and appurtenances shall have the name of the maker, flow directional arrows, and the working pressure for which they

Perry County Sanitation District 1
KY 550 Airport Gardens Force Main
Job 829.25

are designed cast in raised letters on some appropriate part of the body.

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

2.02 VALVES

A. Plug Valves

Eccentric plug valves shall be used in shut-off applications for pump stations and where the valves are scheduled for infrequent use.

Eccentric plug valves 3 to 12 inches in diameter shall be rated for 175 psi working pressure. The body and cover shall be cast iron conforming to ASTM A126, Class B. Flange ends shall comply with ANSI B16.1, Class 125 standards. Mechanical joint ends shall comply with AWWA C11/ANSI 21.11. The entire seat surface shall be protected by a welded nickel seat of minimum 1/8" thickness. The plug shall be cast iron ASTM A126, Class B. The portion of the plug in the valve body cavity shall be coated with Buna-N rubber using an injection-mold process. Valve bonnet shall be full sealed and bolted to the body for ease of maintenance. The seal between the body and the bonnet shall be an O-ring. Stem packing shall be Buna-N multiple "V" ring stem packing seals, conforming to AWWA C504 and AWWA C507 standards. The packing seal shall be held in place with an adjustable gland follower. Shaft bearings shall be sintered 316 stainless steel for both the upper and lower trunnions. Bearings shall be permanently lubricated. 3" valves shall be quarter-turn and shall be supplied with a position indicator marked at 10 degree increments. Valves 4" and larger shall be equipped with a worm gear operator. Eccentric plug valves shall be Clow F-5412, F-5413 or approved equal.

B. Ball Valves

Ball valves shall be used in shut-off applications for residential grinder pump stations.

Ball valves shall be rated for a minimum of 225 psi working pressure. Valves 2 inch and smaller shall be PVC body construction, with EPDM seals, PTFE ball seats, double stem seals. Valves shall operate at full port when open, be a true union with solvent cement socket ends. The valves shall be manufactured by George Fischer, Hayward or approved equal.

C. Swing Check Valves

Check valves for cast iron and ductile iron pipelines shall be swing type and shall meet the material requirements of AWWA Specification C508-latest revision. The valves shall be cast iron body with reinforced 125 lb flanges conforming to ANSI B 16.1. Valves shall be single disc with Buna-N seat, stainless steel hinge pin, 150 psi working water pressure, non-shock, and hydrostatically tested at 300 psi. The valves shall be manufactured by Clow, Kennedy or approved equal.

1. When there is no flow through the line, the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the water-way.
2. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and adjustable weight.

D. Y Check Valves

Check valves for PVC pipelines shall be Y-type. The valves shall be PVC body with Viton seals, rated for 150 psi working water pressure. The disk guide shall be a PVC coil. The valves shall be manufactured by George Fischer, Hayward, or approved equal.

1. Valves shall be so constructed that the plunger assembly can be easily accessed for cleaning.
2. Valves shall be so constructed such full flow may be achieved. Minimal back pressure shall be necessary to seat the plunger.

E. Sewage Air/Vacuum Valves

1. Sewage Air/Vacuum Valves shall be furnished and installed at the locations shown on the PLANS. The valves shall be combination air valves for sewage as manufactured by A.R.I Flow Control Accessories sewage, Kfar Charuv, 12932 Israel
2. The valves shall be the size shown on the PLANS and be A.R.I Model D-025 or approved equal.
3. The valves shall be designed to allow entrapped air to escape from the pipeline when pumps are started and close water tight

when liquid enters the valves. When the sewage line is filled, the valves shall allow air to reenter when draining, to prevent vacuum or water column separation. The valves shall allow unrestricted venting or re-entry of air through it, during filling or draining of the force main. The complete valve shall withstand 230 psi test pressure.

4. Inlet and outlet blow off valves, and five (5) feet of hose for flushing shall be provided with each valve. Fittings shall be ¾" hose connections.
5. The body and cover of each valve assembly shall be constructed of reinforced nylon. The lower float, stem and hardware shall all be constructed of 316 stainless steel conforming to ASTM A240. The upper float shall be constructed of foamed polypropylene. The seal plug assembly, shall be constructed of reinforced nylon. O-rings shall be constructed of Buna-N rubber.

F. Air Release Valves

1. Air Release Valves shall be furnished and installed at the locations shown on the PLANS. The valves shall be automatic air valves for sewage as manufactured by A.R.I Flow Control Accessories sewage, Kfar Charuv, 12932 Israel
2. The valves shall be the size shown on the PLANS and be ARI Model S-020 or approved equal.
3. The valves shall be designed to allow entrapped air to escape from the pipeline when pumps are started and close water tight when liquid enters the valves. The complete valve shall withstand 350 psi test pressure.
4. Inlet and outlet blow off valves, and five (5) feet of hose for flushing shall be provided with each valve. Fittings shall be ¾" hose connections.
5. The body and cover of each valve assembly shall be constructed of stainless steel. The lower float, stem and hardware shall all be constructed of 316 stainless steel conforming to ASTM A240. The upper float shall be constructed of foamed polypropylene. The stopper shall be constructed of acetyl rubber. O-rings shall be constructed of Buna-N rubber.

G. Mud Valves

1. Mud valves shall be of the iron body, bronze mounted type with non-rising stems, flanged ends, extension stem with t-bar. The frame, yoke and gate shall be sturdily proportioned for strength and rigidity and be of cast iron conforming to ASTM specifications A126, Class B. the stem, stem nuts and seats shall be bronze. The stem shall be machined with accurately cut threads. The valves shall be Troy-Valve A-25600, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.
- B. After installation, all valves and appurtenances shall be tested at least one hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the ENGINEER.
- C. All materials shall be carefully inspected for defects in workmanship and materials; all debris and foreign material cleaned out of valve openings, etc.; all operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.
- D. Buried valves and valve boxes shall be set with the valve stem vertically aligned in the center of the box. Valves shall be set on firm foundation and supported by tamping selected excavated material under the sides of the valve. The valve box shall be supported during backfilling and maintained in vertical alignment with the top flush with finish grade.

3.02 SHOP PAINTING

- A. Interior surfaces of all valves, the exterior surfaces of buried valves, and miscellaneous piping appurtenances shall be given a shop finish of an

Perry County Sanitation District I
KY 550 Airport Gardens Force Main
Job 829.25

asphalt varnish conforming to Federal Specification TT-V51e for Varnish Asphalt.

- B. The exterior surface of various parts of the valves, operators, and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease or other foreign matter and thereafter one shop coat of an approved rust-inhibitive primer, such as Inertol Primer No. 621, shall be applied in accordance with the instructions of the paint manufacturer.
- C. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.
- D. Field painting is specified under Division 9, Section 09900.

3.03 INSPECTION AND TESTING

- A. The various pipelines in which the valves and appurtenances are to be installed are specified to be field tested. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.
- B. Various valves, or appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

END OF SECTION

Special Note for Expiration Of US Army Corp of Engineers Nationwide Permits

The Contractor is advised that the Nationwide Permit obtained from the US Army Corp of Engineers (USACE) by the Kentucky Transportation Cabinet (KYTC) for construction activities for which the USACE has jurisdictional authority expires March 18, 2007. The expiration of the Nationwide Permit is due to administrative changes in the permit process being implemented by USACE. The Contractor is advised that no work within any area of the project for which USACE has jurisdictional authority may begin until a new Nationwide Permit is issued by USACE. KYTC is working with USACE to have the Nationwide Permit for the project reissued as soon as possible. It is anticipated by KYTC that this process for reissuing the Nationwide Permit shall take no longer than 90 calendar days from the Letting Date. Please contact the Division of Construction Procurement to obtain information regarding the date the Nationwide Permit for the project will be reissued.

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00



Kentucky Transportation Cabinet

Highway District _10_

And

_____ (2), Construction

Kentucky Pollutant Discharge Elimination System

Permit KYR10

Best Management Practices (BMP) plan

Groundwater protection plan

For Highway Construction Activities

For

**[Road Reconstruction From Mile Marker 1.14 to
1.77 KY 550]**

Project: PCN ## - #####

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

Project information

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

1. Owner – Kentucky Transportation Cabinet, District _10_
2. Resident Engineer: (2)
3. Contractor name: (2)
Address: (2)

Phone number: (2)
Contact: (2)
Contractors agent responsible for compliance with the KPDES permit requirements (3):
4. Project Control Number (2)
5. Route (Address) Hazard, Ky 41701
6. Latitude/Longitude (project mid-point) 37/17/15, 83/12/36
7. County (project mid-point) PERRY
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

A. Site description:

1. Nature of Construction Activity
Construct two way left turn lane from mile post 1.14 to 1.77 on Ky 550
2. Order of major soil disturbing activities (2) and (3)
3. Projected volume of material to be moved
2500 cubic yards

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

4. Estimate of total project area (acres)
2.8 acres
5. Estimate of area to be disturbed (acres)
1.1 acres
6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.
7. Data describing existing soil condition
8. Data describing existing discharge water quality (if any)
9. Receiving water name
North Fork Kentucky River
10. TMDLs and Pollutants of Concern in Receiving Waters: (1 DEA)
11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.

12. Potential sources of pollutants:

The primary source of pollutants is solids that are mobilized during storm events. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes and trash/debris. (3)

B. Sediment and Erosion Control Measures:

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

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

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as "Do Not Disturb" until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP's shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA's as the work progresses. All DDA's will have adequate BMP's in place before being disturbed.

3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:
 - Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
 - At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.
 - Clearing and Grubbing – The following BMP's will be considered and used where appropriate.
 - Leaving areas undisturbed when possible.
 - Silt basins to provide silt volume for large areas.
 - Silt Traps Type A for small areas.

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

- Silt Traps Type C in front of existing and drop inlets which are to be saved
- Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
- Brush and/or other barriers to slow and/or divert runoff.
- Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
- Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
- Non-standard or innovative methods.
- Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
 - Silt Traps Type B in ditches and/or drainways as they are completed
 - Silt Traps Type C in front of pipes after they are placed
 - Channel Lining
 - Erosion Control Blanket
 - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
 - Non-standard or innovative methods
- Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
 - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
 - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
 - Additional Channel Lining and/or Erosion Control Blanket.
 - Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
 - Special BMP's such as Karst Policy
- Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably changes include:
 - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.
 - Permanent Seeding and Protection
 - Placing Sod
 - Planting trees and/or shrubs where they are included in the project

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

- BMP's including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are : (1)

C. Other Control Measures

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

2. Waste Materials

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

3. Hazardous Waste

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

4. Spill Prevention

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

- **Good Housekeeping:**

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

KyTC BMP Plan for Project PCN ### - #####
SYP Item # 10-991.00

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

➤ **Hazardous Products:**

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

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

The following product-specific practices will be followed onsite:

➤ **Petroleum Products:**

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

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

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

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

➤ **Fertilizers:**

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

➤ **Paints:**

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

➤ **Concrete Truck Washout:**

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

➤ **Spill Control Practices**

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

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

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

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

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials. (1)

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.
- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.
 - Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance.

F. Inspections

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

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have received KyTC Grade Level II training or other qualification as prescribed by the cabinet that includes instruction concerning sediment and erosion control.
- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 70 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

G. Non – Storm Water discharges

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

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

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

- Uncontaminated groundwater and rain water (from dewatering during excavation).

All non-storm water discharges will be directed to the sediment basin or to a filter fence enclosure in a flat vegetated infiltration area or be filtered via another approved commercial product.

H. Groundwater Protection Plan (3)

This plan serves as the groundwater protection plan as required by 401 KAR 5:037.

- Contractors statement: (3)

The following activities, as enumerated by 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan, will or may be may be conducted as part of this construction project:

_____ 2. (e) land treatment or land disposal of a pollutant;

_____ 2. (f) Storing, ..., or related handling of hazardous waste, solid waste or special waste, ..., in tanks, drums, or other containers, or in piles, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);

_____ 2. (g) Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

_____ 2. (j) Storing or related handling of road oils, dust suppressants,, at a central location;

_____ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

_____ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this does not include bore holes for the purpose of explosive demolition);

Or, check the following only if there are no qualifying activities

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

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

The contractor is responsible for the preparation of a plan that addresses the
401 KAR 5:037 Section 3. (3) Elements of site specific groundwater protection
plan:

- (a) General information about this project is covered in the Project information;
- (b) Activities that require a groundwater protection plan have been identified above;
- (c) Practices that will protect groundwater from pollution are addressed in section C. Other control measures.
- (d) Implementation schedule – all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity;
- (e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provide to the resident engineer.
- (f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections
- (g) Certification (see signature page.)

KyTC BMP Plan for Project PCN ## - #####
SYP Item # 10-991.00

Contractor and Resident Engineer Plan certification

The contractor that is responsible for implementing this BMP plan is identified in the Project Information section of this plan.

The following certification applies to all parties that are signatory to this BMP plan:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, this plan complies with the requirements of 401 KAR 5:037. By this certification, the undersigned state that the individuals signing the plan have reviewed the terms of the plan and will implement its provisions as they pertain to ground water protection.

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

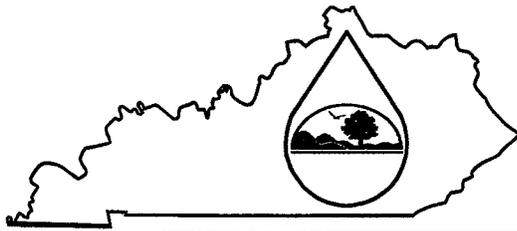
Signed _____ title _____, _____
Typed or printed name² signature

(3) Signed _____ title _____, _____
Typed or printed name¹ signature

1. Contractors Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

2. KyTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601 Reference the Project Control Number (PCN) and KPDES number when one has been issued.

KPDES FORM NOI-SW



**Kentucky Pollutant Discharge Elimination System
(KPDES)
Notice of Intent (NOI)
for Storm Water Discharges
Associated with Industrial Activity Under the
KPDES General Permit**

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

I. Facility Operator Information

Name:	KYTC District 10	Phone:	6066668841
Address:	PO Box 621	Status of Owner/Operator:	S
City, State, Zip Code:	Jackson, KY 41339		

II. Facility/Site Location Information

Name:	KYTC PCN ##### SYP Item # 10-991.0		
Address:	KY 550		
City, State, Zip Code:	Hazard, Ky 41701		
County:	Perry		
Site Latitude: (degrees/minutes/seconds)	37/17/15	Site Longitude: (degrees/minutes/seconds)	83/12/36

III. Site Activity Information

MS4 Operator Name:			
Receiving Water Body:	North Fork KY River		
Are there existing quantitative data?	Yes <input type="checkbox"/> If Yes, submit with this form. No <input checked="" type="checkbox"/>		
SIC or Designated Activity Code Primary	1611	2nd	3rd
4th			
If this facility is a member of a Group Application, enter Group Application Number:			
If you have other existing KPDES Permits, enter Permit Numbers:			

IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:		Completion Date:	
Estimated Area to be disturbed (in acres):	1.1		
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed or Typed Name:	Linda Justice, Chief District Engineer		
Signature:		Date:	

**Kentucky Pollutant Discharge Elimination System (KPDES)
Instructions**

**Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity
To Be Covered Under The KPDES General Permit**

WHO MUST FILE A NOTICE OF INTENT (NOI) FORM

Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the **Storm Water Contact, Industrial Section, Kentucky Division of Water at (502) 564-3410.**

WHERE TO FILE NOI FORM

NOIs must be sent to the following address:

**Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
Frankfort Office Park
14 Reilly Road
Frankfort, KY 40601**

COMPLETING THE FORM

Type or print legibly in the appropriate areas only. If you have any questions regarding the completion of this form call the **Storm Water Contact, Industrial Section, at (502) 564-3410.**

SECTION I - FACILITY OPERATOR INFORMATION

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility.

F = Federal M = Public (other than federal or state)
S = State P = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION

Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code.

SECTION III - SITE ACTIVITY INFORMATION

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water.

Indicate whether or not the owner or operator of the facility has existing quantitative data that represent the characteristics and concentration of pollutants in storm water discharges. If data is available submit with this form.

List, in descending order of significance, up to four 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or site identified in Section II of this application.

If the facility listed in Section II has participated in Part 1 of an approved storm water group application and a group number has been assigned, enter the group application number in the space provided.

If there are other KPDES permits presently issued for the facility or site listed in Section II, list the permit numbers.

SECTION IV - ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION ACTIVITIES ONLY

Construction activities must complete Section IV in addition of Sections I through III. Only construction activities need to complete Section IV.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION V - CERTIFICATION

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.

08 FEB 2007

KENTUCKY TRANSPORTATION CABINET
COMMUNICATING ALL PROMISES (CAP)

<u>Item No.</u>			<u>Project Mgr.</u>	CHUCK ALLEN
<u>CAP #</u>	<u>Date of Promise</u>	<u>Promise made to:</u>	<u>County</u>	<u>Route</u>
1		Chuck Allen	PERRY	KY-550
<u>CAP Description</u>				
NO CAP				
2	08-FEB-07	Corbett Caudill		
<u>CAP Description</u>				
RT Sta. 22+50.00 to 25+50.00				
THE ENTRANCE TO SMITTY'S FRUIT MARKET (PARCEL 10) RIGHT STATION 22+50 TO 25+50 IS NOT TO BE DISTURBED UNTIL AFTER MAY 31, 2007.				

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition**
(Effective with the January 19, 2007 Letting)

<p>SUBSECTION: 105.07 COOPERATION WITH UTILITIES. REVISION: In the last paragraph, replace “KRS 367 Sections 1 through 10” with “KRS 367.4901 through 367.4917”</p>
<p>SUBSECTION: 108.01 SUBCONTRACTING OF CONTRACT. REVISION: Replace the second and third sentence of the first paragraph with the following:</p> <p>When the Engineer gives such consent, the Engineer will allow the Contractor to subcontract a portion, but the Contractor must perform with his own organization work amounting to no less than 30 percent of the total Contract cost. The Department will not allow any subcontractor to exceed the percentage to be performed by the Contractor and will require the Contractor to maintain a supervisory role over the entire project.</p>
<p>SUBSECTION: 109.07 PRICE ADJUSTMENT. REVISION: Replace the section with the following:</p> <p>109.07 PRICE ADJUSTMENTS. Due to the fluctuating costs of petroleum products, the Department will adjust the compensation of specified liquid asphalt items and diesel fuel in contracts when contract quantity thresholds are met.</p> <p>109.07.01 Liquid Asphalt. The Department will compare the Kentucky Average Price Index (KAPI), for the month that the Contract is let, to the index for the month that the Contractor places the material on the project to determine the percent change. When the original contract quantity for asphalt items is equal to or greater than 3,000 tons and when the average price of the liquid asphalt products increases or decreases more than 5 percent, the Department will adjust the Contractor’s compensation. The KAPI is calculated monthly using the average price, per ton at the terminal, from the active suppliers of liquid asphalt.</p> <p><u>Adjustable Contract Items:</u></p> <ul style="list-style-type: none"> • Asphalt Curing Seal • Asphalt Material for Prime • Asphalt Base, All Classes • Asphalt Binder • Asphalt Surface, All Classes • Sand Asphalt Surface • Asphalt Open-Graded Surface • Asphalt Seal Coat • Asphalt Mixture for Leveling and Wedging • Drainage Blanket - Type II - Asphalt <p>The Department will determine the price adjustment using the following formulas:</p> <p><u>When PC is greater than PL</u> Asphalt Price Adjustment = $(Q \times A)/100 \times PL \times [(PC-PL)/PL - 0.05]$</p> <p><u>When PC is less than PL</u> Asphalt Price Adjustment = $(Q \times A)/100 \times PL \times [(PC-PL)/PL + 0.05]$</p> <p>Where: Q = Tons of material or mixture placed each month. A = Percent of material or mixture that is asphalt. PL = KAPI for the month that the Contract is let. PC = KAPI for the month that the Contractor places the material or mixture.</p> <p>The job-mix formula for asphalt base, binder, and surface mixtures determines “A”, which is the percent of asphalt. For recycled mixtures, the Department will determine the adjustment for the new asphalt cement only. The Department will consider materials for prime and seal as 100 percent asphalt.</p>

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition**
(Effective with the January 19, 2007 Letting)

Revision
Continued

109.07.02 Fuel. The Department will adjust the Contractor's compensation when the average price of diesel fuel increases or decreases more than 5 percent and the original Contract quantity for the item on which the fuel is consumed is equal to or greater than the threshold quantities listed in the following table.

<u>Item</u>	<u>Threshold Quantity</u>	<u>Fuel/Work</u>
Roadway Excavation	10,000 cubic yards	0.25
Embankment-in-Place	10,000 cubic yards	0.25
Borrow Excavation	10,000 cubic yards	0.25
DGA Base or Crushed Stone Base	5,000 tons	0.52
Stabilized Aggregate Base	5,000 tons	0.52
Drainage Blanket, Cement Treated or Untreated	5,000 tons	0.52
Drainage Blanket, Asphalt Treated	5,000 tons	3.00
Crushed Sandstone Base (Cement Treated)	5,000 tons	0.52
Hot-Mixed Asphalt Mixtures for Pavements or Shoulders	3,000 tons ⁽¹⁾	3.00
PCC Pavement, Base, or Shoulders	2,000 square yards ⁽²⁾	0.14

⁽¹⁾Total of all hot mixed asphalt Contract items.

⁽²⁾Total of all JPC pavement, JPC shoulder, and PCC base, Contract items.

The Department will determine the price adjustment using the following formulas:

When PC is greater than PL

$$\text{Fuel Price Adjustment} = Q \times F \times PL \times [(PC-PL)/PL - 0.05]$$

When PC is less than PL

$$\text{Fuel Price Adjustment} = Q \times F \times PL \times [(PC-PL)/PL + 0.05]$$

Where:

Q = Quantity for applicable item placed or performed that month.

F = The fuel to work unit ratio for each applicable item.

PL = Average reseller price of diesel fuel, excluding taxes, discounts, and superfund line items, in the Kentucky region for the month that the Contract is let.

PC = Average reseller price of diesel fuel, excluding taxes, discounts, and superfund line items, in the Kentucky region for the month that the Contractor uses the fuel on the project.

109.07.03 Payments and Deductions. When thresholds are met, the Department will adjust the Contractor's compensation for each eligible pay item, paid or deducted, monthly.

If later price decreases indicate that the Department made an overpayment, the Department will withhold the overpayment from succeeding pay estimates on the project, or the Contractor shall immediately refund the over payment to the Department.

When the Contractor places materials during any month after the month that the Contract time (including all approved time extensions) expires, the Department will use the average price for the month that the Contractor places the material or the average price for the last month of the Contract time; whichever is least.

The Department will not grant a time extension for any overrun in the Contract amount due to payments made according to this section. The Department will not make any additional compensation due to adjustments made according to this section.

The Department will adjust the Contractor's compensation on the following months pay estimate and on the final pay estimate. The Department will make the final adjustment of the Contractor's compensation on the final estimate for the project.

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition
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<p>SUBSECTION: 110.01 MOBILIZATION. REVISION: Replace the third paragraph with the following:</p>	<p>Do not bid an amount for Mobilization that exceeds 5 percent of the sum of the total amounts bid for all items in the Bid Proposal, excluding Mobilization, Demobilization, and contingent amounts established for adjustments and incentives. The Department will automatically adjust any bids in excess of this amount to 5 percent for bid comparisons. The Department will base the award on the maximum allowable bid of 5 percent. If any errors in unit bid prices for other Contract items in a Contractor's Bid Proposal are discovered after bid opening and such errors reduce the total amount bid for all other items, excluding Mobilization, Demobilization, and contingent amounts established for adjustments and incentives, so that the percent bid for Mobilization is larger than 5 percent, the Department will adjust the amount bid for Mobilization to 5 percent of the sum of the corrected total bid amounts.</p>
<p>SUBSECTION: 110.02 DEMOBILIZATION. REVISION: Replace the first sentence of the third paragraph with the following:</p>	<p>Do not bid an amount for Demobilization that is less than 1.5 percent of the sum of the total amounts bid for all other items in the Bid Proposal, excluding Mobilization, Demobilization, and contingent amounts established for adjustments and incentives.</p>
<p>SUBSECTION: 206.03.03 Compaction. REVISION: Replace "KM 64-412" with "KM 64-002"</p>	
<p>SUBSECTION: 212.03.03 Permanent Seeding and Protection. PART: B) Procedures for Permanent Seeding. REVISION: Add the following after the fourth sentence:</p>	<p>Unless the Engineer directs otherwise, track all slopes 3:1 or greater. Ensure that tracking is performed up and down and not across.</p>
<p>SUBSECTION: 213.03.01 Best Management Practices (BMP). REVISION: Replace the third sentence of the first paragraph with the following:</p>	<p>Ensure that the BMP provides storage for 3,600 cubic feet of water per surface acre disturbed.</p>
<p>SUBSECTION: 213.03.03 Inspection and Maintenance REVISION: Replace both "0.1-inch" references with "0.5-inch".</p>	
<p>SUBSECTION: 213.03.05 Temporary Control Measures. PART: B) Silt Checks. REVISION: B) Silt Checks. Use one of the following types:</p>	<ol style="list-style-type: none"> 1) Silt Check Type II - Crushed stone such as cyclopean stone riprap, quarry run stone, or other size material approved by the Engineer, dumped in place and shaped to the configuration required. 2) Silt Check Type III - Blasted or broken rock dumped in place and shaped to the configuration required. <p>Remove and properly dispose of sediment deposited at silt checks as necessary. When no longer needed, remove the silt checks and dispose of surplus materials as excavated materials according to Section 204. Seed and protect the entire area disturbed, as directed. Do not leave silt checks in place after completion of the project unless allowed by the Engineer or specified in the Plans.</p>
<p>SUBSECTION: 213.03.05 Temporary Control Measures. PART: G) Temporary Mulch. REVISION: Replace the last sentence with the following:</p>	<p>Place temporary mulch to an approximate 2-inch loose depth (2 tons per acre) and apply tackifier.</p>
<p>SUBSECTION: 213.04.15 Temporary Silt Ditch. REVISION: Replace with the following:</p>	<p>The Department will measure the quantity in linear feet.</p>

**Supplemental Specifications to The Standard Specifications
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SUBSECTION:	213.04 MEASUREMENT.
REVISION:	Add the following Subsection: 213.04.24 Clean Temporary Silt Ditch. The Department will measure the quantity in linear feet along the ditch line.
SUBSECTION:	213.05 PAYMENT.
REVISION:	Add the following lines: 20594 Temporary Silt Ditch Linear Foot 20601 Clean Temporary Silt Ditch Linear Foot
SUBSECTION:	303.03.01 Mixture
PART:	C) Cement Treated Mixture.
REVISION:	Delete the "For asphalt pavements" from the second paragraph.
SUBSECTION:	303.03.01 Mixture
PART:	C) Cement Treated Mixture.
REVISION:	Delete requirement "2".
SUBSECTION:	402.03.02 Acceptance.
PART:	D) Testing Responsibilities.
NUMBER:	4) Density.
REVISION:	Replace the first sentence of the third paragraph with the following: For surface mixtures placed on driving lanes and ramps, furnish 2 cores per subplot to the nearest laboratory facility (Contractor or Department lab) for density determination by the Engineer.
SUBSECTION:	402.03.02 Acceptance.
PART:	H) Unsatisfactory Work.
NUMBER:	1) Based on Lab Data.
REVISION:	Replace the "AASHTO MP2" references in the second paragraph with "AASHTO M 323".
SUBSECTION:	402.04 MEASUREMENT.
REVISION:	Replace the last sentence with the following: The Department will not measure construction of rolled rumble strips or pavement wedge texturing for payment and will consider them incidental to the asphalt mixture.
SUBSECTION:	402.04.01 Weight.
REVISION:	Replace first sentence of the second paragraph with the following: The Department will determine the bulk, oven-dry specific gravity for the fine and coarse aggregates according to KM64-605 and AASHTO T 85, respectively.
SUBSECTION:	402.04.02 Thickness on New Construction.
REVISION:	Delete the third paragraph and add the following at the end of the subsection: The Department will not measure initial thickness check coring or coring of corrective work for payment and will consider it incidental to the asphalt mixture.

**Supplemental Specifications to The Standard Specifications
 for Road and Bridge Construction, 2004 Edition
 (Effective with the January 19, 2007 Letting)**

<p>SUBSECTION: 402.05.02 PARTS: Lot Pay Adjustment Schedule, Compaction Option A, Base and Binder Mixtures Lot Pay Adjustment Schedule, Compaction Option A, Surface Mixtures Lot Pay Adjustment Schedule, Compaction Option B Mixtures REVISION: Replace the VMA table with the following:</p>	<table border="1"> <thead> <tr> <th colspan="2">VMA</th> </tr> <tr> <th>Pay Value</th> <th>Deviation From Minimum</th> </tr> </thead> <tbody> <tr> <td align="center">1.00</td> <td align="center">≤ 0.5 below min. VMA</td> </tr> <tr> <td align="center">0.95</td> <td align="center">0.6-1.0 below min.</td> </tr> <tr> <td align="center">0.90⁽²⁾</td> <td align="center">1.1-1.5 below min.</td> </tr> <tr> <td align="center">⁽¹⁾/₍₂₎</td> <td align="center">> 1.5 below min.</td> </tr> </tbody> </table>	VMA		Pay Value	Deviation From Minimum	1.00	≤ 0.5 below min. VMA	0.95	0.6-1.0 below min.	0.90 ⁽²⁾	1.1-1.5 below min.	⁽¹⁾ / ₍₂₎	> 1.5 below min.
VMA													
Pay Value	Deviation From Minimum												
1.00	≤ 0.5 below min. VMA												
0.95	0.6-1.0 below min.												
0.90 ⁽²⁾	1.1-1.5 below min.												
⁽¹⁾ / ₍₂₎	> 1.5 below min.												
<p>SUBSECTION: 403.03.03 Preparation of Mixture. PART: A) Mixture Composition. REVISION: Replace the “AASHTO MP2” reference in the first paragraph with “AASHTO M 323”.</p> <p>From the aggregate requirements list, delete 3) Type C.</p>													
<p>SUBSECTION: 403.03.03 Preparation of Mixture. PART: C) Mix Design Criteria. REVISION: Replace the “AASHTO MP2” references with “AASHTO M 323”.</p> <p>Replace the “AASHTO PP28” references in the second paragraph with “AASHTO R 35”.</p>													
<p>SUBSECTION: 403.03.03 Preparation of Mixture. PART: C) Mix Design Criteria. NUMBER 1) Preliminary Mix Design. REVISION: Add the following footnote to the table and associate it with the ESAL’s field “<0.3”:</p> <p>* For CL1 ASPH SURF 0.38D PG64-22 only.</p>													
<p>SUBSECTION: 403.03.06 Thickness Tolerances. PART: B) New Construction. REVISION: Replace the first paragraph with the following:</p> <p>Under the Engineer’s supervision, perform coring for thickness checks according to KM 64-420, as soon as practical after completion of all, or a major portion, of the asphalt base. The Engineer will measure the cores. Fill all core holes either with compacted asphalt mixture or non-shrink grout. Complete all remedial overlay work before placing the final course.</p>													

**Supplemental Specifications to The Standard Specifications
 for Road and Bridge Construction, 2004 Edition
 (Effective with the January 19, 2007 Letting)**

SUBSECTION: 403.03.08 Rumble Strips.
REVISION: Replace with the following:

403.03.08 Shoulder Rumble Strips and Pavement Wedge Texturing.

A) Shoulder Rumble Strips.

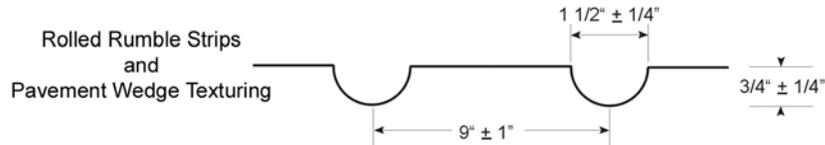
1) Interstates and Parkways. Construct sawed rumble strips on all mainline shoulders to the dimensions shown below. Do not place rumble strips on ramps.

2) Other Roads. Construct rolled rumble strips on shoulders of facilities with posted speed limits greater than 45 MPH. Unless specified in the plans or directed by the Engineer, do not construct rumble strips on facilities with posted speed limits of 45 MPH or less.

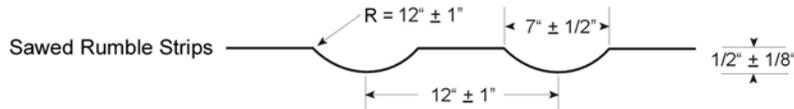
Construct rolled rumble strips on mainline shoulders to the dimensions shown below. On shoulders less than 3 feet wide, shorten the width and distance of the strips as the Engineer directs. Time the rolling operation so indentations are at the specified size and depth without causing unacceptable displacement of the asphalt mat. Correct unacceptable rolled rumble strips by sawing.

B) Pavement Wedge Texturing. Perform texturing on all pavement wedges constructed monolithically with the mainline or constructed using a surface mixture. When furnishing Asphalt Mixture for Pavement Wedge, binder, or a base mixture for the wedge, the Department will not require texturing.

Texture to the dimensions shown below. On wedges less than 3 feet, shorten the length and distance of the texturing as the Engineer directs. Time the rolling operation so indentations are at the specified size and depth without causing unacceptable displacement of the asphalt mat.



Place one foot out from the mainline pavement and to a width of 2 feet.



Place one foot out from the mainline pavement and to a width of 16 inches.

SUBSECTION: 403.04.03 Asphalt Mixtures.
REVISION: Replace the second sentence with the following:

The Department will not measure rolled rumble strips or pavement wedge texturing for payment and will consider them incidental to this bid item.

SUBSECTION: 403.04.07 Sawed Rumble Strips.
REVISION: Add the following subsection:

403.04.07 Sawed Rumble Strips. The Department will measure the quantity in linear feet. When rolled in rumble strips are specified, the Department will not measure sawed rumble strips for payment and will consider them incidental to the asphalt mixture.

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition**
(Effective with the January 19, 2007 Letting)

SUBSECTION:	403.05 PAYMENT						
REVISION:	Add the following bid item:						
	<table border="0"> <thead> <tr> <th align="left"><u>Code</u></th> <th align="left"><u>Pay Item</u></th> <th align="left"><u>Pay Unit</u></th> </tr> </thead> <tbody> <tr> <td>20362</td> <td>Shoulder Rumble Strips – Sawed</td> <td>Linear Foot</td> </tr> </tbody> </table>	<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>	20362	Shoulder Rumble Strips – Sawed	Linear Foot
<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>					
20362	Shoulder Rumble Strips – Sawed	Linear Foot					
SUBSECTION:	501.03.20 Opening to Public Traffic.						
REVISION:	Delete the last sentence of the first paragraph.						
SUBSECTION:	501.03.21 Tolerance in Pavement Thickness.						
REVISION:	Add the following: Core the pavement as the Engineer directs.						
SUBSECTION:	501.04.06 Thickness.						
REVISION:	Add the following: The Department will not measure coring for payment and will consider it incidental to the concrete pay items.						
SUBSECTION:	502.03 CONSTRUCTION.						
PART:	C) Curing and Protecting Pavement.						
NUMBER:	3)						
REVISION:	Replace the last sentence with the following: The Department will allow permanent removal of the cover when the concrete attains the required opening strength of 3,000 psi.						
SUBSECTION:	502.03 CONSTRUCTION.						
PART:	D) Strength Testing and Opening to Traffic.						
NUMBER:	2) Testing.						
REVISION:	Replace the second paragraph with the following: When the average compressive strength is 3,000 psi, the Department will allow the pavement to be opened to traffic and will test the remaining sets of cylinders at the required age. When the average compressive strength is less than 3,000 psi at the required age, do not open the pavement to traffic until the pavement has been in place for 7 days. The Engineer may accept the pavement based on additional testing.						
SUBSECTION:	503.03.09 Ride Quality.						
REVISION:	Replace parts 5) and 6) with the following: 5) Perform corrective work to achieve the required IRI by regrinding the entire width of the traffic lane at areas having a high IRI. The Engineer may exclude pavement areas where grinding alone will not correct deficiency. 6) The Department will create a strip chart when the test results show that the IRI is greater than 60 or upon request for lower IRI values.						
SUBSECTION:	601.03.02 Concrete Producer Responsibilities.						
REVISION:	Replace the first sentence with the following: Use a concrete producer from the List of Approved Materials when the quantity of concrete delivered to the project in a plastic condition is 250 cubic yards or more. Ensure that the concrete producer complies with the following requirements:						

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition
(Effective with the January 19, 2007 Letting)**

<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: C) Quality Control. REVISION: Replace the first paragraph with the following:</p>	<p>Take full responsibility for the batch weight calculations and quality control of concrete mixtures at the plant. Ensure that the Level II concrete technician is present when work is in progress and is responsible for inspecting trucks, batch weight calculations, monitoring batching, making mixture adjustments, reviewing the slump, air content and unit weight tests, and monitoring the concrete temperature, all to provide concrete to the project conforming to specifications. A Level I concrete technician is responsible for testing production material for slump, entrained air, unit weight and temperature of the mixture. Ensure the technician performs all sampling and testing according to the appropriate Kentucky Methods.</p> <p>Delete the third paragraph.</p>
<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: F) Records. REVISION: Retain all concrete technician records, test results and batch tickets pertaining to concrete produced for a Department project for at least 3 years after formal acceptance of the project. Make all records available to the Engineer and the Contractor on the project for review upon request.</p>	
<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: G) Mix Designs. REVISION: Replace the last sentence of the first paragraph with the following:</p>	<p>Before producing any concrete for the project, submit a proposed mixture design to the Engineer and obtain the District Materials engineer's or the Central Office Material's approval.</p>
<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: G) Mix Designs. NUMBER: 1) New Mixture Designs. REVISION: Replace the first sentence with the following:</p>	<p>Base the proposed mix design on standard Department methods unless the District Materials Engineer, or Central Office Materials approves otherwise.</p>
<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: G) Mix Designs. NUMBER: 1) Changes in Approved Mix Designs. REVISION: Replace the second sentence with the following:</p>	<p>The District Materials Engineer or Central Office Materials will provide an average value of the specific gravity aggregate absorption.</p>
<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: G) Mix Designs. NUMBER: 3) Changes in Approved Mix Designs. LETTER: g) REVISION: Replace the fourth and fifth sentence with the following:</p>	<p>Central Office Materials will observe all phases of the trial batches. Have the producer submit a report containing mix proportions and test results for slump, air content, water/cement ratio, unit weight, and compressive strength for each trial batch to the Engineer for Central Office Materials review and approval.</p>
<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: G) Mix Designs. NUMBER: 2) Approval. REVISION: Replace the first sentence with the following:</p>	<p>The District Materials Engineer or Central Office Materials will base approval of the mixture design on the following criteria:</p>

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition**
(Effective with the January 19, 2007 Letting)

<p>SUBSECTION: 601.03.02 Concrete Producer Responsibilities. PART: G) Mix Designs. NUMBER: 3) Changes in Approved Mix Designs. REVISION: Replace the first sentence with the following:</p>	<p>Do not change the source of supply of the mixture ingredients without the District Materials Engineer's or Central Office Materials written permission.</p> <p>Replace the third sentence with the following:</p> <p>Upon the District Materials Engineer's or Central Office Materials written approval, the Department will allow the use of aggregate from the new source.</p>
<p>SUBSECTION: 601.03.03 Proportioning and Requirements. PART: A) Concrete. TABLE: INGREDIENT PROPORTIONS AND REQUIREMENTS FOR VARIOUS CLASSES OF CONCRETE REVISION: Under Class of Concrete replace "A"AA⁽⁹⁾" with "AAA⁽⁸⁾"</p>	
<p>SUBSECTION: 601.03.03 Proportioning and Requirements. PART: A) Concrete. FOOTNOTE: (6) REVISION: Add the following after the first sentence of the first paragraph:</p>	<p>For products with voids, the slump may be increased to 7 inches.</p> <p>Replace the "0.3" requirement for Spring and Fall mix designs with "0.37".</p>
<p>SUBSECTION: 601.03.03 Proportioning and Requirements. PART: A) Concrete. FOOTNOTE: (7) REVISION: Replace with the following:</p>	<p>The precast fabricator may increase the slump of Class A concrete to a maximum of 7 inches provided the fabricator uses a high range water reducer (Type F and G) and maximum water/cement ratio of 0.46.</p>
<p>SUBSECTION: 601.03.03 Proportioning and Requirements. PART: E) Measuring. NUMBER: 3) Water. REVISION: Delete the last sentence of the second paragraph.</p>	
<p>SUBSECTION: 601.03.03 Proportioning and Requirements. PART: E) Measuring. NUMBER: 4) Measuring Admixtures. REVISION: Replace with the following:</p>	<p>4) Measuring Admixtures. Introduce liquid admixtures into the concrete batch along with, or as part of, the mixing water. Keep air-entraining admixtures completely separate from all other admixtures until introduction into the batch. Maintain and equip dispensing equipment to ensure no chlorides are introduced into any Department mix.</p> <p>Use approved dispensing equipment with a meter, gauge, or scale that can accurately be pre-set for the needed amount of admixture and can consistently deliver quantities of admixture to successive batches at any setting with satisfactory accuracy. The dispensing equipment must be visible to the batch operator if the actual dispensed amounts are not recorded on the computer batch ticket. Ensure admixture dispensers are inspected, calibrated and certified every 6 months.</p> <p>The Department may allow admixtures to be added, to the truck, at the project site provided the Engineer's approval is obtained first.</p>

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition
(Effective with the January 19, 2007 Letting)**

SUBSECTION:	601.03.04 Classes and Primary Uses.
REVISION:	Add the following part: R) Dry Cast. Precast units.
SUBSECTION:	601.03.05 Admixtures.
REVISION:	Replace the last sentence of the fourth paragraph with the following: Store admixtures where the liquid temperatures can be maintained between 32 and 110 °F.
SUBSECTION:	601.03.09 Placing Concrete.
PART:	D) Weather Limitations and Protection.
REVISION:	Delete the last sentence of paragraph two.
SUBSECTION:	605.03 CONSTRUCTION.
REVISION:	Insert the following sentence after the first sentence: Ensure all non-composite box beam concrete contains an approved corrosion inhibitor from the List of Approved Materials.
SUBSECTION:	605.03.03 Casting.
REVISION:	Delete the first sentence in the first paragraph. Add the following after the first sentence of the third paragraph: Do not vibrate Self-Consolidating Concrete (SCC).
SUBSECTION:	605.03.04 Tack welding.
REVISION:	Replace the first sentence with the following: When tack welding steel reinforcement, use ASTM A 706 steel and conform to the following conditions.
SUBSECTION:	605.03.04 Tack Welding.
NUMBER:	3)
REVISION:	Replace the first sentence with the following: Tack weld only at intersections of bars except do not tack weld in any bend or within 2 bar diameters of a bend.
SUBSECTION:	605.03.04 Tack Welding.
NUMBER:	5)
REVISION:	Replace the last sentence with the following: Each sample must meet the minimum requirement for elongation, ductility, tensile and yield strength of the bar stock.
SUBSECTION:	605.03.04 Tack Welding.
NUMBER:	6)
REVISION:	Delete the last sentence.
SUBSECTION:	605.03.04 Tack Welding.
REVISION:	Change footnote “(4) (d)” to “(5)”
SUBSECTION:	605.03.07 Removal of Forms and Surface Finish.
REVISION:	Add the following sentence before the last sentence of the paragraph: Finish dry cast products according to the Precast/Prestressed Concrete Manual.
SUBSECTION:	611.02.01 Concrete.
REVISION:	Replace with the following: Conform to Subsections 601.02 and 601.03 and the Precast/Prestress Concrete Manual.
SUBSECTION:	611.03.02 Precast Unit Construction.
REVISION:	Replace “AASHTO C 1433” with “ASTM C 1433”

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition**
(Effective with the January 19, 2007 Letting)

<p>SUBSECTION: 611.03.02 Precast Unit Construction. NUMBER: 2) REVISION: Replace with the paragraph with the following:</p> <p>Mark all box culverts sections with the following information on the inside top of each section with letters no less than 2 inches high:</p> <ul style="list-style-type: none">a) Span, rise, maximum and minimum design earth cover, and KY Table 3.b) Date of manufacture.c) Name and trademark of the manufacturer. <p>For entrance and exit box sections, indent the required information. Mark interior sections by indenting or with waterproof paint.</p>
<p>SUBSECTION: 701.02.05 Backfill Materials. PART: A) Granular Backfill. NUMBER: 1) REVISION: Remove "A2" from the list of acceptable materials.</p>
<p>SUBSECTION: 701.03.03 Pipe Bedding. REVISION: Replace with the following:</p> <p>701.03.03 Pipe Bedding.</p> <p>A) Reinforced Concrete Pipe. Construct bedding according to the Standard Drawings and this section.</p> <ul style="list-style-type: none">1) Type 1 Installation. When working on a rock foundation, place bedding to a depth of 6 inches or equal to $Bc/12$, the pipe diameter in inches divided by 12, whichever is greater. For all other foundations, place a minimum of 4 inches of bedding. Shape the bedding to conform to the invert shape throughout the entire width and length of the proposed structure. Compact the bedding, but leave the center third of the pipe diameter ($Bc/3$) uncompacted. Place and compact additional bedding material in lifts 6 inches or less to an elevation of 0.30 the culvert diameter.2) Type 4 Installation. When working on a rock foundation, place bedding to a depth of 6 inches or equal to $Bc/12$, the pipe diameter in inches divided by 12, whichever is greater. For all other foundations, place a minimum of 4 inches of bedding. <p>B) Corrugated Metal, Thermoplastic, and Structural Plate Pipe. Place and compact bedding to provide 4 inches of bedding below the outside invert of the pipe after shaping. Shape the bedding to conform to the invert shape throughout the entire width and length of the proposed structure. Place and compact additional bedding material in lifts 6 inches or less to an elevation of 0.30 the culvert diameter.</p>
<p>SUBSECTION: 701.03.06 Initial Backfill. PART: A) Reinforced Concrete REVISION: Replace with the following:</p> <p>A) Reinforced Concrete Pipe.</p> <ul style="list-style-type: none">1) Type 1 Installation. When the top of the pipe is not within one pipe diameter of the subgrade, backfill with granular backfill, additional bedding material, or flowable fill from the top of the bedding to an elevation equal to 1/2 the pipe diameter, and either granular backfill, flowable fill, or embankment material in 6-inch lifts to an elevation of one-foot above the pipe.2) Type 4 Installation. Backfill from the top of the bedding with granular backfill, flowable fill, or embankment material in 6-inch lifts to an elevation of one-foot above the pipe. The Department will allow Type 4 installations for median drains and pipe installations located 35 feet or more from the edge of shoulder, back of curb, or any paved surface.

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition
(Effective with the January 19, 2007 Letting)**

SUBSECTION:	701.05 PAYMENT.
REVISION:	Replace bid item “2599 Fabric-Geotextile, Type IV Square Yard” with “21433ES214 Fabric-Geotextile, Type IV for Pipe Square Yard ⁽²⁾ ”
	Replace foot note “** The unit bid price is \$2.00 per square yard for Geotextile Fabric, Type III” with “ ⁽²⁾ The unit price is \$2.00 per square yard for Fabric-Geotextile, Type IV for Pipe”
SUBSECTION:	710.02.15 Plastic Adjusting Rings.
REVISION:	Replace this section with:
	710.02.15 Plastic or Rubber Adjusting Rings. Provide plastic or rubber adjusting rings that are on the Department’s List of Approved Materials.
SUBSECTION:	710.03.03 Adjusted Small Drainage Structures.
REVISION:	Replace the last sentence of the first paragraph:
	For plastic or rubber adjusting rings, install and seal according to the manufacturer’s recommendations.
SUBSECTION:	711.02 MATERIALS.
REVISION:	Replace with the following:
	Conform to the Contract requirements.
SUBSECTION:	713.03 CONSTRUCTION.
REVISION:	Add the following after the third paragraph:
	Offset longitudinal lines at least 2 inches from longitudinal pavement construction joints. Offset longitudinal lane lines on multi-lane highways 2 inches towards the median.
SUBSECTION:	714.03.06 Proving Period for Durable Markings.
PART:	B) Failure.
REVISION:	Replace the first sentence with the following:
	During the proving period, the Department will consider markings defective when the retroreflectivity falls below the minimum required or the material fails to meet the other requirements of A) above. Additionally, when more than 10 percent of any one-mile section or individual gore area is defective, the Department will consider the entire section defective.
SUBSECTION:	716.03.08 Testing.
REVISION:	Replace “10 megohms” with “100 megohms”
SUBSECTION:	723.03 CONSTRUCTION.
REVISION:	Replace the first sentence of the fourth paragraph with the following:
	Set right-of-way markers within 12 inches of the right-of-way line.
SUBSECTION:	724.02.01 Plants.
REVISION:	Replace the reference “American Association of Nurserymen” with “American Nursery and Landscape Association”.
SUBSECTION:	801.01 REQUIREMENTS.
REVISION:	Add the following sentence after the third sentence of the first paragraph:
	Mills must request and be approved by the Department to supply cement with an SO ₃ content above the value in Table 1 of ASTM C 150.
SUBSECTION:	804.01.03 Conglomerate Sand.
REVISION:	Replace second sentence of the paragraph with the following:
	Conglomerate sand may include some material which has been produced by crushing larger pieces of the parent material.
SUBSECTION:	804.02 Approval.
REVISION:	Replace first sentence of the second paragraph with the following:
	The Department will consider a source for inclusion on the Aggregate Source List when the aggregate producer complies with KM 64-608 and provides the following:

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition
(Effective with the January 19, 2007 Letting)**

SUBSECTION: 804.03 Concrete. REVISION: Second sentence in first paragraph should be a separate paragraph immediately following the first and should read as follows: Provide natural, crushed, or conglomerate sand. The Department will allow any combination of natural, crushed, or conglomerate sand when the combination is achieved in the concrete plant weigh hopper. The Engineer may allow other sands. Use natural or conglomerate sands as fine aggregates in concrete intended as a wearing surface for traffic. Conform to the following:
SUBSECTION: 804.04.03 Polish-Resistant Aggregate. REVISION: Add the following paragraph: Provide a signed certification from the aggregate producer for the manufactured polish-resistant fine aggregate stating that the aggregate is supplied from the approved parent material as found on the Department's List of Approved Materials, Polish-Resistant Aggregate Source List and Guidelines on the Division of Materials' webpage.
SUBSECTION: 804.04.04 Requirements for Combined Aggregates. PART: D) Absorption. REVISION: Delete the first sentence and replace the second sentence with the following: Provide total combined fine aggregates having a water absorption of no more than 4.0 percent.
SUBSECTION: 804.11 Sampling and Testing. REVISION: For Absorption (Fine Aggregate), replace method "AASHTO T 84" with "KM 64-605"
SUBSECTION: 805.02 Approval. REVISION: Replace first sentence of the second paragraph with the following: The Department will consider a source for inclusion on the Aggregate Source List when the aggregate producer complies with KM 64-608 and provides the following:
SUBSECTION: 805.04.01 JPC Base, JPC Pavement, JPC Shoulders, and Concrete for Bridge Decks. REVISION: Replace the subsection heading and first sentence with the following: 805.04.01 JPC Base, JPC Pavement, JPC Shoulders, Concrete for Bridge Decks, and Precast Products. Add the following paragraph: Provide a signed certification from the aggregate producer for the approved freeze-thaw coarse aggregate stating that the aggregate is supplied from the approved parent material as found on the Department's List of Approved Materials and Concrete Aggregate Restriction List.
SUBSECTION: 805.04.01 JPC Base, JPC Shoulders, and Concrete for Bridge Decks. PART: 3) REVISION: Replace the "tests" with "test" in the last sentence.
SUBSECTION: 805.05.05 Polish-Resistant Aggregate. REVISION: Add the following paragraph: Provide a signed certification from the aggregate producer for the manufactured polish-resistant coarse aggregate stating that the aggregate is supplied from the approved parent material as found on the Department's List of Approved Materials, Polish-Resistant Aggregate Source List and Guidelines on the Division of Materials' webpage.

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition**
(Effective with the January 19, 2007 Letting)

SUBSECTION:	805.13.01 Cyclopean Stone Riprap and Channel Lining Class III.
REVISION:	Replace the subsection with the following: 805.13.01 Cyclopean Stone Riprap and/or Channel Lining Class III. Provide material meeting the general requirements of Section 805. Ensure that 100 percent passes through a square opening of 16 inches by 16 inches, and no more than 20 percent passes through square openings of 8 inches by 8 inches. The Department may allow stones of smaller sizes for filling voids in the upper surface and dressing to the proper slope.
SUBSECTION:	806.03.03 Modification.
REVISION:	Replace the first sentence with the following: Use only styrene-butadiene (SB) or styrene-butadiene-styrene (SBS) modifiers.
SUBSECTION:	810.02 APPROVAL.
REVISION:	Replace reference "KM 114" with "KM 115".
SUBSECTION:	810.03.06 Identification and Markings.
REVISION:	Delete the following text from the first paragraph: "When the manufacturer has more than one plant, include the plant letter assigned by the Division of Materials after the date of manufacture as follows: L-Louisville N-London" Delete the following paragraph: "The Department will not require the certification on the shipment approval form to be notarized. The Department will not require the information under "Pipe Data" on the approval form when the manufacture's shipment ticket is attached and contains the necessary information."
SUBSECTION:	811.02.01 Requirements.
REVISION:	Replace the subsection with the following: Furnish bar reinforcement for bridges, cast-in-place culverts, and cast-in-place retaining walls that conforms to ASTM A 615 (billet) or ASTM A 996 (rail). ASTM A 706 steel is acceptable with prior approval of the Division of Materials. Do not weld any steel bar reinforcement unless it is ASTM A 706 rebar. The Engineer will accept rail steel bar reinforcement in straight lengths only. Do not use rail steel reinforcement where field bending is allowed or required.
SUBSECTION:	811.09.02 Dowel Bars.
REVISION:	Replace the reference to "ASTM A 616" with "ASTM A 996" Insert the following sentence between the third and fourth sentence of the first paragraph: Broken or sheared ends are acceptable with prior approval of the Division of Materials.
SUBSECTION:	811.06 BAR MATS.
REVISION:	Replace the subsection with the following: Conform to ASTM A 184 and fabricate by welding deformed Grade 60 weldable bars.
SUBSECTION:	811.09.02 Dowel Bars.
REVISION:	Replace the first paragraph with the following: Furnish dowel bars that are plain round bars conforming to ASTM A 706, A 615, A 996, or A 617 with respect to mechanical properties only. Provide either Grade 40, 50 or 60 steel. Saw cut the free ends of the dowels and ensure that they are free of burrs or projections. Broken or sheared ends are acceptable with prior approval of the Division of Materials. Coat dowel bars according to AASHTO M 254 with the following exceptions for Type B coatings:

**Supplemental Specifications to The Standard Specifications
for Road and Bridge Construction, 2004 Edition**
(Effective with the January 19, 2007 Letting)

SUBSECTION:	811.10.02 Epoxy Coating Material.
REVISION:	Replace both the reference to "ASTM D 3963 Annex" and "ASTM D 3963" with "AASHTO M 284".
SUBSECTION:	812.01.02 Hot-Rolled Carbon Steel Sheets and Strip of Structural Quality, Grade 33 (Corrugated Steel Plank for Bridge Floors).
REVISION:	Replace the reference to "ASTM A 570" with "ASTM A 1011"
SUBSECTION:	827.04 SEED.
PART:	1)
REVISION:	Replace with the following: Obtain seed only through registered dealers holding a permit to label seed.
SUBSECTION:	827.04 SEED.
REVISION:	Replace the second paragraph with the following: Do not use seed (grasses, native grasses and legumes) if the seed test date is over 9 months old exclusive of the month tested, or if the limits of noxious weed seed is exceeded.
SUBSECTION:	827.04 SEED.
REVISION:	Replace the last paragraph with the following: Wildflower seed shall not be planted until approved by the Division of Materials
SUBSECTION:	828.02 APPROVAL.
REVISION:	Add the following: The Department will continue to include the masonry coatings on the list contingent upon receiving an annual certification containing the following information: 1) A statement that the masonry coating to be furnished during the particular calendar year is of the same composition as that previously approved for inclusion on the approved list. 2) A statement that the masonry coating conforms to the appropriate requirements of the Kentucky Standard Specifications for Road and Bridge Construction. 3) A statement that notification will be made to the Division of Materials of any changes in composition for review and approval before furnishing the material to projects.
SUBSECTION:	843.01.02 Acceptance Procedures for Non-Specification Fabric.
TABLE:	GRAB STRENGTH PAYMENT REDUCTION
REVISION:	Add the following note: The Department will use the lowest value of MACHINE and CROSS for the reduction calculation.
SUBSECTION:	844.02.01 Fly Ash.
PART:	1)
REVISION:	Delete the last sentence.
SUBSECTION:	844.02.01 Fly Ash.
REVISION:	Replace the subsection with the following: 844.02.01 Fly Ash. Select from the Department's List of Approved Materials for fly ash sources. To be placed on the list, furnish samples and ASTM C 618 test data developed over the previous 3 months, and confirm to the requirements in KM 64-325.

**SPECIAL PROVISION FOR EMBANKMENT AT
BRIDGE END BENT STRUCTURES**

This Special Provision will apply when indicated on the plans or in the proposal. Section references herein are to the Department's 2004 Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. Construct a soil, granular, or rock embankment with granular or cohesive pile core and place structure granular backfill, as the Plans require. Construct the embankment according to the requirements of this Special Provision, the Plans, Standard Drawing RGX 100 and 105, and the 2004 Standard Specifications.

2.0 MATERIALS.

2.1 Granular Embankment. Conform to Subsection 805.10. When Granular Embankment materials are erodible or unstable according to Subsection 805.03.04, use the Special Construction Methods found in 3.2 of the Special Provision.

2.2 Rock Embankment. Provide durable rock from roadway excavation that consists principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.

2.3 Granular Pile Core. Select a gradation of durable rock to facilitate pile driving that conforms to Subsection 805.11. If granular pile core material hinders pile driving operations, take appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

2.4 Cohesive Pile Core. Conform to Section 206 of the Standard Specifications and use soil with at least 50 percent passing a No. 4 sieve having a minimum Plasticity Index (PI) of 10. In addition, keep the cohesive pile core free of boulders, larger than 6 inches in any dimension, or any other obstructions, which would interfere with drilling operations. If cohesive pile core material interferes with drilling operations, take appropriate means necessary to maintain excavation stability, at no expense to the Department.

2.5 Structure Granular Backfill. Conform to Subsection 805.11

2.6 Geotextile Fabric. Conform to Type I or Type IV in Section 214 and 843 as required in the plans.

3.0 CONSTRUCTION.

3.1 General. Construct roadway embankments at end bents according to Section 206 and in accordance with the Special Provision, the Plans, and Standard Drawings for the full embankment section. In some instances, granular or rock embankment will be required for embankment construction for stability purposes, but this special provision does not prevent the use of soil when appropriate. Refer to the plans for specific details regarding material requirements for embankment construction.

Place and compact granular or cohesive pile core, soil, granular or rock embankment, and structure granular backfill according to the applicable density requirements for the project. When constructing granular or rock embankments, use granular pile core for driven pile foundations and use cohesive pile core for pre-drilled pile or drilled shaft foundations. Place geotextile fabric, Type IV between cohesive pile core and structure granular backfill and granular or rock embankment.

When granular or rock embankment is required for embankment construction, conform to the general requirements of Subsection 206.03.02 B). In addition, place the material in no greater than 2-foot lifts and compact with a vibrating smooth wheel roller capable of producing a minimum centrifugal force of 15 tons. Apply these requirements to the full width of the embankment for a distance of twice the embankment height or 50 feet, whichever is less, as shown on Standard Drawing RGX-105.

When using granular pile core, install 8-inch perforated underdrain pipe at or near the elevation of the original ground in the approximate locations depicted on the standard drawing, and as the Engineer directs, to ensure positive drainage of the embankment. Wrap the perforated pipe with a fabric of a type recommended by the pipe manufacturer.

After constructing the embankment, excavate for the end bent cap, drive piling or install shafts, place the mortar bed, construct the end bent, and complete the embankment to finish grade according to the construction sequence shown on the Plans or Standard Drawings and as specified hereinafter.

After piles are driven or shafts installed (see design drawings), slope the bottom of the excavation towards the ends of the trench as noted on the plans for drainage. Using a separate pour, place concrete mortar, or any class concrete, to provide a base for forming and placing the cap. Place side forms for the end bent after the mortar has set sufficiently to support workmen and forms without being disturbed.

Install 4-inch perforated pipe in accordance with the plans and Standard Drawings. In the event slope protection extends above the elevation of the perforated pipe, extend the pipe through the slope protection.

After placing the end bent cap and removing adjacent forms, fill the excavation

69

with structure granular backfill material to the level of the berm prior to placing beams for the bridge. For soil embankments, place Type IV geotextile fabric between embankment material and structure granular backfill. After completing the end bent backwall, or after completing the span end wall, place the structure granular backfill to subgrade elevation. If the original excavation is enlarged, fill the entire volume with compacted structure granular backfill at no expense to the Department. Do not place backfill before removing adjacent form work. Place structure granular backfill material in trench ditches at the ends of the excavation. Place Geotextile Fabric, Type IV over the surface of structure granular backfill prior to placing aggregate base course.

Tamp the backfill with hand tampers, pneumatic tampers, or other means the Engineer approves. Thoroughly compact the backfill under the overhanging portions of the structure to ensure that the backfill is in intimate contact with the sides of the structure.

Do not apply seeding, sodding, or other vegetation to the exposed granular embankment.

3.2 Special Construction Methods. Erodible or unstable materials may erode even when protected by riprap or channel lining; use the special construction method described below when using these materials.

Use fine aggregates or friable sandstone granular embankment at “dry land” structures only. Do not use them at stream crossings or locations subject to flood waters.

For erodible or unstable materials having 50 percent or more passing the No. 4 sieve, protect with geotextile fabric. Extend the fabric from the original ground to the top of slope over the entire area of the embankment slopes on each side of, and in front of, the end bent. Cover the fabric with at least 12 inches of non-erodible material.

For erodible or unstable materials having less than 50 percent passing a No. 4 sieve, cover with at least 12 inches of non-erodible material.

Where erodible or unstable granular embankment will be protected by riprap or channel lining, place geotextile fabric between the embankment and the specified slope protection.

4.0 MEASUREMENT.

4.1 Granular Embankment. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment any Granular Embankment that is not called for in the plans.

The Department will not measure for payment any special construction caused by using erodible or unstable materials and will consider it incidental to the Granular Embankment regardless of whether the erodible or unstable material was

specified or permitted.

4.2 Rock Embankment. The Department will not measure for payment any rock embankment and will consider it incidental to roadway excavation or embankment in place, as applicable. (embankments requiring rock with none present within project excavation limits will be constructed using granular embankment)

4.3 Granular Pile Core. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment furnishing and placing 8-inch perforated underdrain pipe and will consider it incidental to the Granular pile core. The Department will not measure for payment any granular pile core that is necessary because the contractor elects to use granular or rock embankment when it is not specified in the plans.

4.4 Cohesive Pile Core. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204.

4.5 Structure Granular Backfill. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure any additional material required for backfill outside the limits shown on the Plans and Standard Drawings for payment and will consider it incidental to the work.

When following construction sequence "A", as shown on the Standard Drawings, the Department will not measure structure excavation at the end bent for payment and will consider it incidental to Structure Granular Backfill.

The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Structure Granular Backfill.

4.4 4.6 Geotextile Fabric. The Department will measure the quantities as specified in Section 214. The Department will not measure the quantity of fabric used for separating granular or rock embankment and cohesive pile core and will consider it incidental to cohesive pile core.

4.7 End Bent. The Department will measure the quantities according to the Contract. The Department will not measure furnishing and placing the 2-inch mortar or concrete bed for payment and will consider it incidental to the end bent construction.

5.0 PAYMENT. The Department will make payment for the completed and

69

accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
2223	Granular Embankment	Cubic Yards
20209EP69	Granular Pile Core	Cubic Yards
20210EP69	Cohesive Pile Core	Cubic Yards
2231	Structure Granular Backfill	Cubic Yards
2596, 2599	Geotextile Fabric, Type	See Section 214

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

January 10, 2005

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

	Page
I. General-----	1
II. Nondiscrimination-----	1
III. Nonsegregated Facilities-----	3
IV. Payment of Predetermined Minimum Wage-----	3
V. Statements and Payrolls-----	6
VI. Record of Materials, Supplies, and Labor-----	6
VII. Subletting or Assigning the Contract-----	7
VIII. Safety: Accident Prevention-----	7
IX. False Statements Concerning Highway Projects-----	7
X. Implementation of Clean Air Act and Federal Water Pollution Control Act-----	8
XI. Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion-----	8
XII. Certification Regarding Use of Contract Funds for Lobbying-----	9

ATTACHMENTS

- A. Employment Preference for Appalachian Contracts
(included in Appalachian contracts only)

I. GENERAL

1. 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.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

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

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

- Section I, paragraph 2;
- Section IV, paragraphs 1, 2, 3, 4, and 7;
- Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 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 DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

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 and 41 CFR 60) 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 Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American 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 State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his 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, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO 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 minority group employees.

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 minority groups 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 minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group 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, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group 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 his 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 his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

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. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

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 minority group and women employees 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 his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. 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 best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best 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 SHA 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 minority and women 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 minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) 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 SHA.

8. 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.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. 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 completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number 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;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA 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. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers 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 (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) 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. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, 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 paragraphs 4 and 5 of this Section IV.

b. 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.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification 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 DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour 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.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional 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. Said 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

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. 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 or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a 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.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) 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 DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/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 Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees 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 employee 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 listed in 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 or subcontractor 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-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) 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 journeyman-level 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 for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) 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 DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. 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.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level 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-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor 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. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under an approved definition, shall be paid not less than the applicable wage rate on the wagedetermination for the classification of work actually performed.

5. 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.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor 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, as 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 SHA contracting officer 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.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her 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, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies 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 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof 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. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found 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 and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such 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 the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. 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 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, 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 SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions 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.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

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 State. 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).

a. "Its own organization" shall be construed to include only workers employed and paid directly 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, assignee, or agent of the prime contractor.

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 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 VII 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 SHA 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 SHA 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 SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

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 SHA 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. 333).

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. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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, the following notice 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:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

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 not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary 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 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 primary 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 department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary 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," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which

this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary 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 primary 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 Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

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 may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. 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.

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.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement 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;

c. 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 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary 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 Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

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," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

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.

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 may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

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 Covered Transactions:

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 participation in this transaction 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.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(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 his or her bid or proposal that he or she 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.

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS**

**EMPLOYMENT REQUIREMENTS
RELATING TO
NONDISCRIMINATION OF EMPLOYEES
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)**

**AN ACT OF THE KENTUCKY GENERAL ASSEMBLY
TO PREVENT DISCRIMINATION IN EMPLOYMENT**

**KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972**

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy). The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, disability or age (between forty and seventy), except that such notice or advertisement may indicate a preference, limitation, or specification based on religion, or national origin when religion, or national origin is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age (between forty and seventy), in admission to, or employment in any program established to

provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

REVISED: 12-3-92

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (6) provides:

No present or former public servant shall, within six (6) months of following termination of his office or employment, accept employment, compensation or other economic benefit from any person or business that contracts or does business with the state in matters in which he was directly involved during his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved in state government. This subsection shall not prohibit the performance of ministerial functions, including, but not limited to, filing tax returns, filing applications for permits or licenses, or filing incorporation papers.

KRS 11A.040 (8) states:

A former public servant shall not represent a person in a matter before a state agency in which the former public servant was directly involved, for a period of one (1) year after the latter of:

- a) The date of leaving office or termination of employment; or
- b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, Room 136, Capitol Building, 700 Capitol Avenue, Frankfort, Kentucky 40601; telephone (502) 564-7954.

**TRANSPORTATION CABINET
DIVISION OF CONSTRUCTION PROCUREMENT
COMPLIANCE SECTION
PROJECT WAGE RATES**

HIGHWAY BASIC HOURLY RATES	FRINGE BENEFIT PAYMENTS COMBINED
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CRAFTS

Boilermakers	24.65.....	12.94
Bricklayers:	20.35.....	7.80
Stone Mason	18.95.....	7.80
Carpenters:	18.85.....	7.80
Cement Masons:.....	18.70.....	7.80
Electricians:	*22.60.....	6.97

*When workmen are required to work from bosum chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and T. V. towers, structural steel (open, unprotected, unfloored raw steel), and bridges or similar hazardous locations where workmen are subject to a direct fall, except where using JLG's and bucket trucks up to 75 feet: Add 25% to workman's base rate for 50 to 75 feet, and add 50% to workman's base rate for over 75 feet.

Ironworkers, Reinforcing:	18.75.....	7.80
Ironworkers, Structural:	18.95.....	7.80
Painters		
All Excluding Bridges.....	19.92.....	9.57
Bridges	23.92.....	10.07
Piledrivers:	18.50.....	7.80
Plumbers	22.52.....	7.80
Sheet Metal Worker	20.40.....	7.80

Welders - Receive rate for craft in which welding is incidental.

LABORERS:

General laborer, flagperson, steam jenny.	BASE RATE	16.90
	FRINGE BENEFITS	7.80

Batch truck dumper, deck hand or scowman.	BASE RATE	17.15
	FRINGE BENEFITS	7.80

Power driven tool operator of the following: wagon drill, chain saw, sand blaster, concrete chipper, pavement breaker, vibrator, power wheelbarrow and power buggy, sewer pipe layer, bottom man, dry cement handler, concrete rubber, mason tender.	BASE RATE	17.25
	FRINGE BENEFITS	7.80

**TRANSPORTATION CABINET
DIVISION OF CONSTRUCTION PROCUREMENT
COMPLIANCE SECTION
PROJECT WAGE RATES**

LABORERS: (continue)

Asphalt lute and rakerman, side rail setter.	BASE RATE17.30 FRINGE BENEFITS7.80
Gunnite nozzle man.	BASE RATE17.40 FRINGE BENEFITS7.80
Tunnel laborer (free air).	BASE RATE17.45 FRINGE BENEFITS 7.80
Tunnel mucker (free air),gunnite operator	BASE RATE17.50 FRINGE BENEFITS7.80
Hand blade operator	BASE RATE17.65 FRINGE BENEFITS7.80
Tunnel miner, blaster and driller (free air).	BASE RATE17.85 FRINGE BENEFITS7.80
Caisson worker.	BASE RATE18.40 FRINGE BENEFITS7.80
Powderman.	BASE RATE18.50 FRINGE BENEFITS7.80
Drill operator of percussion type drills which are both powered and propelled by an independent air supply.	BASE RATE19.70 FRINGE BENEFITS7.80
Truckhelper and warehouseman (State).	BASE RATE17.15 FRINGE BENEFITS7.80
Driver, winch truck and A-Frame when used in transporting materials.	BASE RATE17.25 FRINGE BENEFITS7.80

**TRANSPORTATION CABINET
DIVISION OF CONSTRUCTION PROCUREMENT
COMPLIANCE SECTION
PROJECT WAGE RATES**

TRUCK DRIVERS AND RELATED CLASSIFICATIONS:

Driver, (semi-trailer or pole trailer), driver (dump truck, tandem axle), driver of distributor.	BASE RATE17.35 FRINGE BENEFITS7.80
Driver on mixer trucks (all types).	BASE RATE17.40 FRINGE BENEFITS7.80
Truck mechanic	BASE RATE17.45 FRINGE BENEFITS7.80
Driver (3 tons and under), tire changer and truck mechanic helper (State)	BASE RATE17.48 FRINGE BENEFITS7.80
Driver on pavement breakers.	BASE RATE17.50 FRINGE BENEFITS7.80
Driver (over 3 tons), driver (truck mounted rotary drill).	BASE RATE17.69 FRINGE BENEFITS7.80
Driver, Euclid and other heavy earth moving equipment, Low boy	BASE RATE18.26 FRINGE BENEFITS7.80
Greaser on greasing facilities.	BASE RATE18.35 FRINGE BENEFITS7.80

OPERATING ENGINEERS:

Auto patrol, batcher plant, bituminous paver, cable-way, clamshell, concrete mixer (21 cu. ft. or over), concrete pump, crane, crusher plant, derrick, derrick boat, ditching and trenching machine, dragline, dredge engineer, elevator (regardless of ownership when used for hoisting any building material), elevating grader and all types of loaders, hoe-type machine, hoisting engine, locomotive, LeTourneau or carry-all scoop, bulldozer, mechanic, orangepeel bucket, piledriver, power blade, roller (bituminous), roller (earth), roller (rock), scarifier, shovel, tractor shovel, truck crane, well points, winch truck, push dozer, grout pump, high lift, fork lift (regardless of lift height), all types of boom cats, multiple operator, core drill, tow or push boat, A-Frame winch truck, concrete paver, gradeall, hoist, hyster, material pump, pumpcrete, ross carrier, sheep foot, 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,

**TRANSPORTATION CABINET
DIVISION OF CONSTRUCTION PROCUREMENT
COMPLIANCE SECTION
PROJECT WAGE RATES**

OPERATING ENGINEERS: (continued)

tugger, backfiller, gurry, self-propelled compactor, self –contained hydraulic percussion drill.

BASE RATE20.25
FRINGE BENEFITS7.80

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

BASE RATE18.50
FRINGE BENEFITS7.80

Greaser on grease facilities servicing heavy equipment

BASE RATE18.35
FRINGE BENEFITS7.80

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

BASE RATE17.76
FRINGE BENEFITS7.80

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of the General Laborer except those classified as bona fide apprentices.

These rates are listed pursuant to the Kentucky Determination No. CR-05-II-HWY dated May 16, 2006 and/or Federal Decision No. KY 20070026 dated February 9, 2007.

NOTE: Both Kentucky Determination No. CR-05-II-HWY and Federal Decision No. KY20070026 dated February 9, 2007 apply to this project. This set of wage rates contains a combination of these two wage decisions.

**TRANSPORTATION CABINET
DIVISION OF CONSTRUCTION PROCUREMENT
COMPLIANCE SECTION
PROJECT WAGE RATES**

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 to the undersigned.

Steve Waddle, Director
Division of Construction Procurement
Frankfort, Kentucky 40622

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(Executive Order 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
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 Perry County.

PART IV
INSURANCE

INSURANCE

The Contractor shall carry the following insurance in addition to the insurance required by law:

1. Contractor's Public Liability Insurance not less than \$100,000.00 for damages arising out of bodily injuries to or death to one person. Not less than \$300,000.00 for damages arising out of bodily injuries to or death to two or more persons.
2. Contractor's Property Damages Liability Insurance. Not less than \$100,000.00 for all damages arising out of injury or destruction of property in any one accident. Not less than \$300,000.00 for all damages during the policy period.
3. Contractor's Protective Public Liability and Property Damage Insurance. The contractor shall furnish evidence with respect to operations performed for him by subcontractors that he carries in his own behalf for the above stipulated amounts.
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. 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.

PART V

STATEMENT OF INCOMPLETE WORK

STATEMENT OF INCOMPLETED WORK

All active prime contracts must be reported. This includes prime contracts with public and private owners and joint-ventured contracts. The names of the joint venturers must be shown when reporting these projects. A machine or typed listing reporting the status of each contract is acceptable when attached to this report; however, the total amounts on the itemized listing must be reported in the space provided below:

CONTRACT WITH	PROJECT IDENTIFICATION	PRIME CONTRACT AMOUNT	EARNINGS THROUGH LAST APPROVED ESTIMATE	TOTAL AMOUNT OF WORK REMAINING
TOTAL (Attach Summary if not itemized above)		\$	\$	\$

PART VI

BID ITEMS

TRANSPORTATION CABINET

Department of Highways

FRANKFORT, KY 40622

Sheet No: 1

Contract ID: 07-1109

PERRY COUNTY

HSIP 5375 (031)

Letting: 4/20/07

THE BIDDER MUST MAKE THE EXTENSIONS AND ADDITIONS
SHOWING TOTAL AMOUNT BID USING FIGURES ONLY

Item No.	Code No.	Item	Approximate Quantity	Unit	Unit Price Dollars	Amount Dollars
		ROADWAY			.	.
0010	00001	DGA BASE	2,205.00	TON	.	.
0020	00020	TRAFFIC BOUND BASE	31.00	TON	.	.
0030	00190	LEVELING & WEDGING PG64-22	665.00	TON	.	.
0040	00212	CL2 ASPH BASE 1.00D PG64-22	2,536.00	TON	.	.
0050	00307	CL2 ASPH SURF 0.38B PG64-22	971.00	TON	.	.
0060	00441	ENTRANCE PIPE-18 INCH	66.00	LF	.	.
0070	00461	CULVERT PIPE-15 INCH	4.00	LF	.	.
0080	00464	CULVERT PIPE-24 INCH	4.00	LF	.	.
0090	00469	CULVERT PIPE-42 INCH	17.00	LF	.	.
0100	00491	CULVERT PIPE-18 INCH EQUIV	79.00	LF	.	.
0110	00520	STORM SEWER PIPE-12 INCH	45.00	LF	.	.
0120	00521	STORM SEWER PIPE-15 INCH	1,296.00	LF	.	.
0130	00522	STORM SEWER PIPE-18 INCH	1,147.00	LF	.	.
0140	00524	STORM SEWER PIPE-24 INCH	141.00	LF	.	.
0150	00980	SLOTTED DRAIN PIPE-12 INCH	105.00	LF	.	.
0160	01000	PERFORATED PIPE-4 INCH	654.00	LF	.	.
0170	01371	METAL END SECTION TY 1-18 INCH	2.00	EACH	.	.
0180	01440	SLOPED BOX INLET-OUTLET TYPE 1	1.00	EACH	.	.
0190	01480	CURB BOX INLET TYPE B	9.00	EACH	.	.
0200	01544	DROP BOX INLET TYPE 11	3.00	EACH	.	.
0210	01559	DROP BOX INLET TYPE 13G	20.00	EACH	.	.
0220	01568	DROP BOX INLET TYPE 13S	6.00	EACH	.	.
0230	01584	CAP DROP BOX INLET	1.00	EACH	.	.
0240	01643	JUNCTION BOX-24 INCH	2.00	EACH	.	.
0250	01653	JUNCTION BOX-SPECIAL	1.00	EACH	.	.
0260	01791	ADJUST MANHOLE FRAME TO GRADE	5.00	EACH	.	.

TRANSPORTATION CABINET

Department of Highways

FRANKFORT, KY 40622

Sheet No: 2

Contract ID: 07-1109

PERRY COUNTY

HSIP 5375 (031)

Letting: 4/20/07

THE BIDDER MUST MAKE THE EXTENSIONS AND ADDITIONS
 SHOWING TOTAL AMOUNT BID USING FIGURES ONLY

Item No.	Code No.	Item	Approximate Quantity	Unit	Unit Price Dollars	Amount Dollars
0270	01811	STANDARD CURB AND GUTTER MOD	1,514.00	LF	.	.
0280	01821	LIP CURB AND GUTTER MODIFIED	2,061.00	LF	.	.
0290	01875	STANDARD HEADER CURB	272.00	LF	.	.
0300	02014	BARRICADE-TYPE III	4.00	EACH	.	.
0310	02099	CEM CONC ENT PAVEMENT-6 INCH	1,753.00	SQYD	.	.
0320	02200	ROADWAY EXCAVATION	3,662.00	CUYD	.	.
0330	02223	GRANULAR EMBANKMENT	2,718.00	CUYD	.	.
0340	02242	WATER	600.00	MGAL	.	.
0350	02351	GUARDRAIL-STEEL W BEAM-S FACE	200.00	LF	.	.
0360	02360	GUARDRAIL TERMINAL SECTION NO 1	3.00	EACH	.	.
0370	02381	REMOVE GUARDRAIL	304.00	LF	.	.
0380	02391	GUARDRAIL END TREATMENT TYPE 4A	1.00	EACH	.	.
0390	02484	CHANNEL LINING CLASS III	60.00	TON	.	.
0400	02545	CLEARING AND GRUBBING 1.1 ACRES	1.00	LS	.	.
0410	02562	SIGNS	220.00	SQFT	.	.
0420	02575	DITCHING AND SHOULDERING	432.00	LF	.	.
0430	02585	EDGE KEY	602.00	LF	.	.
0440	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS	.	.
0450	02701	TEMPORARY SILT FENCE	355.00	LF	.	.
0460	02704	SILT TRAP TYPE B	4.00	EACH	.	.
0470	02707	CLEAN SILT TRAP TYPE B	4.00	EACH	.	.
0480	02709	CLEAN TEMPORARY SILT FENCE	355.00	LF	.	.
0490	02726	STAKING	1.00	LS	.	.
0500	02775	FLASHING ARROW	1.00	EACH	.	.
0510	03260	CLEAN ROADWAY DRAINS	2.00	EACH	.	.
0520	05950	EROSION CONTROL BLANKET	165.00	SQYD	.	.

TRANSPORTATION CABINET

Department of Highways

FRANKFORT, KY 40622

Sheet No: 3

Contract ID: 07-1109

PERRY COUNTY

HSIP 5375 (031)

Letting: 4/20/07

THE BIDDER MUST MAKE THE EXTENSIONS AND ADDITIONS
SHOWING TOTAL AMOUNT BID USING FIGURES ONLY

Item No.	Code No.	Item	Approximate Quantity	Unit	Unit Price Dollars	Amount Dollars
0530	05953	TEMP SEEDING AND PROTECTION	5,324.00	SQYD	.	.
0540	05966	TOPDRESSING FERTILIZER	0.11	TON	.	.
0550	05985	SEEDING AND PROTECTION	1,100.00	SQYD	.	.
0560	06514	PAVE STRIPING-PERM PAINT-4 IN	11,949.00	LF	.	.
0570	06517	PAVE STRIPING-PERM PAINT-12 IN	76.00	LF	.	.
0580	06567	PAVE MARKING-THERMO STOP BAR-12IN	11.00	LF	.	.
0590	06574	PAVE MARKING-PRE THERM CURV ARROW	12.00	EACH	.	.
0600	06576	PAVE MARKING-PREF THERMO ONLY	2.00	EACH	.	.
0610	08100	CONCRETE-CLASS A	2.68	CUYD	.	.
0620	08150	STEEL REINFORCEMENT	215.00	LB	.	.
0630	10000NS	LOT PAY ADJUSTMENT	8,344.00	DOLL	1.0000	8,344.00
0640	10020NS	FUEL ADJUSTMENT	3,464.00	DOLL	1.0000	3,464.00
0650	10030NS	ASPHALT ADJUSTMENT	6,312.00	DOLL	1.0000	6,312.00
0660	20496NS843	SILT TRAP TYPE C	33.00	EACH	.	.
0670	20497NS843	CLEAN SILT TRAP TYPE C	33.00	EACH	.	.
0680	20550ND	SAWCUT PAVEMENT	1,423.00	LF	.	.
0690	20588NC	INSTALL PROJECT IDENTIFICATION SIGNS	2.00	EACH	.	.
0700	21433ES214	FABRIC GEOTEXTILE TY IV FOR PIPE	2,733.00	SQYD	2.0000	5,466.00
		BRIDGE			.	.
0710	02223	GRANULAR EMBANKMENT	60.00	CUYD	.	.
0720	02403	REMOVE CONCRETE MASONRY	7.40	CUYD	.	.
0730	08003	FOUNDATION PREPARATION	1.00	LS	.	.
0740	08100	CONCRETE-CLASS A	47.70	CUYD	.	.
0750	08150	STEEL REINFORCEMENT	4,525.00	LB	.	.
		UTILITY			.	.
0760	01065	STEEL ENCASEMENT PIPE-8 INCH	124.00	LF	.	.

TRANSPORTATION CABINET

Department of Highways

FRANKFORT, KY 40622

Sheet No: 4

Contract ID: 07-1109

PERRY COUNTY

HSIP 5375 (031)

Letting: 4/20/07

THE BIDDER MUST MAKE THE EXTENSIONS AND ADDITIONS
 SHOWING TOTAL AMOUNT BID USING FIGURES ONLY

Item No.	Code No.	Item	Approximate Quantity	Unit	Unit Price Dollars	Amount Dollars
0770	02220	FLOWABLE FILL	25.00	CUYD	.	.
0780	02555	CONCRETE-CLASS B	41.00	CUYD	.	.
0790	03400	GAS LINE-2 INCH	170.00	LF	.	.
0800	03432	REMOVE AND RELOCATE METER	2.00	EACH	.	.
0810	03437	RECONNECT SERVICE	9.00	EACH	.	.
0820	03522	GATE VALVE-2 INCH	2.00	EACH	.	.
0830	04903	REFERENCE MARKER	12.00	EACH	.	.
0840	21753EN	PE SERVICE LINE-3/4 IN	230.00	LF	.	.
0850	21764EN	GAS LINE-3 IN	2,370.00	LF	.	.
0860	21769NN	RETIE GAS LINE-3 IN	2.00	EACH	.	.
0870	21770NN	RETIE GAS LINE-2 IN	1.00	EACH	.	.
0880	21772NN	VENT- COMPLETE IN PLACE	4.00	EACH	.	.
0890	21938EN	SERVICE BORE	24.00	LF	.	.
0900	21939EN	FREE BORE	55.00	LF	.	.
0910	21940EN	BORED LINER PIPE-8 IN	28.00	LF	.	.
0920	21941NN	VALVE AND BOX-3 IN	3.00	EACH	.	.
0930	21943EN	PAVEMENT REPLACEMENT	62.00	TON	.	.
		SEWER			.	.
0940	00001	DGA BASE	75.00	TON	.	.
0950	01095	DUCTILE IRON PIPE-8 INCH	955.00	LF	.	.
0960	21296ED	TIE IN TO EXISTING 8" DIP	2.00	EACH	.	.
0970	21994NN	CONCRETE ANCHOR BLOCKING	1.00	LS	.	.
0980	21995NN	CONCRETE PAD REPLACEMENT	1.00	LS	.	.
0990	21996NN	AIR RELEASE VALVE AND BOX	1.00	EACH	.	.
1000	21997EN	STREAM CROSSING	15.00	LF	.	.
1010	21998NN	SITE RESTORATION	1.00	LS	.	.
		WATERLINE			.	.

TRANSPORTATION CABINET

Department of Highways

FRANKFORT, KY 40622

Sheet No: 5

Contract ID: 07-1109

PERRY COUNTY

HSIP 5375 (031)

Letting: 4/20/07

THE BIDDER MUST MAKE THE EXTENSIONS AND ADDITIONS
SHOWING TOTAL AMOUNT BID USING FIGURES ONLY

Item No.	Code No.	Item	Approximate Quantity	Unit	Unit Price Dollars	Amount Dollars
1020	01065	STEEL ENCASEMENT PIPE-8 INCH	51.00	LF	.	.
1030	01067	STEEL ENCASEMENT PIPE-10 INCH	40.00	LF	.	.
1040	01069	STEEL ENCASEMENT PIPE-12 INCH	82.00	LF	.	.
1050	01093	DUCTILE IRON PIPE-6 INCH	430.00	LF	.	.
1060	01095	DUCTILE IRON PIPE-8 INCH	2,060.00	LF	.	.
1070	02220	FLOWABLE FILL	26.00	CUYD	.	.
1080	02555	CONCRETE-CLASS B	40.00	CUYD	.	.
1090	02606	FIRE HYDRANT	1.00	EACH	.	.
1100	03381	PVC PIPE-2 INCH	75.00	LF	.	.
1110	03430	INSTALL WATER METER	3.00	EACH	.	.
1120	03431	RELOCATE WATER METER 2"	1.00	EACH	.	.
1130	03431	RELOCATE WATER METER 3/4"	2.00	EACH	.	.
1140	03463	TIE-IN 2 INCH	2.00	EACH	.	.
1150	03466	TIE-IN 6 INCH	1.00	EACH	.	.
1160	03468	TIE-IN 8 INCH	2.00	EACH	.	.
1170	03522	GATE VALVE-2 INCH	2.00	EACH	.	.
1180	03526	GATE VALVE-6 INCH	2.00	EACH	.	.
1190	03528	GATE VALVE-8 INCH	5.00	EACH	.	.
1200	20311EC	SERVICE LINE-3/4 IN	495.00	LF	.	.
1210	21938EN	SERVICE BORE	72.00	LF	.	.
1220	21939EN	FREE BORE	55.00	LF	.	.
1230	21942NN	RETIE SERVICE OR METER	14.00	EACH	.	.
1240	21943EN	PAVEMENT REPLACEMENT	61.00	TON	.	.
		DEMOBILIZATION			.	.
1250	02569	DEMOBILIZATION	1.00	LS	.	.

TRANSPORTATION CABINET

Department of Highways

FRANKFORT, KY 40622

Sheet No: 6

Contract ID: 07-1109

PERRY COUNTY

HSIP 5375 (031)

Letting: 4/20/07

THE BIDDER MUST MAKE THE EXTENSIONS AND ADDITIONS
SHOWING TOTAL AMOUNT BID USING FIGURES ONLY

Item No.	Code No.	Item	Approximate Quantity	Unit	Unit Price Dollars	Amount Dollars
TOTAL BID						\$.

PART VII
CERTIFICATIONS

PROVISIONS RELATIVE TO SENATE BILL 258 (1994)

During the performance of the contract, the contractor agrees to comply with applicable provisions of:

1. KRS 136 Corporation and Utility Taxes
2. KRS 139 Sale and Use Taxes
3. KRS 141 Income Taxes
4. KRS 337 Wages and Hours
5. KRS 338 Occupational Safety and Health of Employees
6. KRS 341 Unemployment Compensation
7. KRS 342 Workers Compensation

Any final determinations of a violation by the contractor within the previous five (5) years pursuant to the applicable statutes above are revealed as follows:

NON-COLLUSION CERTIFICATION

COMMONWEALTH OF KENTUCKY

COUNTY _____

PROJECT NO. _____

I, _____, _____, under
(Name of officer signing certification) (Title)

penalty of perjury under the laws of the United States, do hereby certify that

(Insert name of Individual, Joint Venture, Co-partnership, or Corporation submitting bid)

its agent, officers or employees have not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding in connection with this proposal.

(Signature)

(Title)

REVISED: 8-23-89

NON-COLLUSION CERTIFICATION

COMMONWEALTH OF KENTUCKY

COUNTY _____

PROJECT NO. _____

I, _____, _____, under
(Name of officer signing certification) (Title)

penalty of perjury under the laws of the United States, do hereby certify that

(Insert name of Individual, Joint Venture, Co-partnership, or Corporation submitting bid)

its agent, officers or employees have not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding in connection with this proposal.

(Signature)

(Title)

REVISED: 8-23-89

CERTIFICATION OF ORGANIZATION(S)

COMMONWEALTH OF KENTUCKY

COUNTY _____

PROJECT NO. _____

I, _____, _____, under penalty
(President or Authorized Official of Bidder) (Title)

perjury under the laws of the United States, do hereby certify that, except as noted below,

(Insert name of individual, Joint Venture, Co-Partnership or Corporation Submitting Bid)

any person associated therewith in the capacity of (owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the Administration of Federal Funds): is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency; has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years; does not have a proposed debarment pending; and has not been indicted, convicted, or had a civil judgement rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

Please list below any exceptions to the foregoing, to whom it applies, initiating agency and dates of action.

Exceptions: _____

(Signature)

(Title)

CERTIFICATION OF PERFORMANCE

Certification with regard to the Performance of Previous Contracts or Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports.

The bidder _____, proposed subcontractor _____, hereby certifies that he has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he has _____, has not _____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the Former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

(Company)

By: _____

(Title)

Date: _____

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with the contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders of their implementing regulation.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed reports should note that 41 CFR 60-1.7(b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

CERTIFICATION FOR FEDERAL-AID CONTRACT

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

1. 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 agent.
2. 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.

This certification is a material representation of fact 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 Section 1352, Title 31, U.S. Code. 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.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

(Insert name of Individual, Joint Venture, Co-partnership, or Corporation submitting bid)

(Signature)

(Title)

CERTIFICATION OF BID PROPOSAL / DBE

We (I) propose to furnish all labor, equipment and materials necessary to construct and/or improve the subject project in accordance with the plans, the Transportation Cabinet's Standard Specifications for Road and Bridge Construction, current edition, special provisions, notes applicable to the project as indicated herein and all addenda issued on this project subsequent to purchase of proposal.

We (I) attach a bid proposal guaranty as provided in the special provisions in an amount not less than 5% of the total bid. We agree to execute a contract in accordance with this bid proposal within 15 calendar days after the receipt of the notice of award for the project.

We (I) have examined the site of proposed work, project plans, specifications, special provisions, and notes applicable to the project referred to herein. We understand that the quantities shown herein are estimated quantities subject to increase or decrease as provided in the specifications.

We (I) acknowledge receipt of all addendum(s) (if applicable) and have made the necessary revisions to the bid proposal. We have considered all addendum(s) in the calculation of the submitted bid and applied the updated bid items, which are included.

- No Addendum(s) have been posted

“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.”

Name of Contracting Firm

BY: _____
Authorized Agent (Signature) Title

Address City State Zip Code

Telephone Number

When two or more organizations bid as a joint venture, enter names of each organization and an authorized agent for each organization must sign above.