Insert Federal Wage Rates

http://www.wdol.gov/

http://www.wdol.gov/dba.aspx

General Decision Number: KY190039 02/01/2019 KY39

Superseded General Decision Number: KY20180101

State: Kentucky

Construction Type: Highway

Counties: Boone, Campbell, Kenton and Pendleton Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate,if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	02/01/2019

BRKY0002-005 06/01/2017

	Rates	Fringes
BRICKLAYER	$ 27.81	13.01

BROH0001-005 06/01/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 25.75	8.60

CARP0698-001 05/01/2014

BOONE, CAMPBELL, KENTON & PENDLETON COUNTIES:

	Rates	Fringes
Carpenter & Piledrivermen	$ 27.27	14.59
Diver	$ 40.58	9.69

ELEC0212-007 06/04/2018

	Rates	Fringes
ELECTRICIAN	$ 28.39	18.98

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* ELEC0212-013 11/26/2018

	Rates	Fringes
Sound & Communication Technician	$ 24.35	10.99

ENGI0018-013 05/01/2018

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 36.14	14.90
GROUP 2	$ 36.02	14.90
GROUP 3	$ 34.98	14.90
GROUP 4	$ 33.80	14.90
GROUP 5	$ 28.34	14.90
GROUP 6	$ 36.39	14.90
GROUP 7	$ 36.64	14.90

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System); Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24"

wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; & Wheel Excavator

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48"; Bulldozer; Endloader; Hydro Milling Machine; Horizontal Directional Drill (over 500,000 ft. lbs. thrust); Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24" wide & under); & Vermeer type Concrete Saw

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer; Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4" & over discharge); Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); & Welding Machines

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway) except Masonry); Finishing Machine; Fireperson, Floating Equipment (all types); Fork Lift (highway); Form Trencher; Hydro Hammer; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); & Vibratory Compactor with Integral Power

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt); Generator; Masonry Fork Lift; Inboard-Outboard Motor Boat Launch; Masonry Fork Lift; Oil Heater (asphalt plant); Oiler; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4" discharge); Signalperson; Tire Repairperson; & VAC/ALLS

GROUP 6 - Master Mechanic & Boom from 150 to 180

GROUP 7 - Boom from 180 and over

IRON0044-008 06/01/2018

	Rates	Fringes

Ironworkers:
Fence Erector.....$ 26.76 21.20
Structural.....$ 28.17 21.20

IRON0044-018 06/01/2018

	Rates	Fringes
IRONWORKER, REINFORCING	$ 28.17	21.20

LABO0189-004 07/01/2018

PENDLETON COUNTY:

	Rates	Fringes
LABORER		
GROUP 1	$ 23.07	14.21
GROUP 2	$ 23.32	14.21
GROUP 3	$ 23.37	14.21
GROUP 4	$ 23.97	14.21

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal

Boring; Air Track Driller (All Types); Powderman & Blaster; Troxler & Concrete Tester if Laborer is Utilized

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LABO0265-009 05/01/2018

BOONE, CAMPBELL & KENTON COUNTIES:

	Rates	Fringes
LABORER		
GROUP 1	$ 30.62	10.95
GROUP 2	$ 30.79	10.95
GROUP 3	$ 31.12	10.95
GROUP 4	$ 31.57	10.95

LABORER CLASSIFICATIONS

GROUP 1 - Asphalt Laborer; Carpenter Tender; Concrete Curing Applicator; Dump Man (Batch Truck); Guardrail and Fence Installer; Joint Setter; Laborer (Construction); Landscape Laborer; Highway Lighting Worker; Signalization Worker; Mesh Handlers & Placer; Right-of-way Laborer; Riprap Laborer & Grouter; Scaffold Erector; Seal Coating; Surface Treatment or Road Mix Laborer; Sign Installer; Slurry Seal; Utility Man; Bridge Man; Handyman; Waterproofing Laborer; Flagperson; Hazardous Waste (level D); Diver Tender; Zone Person & Traffic Control

GROUP 2 - Skid Steer; Asphalt Raker; Concrete Puddler; Kettle Man (Pipeline); Machine Driven Tools (Gas, Electric, Air); Mason Tender; Brick Paver; Mortar Mixer; Power Buggy or Power Wheelbarrow; Sheeting & Shoring Man; Surface Grinder Man; Plastic Fusing Machine Operator; Pug Mill Operator; & Vacuum Devices (wet or dry); Rodding Machine Operator; Diver; Screwman or Paver; Screed Person; Water Blast, Hand Held Wand; Pumps 4" & Under (Gas, Air or Electric) & Hazardous Waste (level C); Air Track and Wagon Drill; Bottom Person; Cofferdam (below 25 ft. deep); Concrete Saw Person; Cutting with Burning Torch; Form Setter; Hand Spiker (Railroad); Pipelayer; Tunnel Laborer (without air) & Caisson; Underground Person (working in Sewer and Waterline, Cleaning, Repairing & Reconditioning); Sandblaster Nozzle Person; & Hazardous Waste (level B)

GROUP 3 - Blaster; Mucker; Powder Person; Top Lander; Wrencher (Mechanical Joints & Utility Pipeline); Yarner; Hazardous Waste (level A); Concrete Specialist; Concrete Crew in Tunnels (With Air-pressurized - $1.00 premium); Curb Setter & Cutter; Grade Checker; Utility Pipeline Tapper; Waterline; and Caulker

GROUP 4 - Miner; & Gunite Nozzle Person

TUNNEL LABORER WITH AIR-PRESSURIZED ADD $1.00 TO BASE RATE

SIGNAL PERSON WILL RECEIVE THE RATE EQUAL TO THE RATE PAID THE LABORER CLASSIFICATION FOR WHICH HE OR SHE IS SIGNALING.

PAIN0012-016 05/01/2015

	Rates	Fringes
PAINTER		
Bridge	$ 24.39	9.06
Bridge Equipment Tender and Containment Builder	$ 20.73	9.06
Brush & Roller	$ 23.39	9.06
Sandblasting & Water Blasting	$ 24.14	9.06
Spray	$ 23.89	9.06

PLUM0392-008 06/01/2018

	Rates	Fringes
PLUMBER	$ 32.01	19.67

SUKY2010-161 02/05/1996

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 15.85	4.60
GROUP 2	$ 16.29	4.60

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Driver

GROUP 2 - Euclid Wagon; End Dump; Lowboy; Heavy Duty Equipment; Tractor-Trailer Combination; & Drag

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage

payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

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

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

PART 6

SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS FOR CONSTRUCTION

In general, unless specifically set forth herein, the work, materials, and methods of measurement and payment shall conform to the applicable divisions and paragraphs (as noted on the Bid Proposal or in the plans) of the most current edition of the:

COMMONWEALTH OF KENTUCKY

TRANSPORTATION CABINET

DEPARTMENT OF HIGHWAYS, FRANKFORT

Standard Specifications
for
Road and Bridge Construction

SPECIAL PROVISIONS

ITEMS 105.07 / 107.15 - COOPERATION WITH UTILITIES

All portions of Item 105.07 and Item 107.15 of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction shall apply.

At least two (2) working days prior to commencing construction operations in an area which may involve underground utility facilities as shown on the plans, the Contractor shall notify the Engineer, the registered utility protection service, and the owners of each underground utility facility not members of the registered utility protection service.

The existing underground utilities are shown as accurately as possible on the plans, based on information available. The Owner and/or the Engineer do not assume any liability for location of these underground utility service lines. Any utility services damaged that were previously marked in the field shall be replaced at the Contractor's expense.

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the existing structure, both as to line and grade, before he starts to lay the proposed conduit, in order to assure compatibility with line and grade of the proposed conduit. Payment for all operations described above shall be included in the unit price bid for the pertinent conduit item.

The Contractor shall adjust or arrange with utility company to adjust to proposed grade all existing utility facilities, i.e., manholes, catch basins, valves, boxes, etc., prior to the commencement of paving operations. This shall include utility facilities not shown on the plans, which may be found to be located within the pavement area. Work performed on the utility facilities shall be in strict accordance with the specifications of the applicable utility company and shall be performed under the direction, supervision, and inspection of said company.

COORDINATION WITH UTILITIES

Coordination of work schedules with affected utilities will be required. Upon the contract award, the coordination of all necessary relocations or adjustment of all utility facilities become the responsibility of the Contractor.

ITEM 105.06 - COOPERATION BETWEEN CONTRACTORS

The Contractor shall coordinate his work with other Contractors within or adjacent to the project limits. All improvements completed under this contract shall meet the line and grade of other work in an acceptable manner.

TEM 106 - CONTROL OF MATERIAL

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of proper quality and sufficient for the purpose contemplated. The Contractor shall furnish, if so required, satisfactory evidence as to type and quality of materials and workmanship.

All items of equipment and/or material proposed by the Contractor for substitutions must be approved by the Engineer in writing and shall be equal or superior to the items specified in the contract documents. If said substitution proposed by the Contractor for a specified item requires engineering revisions, the total expense of said revisions shall be paid by the Contractor.

Any items of labor and materials required, but not shown as a separate pay item in the proposal, shall be furnished and installed as incidental to the contract, except as noted in the plans and specifications.

ITEM 106.08 - STORAGE OF MATERIALS

The Contractor shall obtain prior approval in writing from the Owner for the locations to be used for the temporary storage of construction materials, tools, and/or machinery. All such materials, tools, and machinery shall be neatly and compactly piled in such a manner as to cause the least inconvenience to the property owners and to traffic. Under no circumstances shall existing drainage courses be blocked or water hydrants, valves, or meter pits covered. All materials, tools, machinery, etc., stored upon public thoroughfares must be provided with warning lights and reflective sheeting at nighttime and weekends to alert traffic of such obstructions.

ITEM 108.02 - PRECONSTRUCTION CONFERENCE

Prior to the commencement of construction activities, the Engineer will arrange a meeting between the Contractor, the representatives of the Owner, and the representatives of each of the utility companies. The time, date, and location of said meeting will be determined after the awarding of the contract, and the parties will be notified by the Engineer.

The agenda for the preconstruction meeting shall include the following items:

1. Announcement of Award
2. Utility Company Requirements
3. Designation of Emergency 24-hour Contractor Contacts
4. Discussion of Critical Plan Items
5. Review of Testing and Inspection Procedures
6. Operations Schedule
7. Listing of Haul Roads

8. Identification of Subcontractors
9. Review of Change Order Process
10. Payment Request Submittal Procedure

The Contractor shall coordinate all work with the Engineer. A detailed schedule of operations shall be furnished by the Contractor to the Engineer at the preconstruction meeting and shall list the order of operations and the time frame for the completion of each item of work. The schedule of operations shall be approved by the Engineer and the Owner in writing prior to the beginning of the work. Changes to said schedule are to be issued in writing and approved by the Engineer and the Owner before operations are changed or rescheduled. No payment will be made to the Contractor while he is delinquent in the submission of a progress schedule.

The Contractor shall supply to the Engineer at the preconstruction meeting, a list of the local roads to be used for the purpose of hauling equipment and/or material to or from the job site. Only the local roads in the vicinity of the project have to be listed; state and/or federal roads do not have to be included. Where necessary, the list shall include the extent of the roads to be affected and any special restrictions, such as height or weight restrictions, which may be applicable along said roads. Construction shall not commence until the Engineer and/or Owner has reviewed the haul road list and approved the haul roads in writing.

The submission of the list to and the review and approval of the list by the Engineer do not relieve the Contractor of the responsibility for the conforming to and the obeying of all applicable height and weight restrictions on the haul roads and of the responsibility for any damage done to and/or along said haul roads. The Contractor is referred to Item 105.10 concerning load restrictions.

ITEM 107.04 - PERMITS, LICENSES AND TAXES

The Contractor shall insure that all required notices are given and all permits acquired before the commencement of work. The Engineer will discuss any special permits required for this project at the preconstruction meeting.

ITEM 107.14 - CONTRACTOR'S RESPONSIBILITY FOR WORK

It shall be the responsibility of the Contractor to perform his work in such a manner as not to damage or destroy any existing feature (i.e., existing inlets, conduits, etc.), which is not marked for replacement or removal. The Contractor shall exercise due care during construction so as not to destroy any trees, plants, shrubs or structures not specifically marked for removal or relocation within the work limits. In some instances, the Contractor will be required to excavate under and around the existing utilities. Extreme care should be used not to damage the utility during this operation. The Contractor shall schedule his operations so that the improved areas have had sufficient time to cure, set and/or harden before the area is opened to traffic or use. The Contractor shall be responsible for the immediate repair of the improved area if any damage is done by traffic. The Contractor shall also be responsible for the immediate rectification of problems created in areas

outside of the improved areas which are attributable to the failure of the improved area, i.e., the tracking of materials into unimproved areas.

The Contractor shall be responsible for the protection of areas outside of the designated work limits, but which may be adjacent to those work limits. This will include those areas used by construction traffic for access to and from the work areas. Where the Engineer and/or the Owner determine that the Contractor's operations have been responsible for damage to areas outside of the work limits, the Contractor shall be responsible for the repair of the area subject to the approval of the Engineer. No additional compensation will be due to the Contractor for any such repairs as described above.

ITEM 112 - MAINTAINING TRAFFIC

Local traffic must be maintained at all times in conformance with Item 112. The Contractor shall adequately mark, through the use of barrels, flashing lights, portable gates and/or other devices approved by the Engineer, the limits of the project area and those areas of the site which are temporarily closed to traffic.

During the course of the normal working day, the Contractor shall insure the safety of the public by providing a sufficient number of flaggers to assist the traffic flow through the construction area. If, at the completion of the normal working day, any trench for pavement construction and/or construction of proposed sewer has not been completely backfilled and restored, a temporary cover, such as a metal plate or another approved device, shall be placed over that portion of the trench remaining open.

The Contractor shall notify the residents at least 48 hours in advance of when their drives will be blocked during construction. In those areas where existing pavement is to be removed and replaced, the Contractor shall conduct his operations so as to maintain driveway traffic through the construction area. Repeated blocking must allow at least a 15-minute interval of traffic access every hour. Length of residential driveway closures shall be kept to a minimum.

Maximum closure length shall be 96 hours. The Contractor shall place new driveways within 24 hours of removal. The Contractor shall keep driveways closed for a 72-hour period after concrete placement to permit the curing of concrete curbs, driveway aprons, or sidewalk across driveways. The Contractor will be responsible for barricading off and signing portions of the street sufficient in length to park all of the residents' cars whose driveways will be blocked. Where concrete restoration is involved, this inconvenience will be held to a minimum by revising curing specifications and permitting cars to use the driveway 72 hours after pouring.

The Contractor shall note that any interim material used for providing driveway ingress and egress will not be a separate pay item, and the cost of said interim material shall be included in the lump-sum price bid for Item 112.

Contractor shall comply with all requirements of the approved Encroachment permit.

ITEM 112 - TEMPORARY TRAFFIC CONTROL DEVICES

Temporary traffic control devices and facilities shall be furnished, erected maintained and paid for in accordance with the provision of Section 112 – Maintenance and Control of Traffic During Construction. All traffic control devices shall conform to the current standards found in the Manual of Uniform Traffic Control Devices for Streets and Highways. The provisions of this item and this section shall not in any way relieve the Contractor of any of his legal responsibilities or liabilities for the safety of the public.

CONSTRUCTION STAKING

Contractor shall be responsible for the layout of the project per the lines and grades indicated on the plans.

ITEM 202 – CLEARING AND GRUBBING:

Clear grub, remove and dispose of all vegetation, building and foundations not removed by others, and debris within designated limits inside the right-of-way and easement areas. Do not remove objects designated to remain or to be removed according to other provisions of the Contract. Also, protect from injury or defacement all vegetation and objects designated to remain. All planters and plant materials other than grass and trees marked for removal shall be salvaged and set aside in a location conveniently accessed by the property owner. During final restoration it shall be the Contractor's responsibility to replace the planters and plant materials to match the existing locations and dimensions. This item shall also include all labor, equipment and personnel to remove, salvage and reinstall all signs, mailboxes and fences as per the plan and to remove all trees as indicated on the plans. Portions of the fence that are damaged during work operations, or are in a condition such that they cannot be reused, shall be replaced with new, like material at no additional cost to the Owner. Whenever work is not taking place, all fence areas that have been removed shall be provided with temporary fencing to close off the opening until such time as the fence can be replaced with permanent materials. All work shall be in accordance with Kentucky Transportation Cabinet Standard Specifications Section 202. Payment shall be one lump sum.

ITEMS 202 / 203 REMOVALS

When a bid item is to include the cost of removal of a classified or unclassified material, it shall be the responsibility of the Contractor to verify in the field the type of material and the thickness of the material to be removed prior to submitting his bid. No additional allowance will be due the Contractor for added expense of removals due to unknown materials or thickness.

ITEMS 202 / 203 - DEBRIS REMOVAL

The Contractor will be responsible for removal of all construction debris from the site. All debris shall be disposed of in a proper manner and shall be as directed by all applicable local, state, or federal regulations.

ITEM SPL - YARD RESTORATION (4" TOPSOIL, SEED & MULCH)

The Contractor shall provide all labor, materials, tools, and equipment required to grade, fertilize, seed, and mulch in good, workmanlike manner the areas where shown on the plans or where directed by the Engineer and as specified herein.

A. Materials

1. Topsoil – Topsoil shall be per ASTM D5268 with a pH range of 5.5 to 7. Topsoil shall not contain more than 40% clay in that portion passing a No.10 sieve, shall contain not less than 5% or more than 20% organic matter as determined by loss on ignition of samples oven dried to constant weight at 212 degrees Fahrenheit, and shall be free of rock and other foreign material greater than 1 inch in any dimension and other extraneous materials harmful to plant growth.

2. Fertilizer –

   a. Fertilizer shall be lawn or turf grade 12-12-12

   b. Agricultural ground limestone when used shall have a minimum total neutralizing power of 90 and at least 40 percent passing a No. 100 sieve, and at least 95% passing a No. 8 sieve.

3. Seed – All areas to be seeded shall be seeded with the following mixture:

   By:

Weight	Name of Grass	Purity	Germination
40%	Fine Lawn Turf-Type Fescue	95%	90%
40%	Creeping Red Fescue (Festuca rubra)	95%	90%
20%	Annual Ryegrass (Lolium multiflorm)	95%	90%

   Weed seed content not over 0.25 percent and free of noxious weeds.

4. Mulch – Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats or barley.

5. Asphalt Emulsion – ASTM D977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

B. Installation

1. Preparation of Seed Bed

   a. Topsoil - If suitable topsoil is available as part of the excavated material it shall be removed, stored and used to backfill the top 4 inches of the excavation. If sufficient material is not available on site it shall be imported on site at no additional cost to the Owner. All grass, weeds, roots, sticks, stones, and other debris are to be removed and the topsoil carefully brought to the finish grade by **hand raking.** The topsoil shall be sufficiently compacted, by tracking in the material, to prevent significant settlement. Promptly and thoroughly remove topsoil and other materials dropped on pavement surfaces before being compacted by traffic. Before any fertilizer or seed is placed the topsoil shall be inspected and approved by the Engineer.

2. Fertilizing - Fertilizing shall be uniformly applied to all areas to be seeded at the rate of 1 pound per 100 square. The fertilizer shall be thoroughly disked, harrowed or raked into the soil to a depth of not less than 2 inches. Immediately before sowing the seed, the Contractor shall rework the surface until it is a fine, pulverized, smooth seed bed, varying not more than 1 inch in 10 feet. A second application of fertilizer shall be applied at the same rate once the grass has been established or within 6 weeks of seeding.

3. Seeding - Immediately after the preparation and fertilization of the seed bed the Engineer shall inspect and approve the site prior to seeding. The seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rate of 3 to 4 pounds per 1000 square feet. Seed shall be sown dry or hydraulically. After sowing, the area shall be raked, dragged, or otherwise treated to cover the seed to a depth of approximately 1/4 inch.

4. Mulching - Within 24 hours after any given area is seeded, mulching material shall be evenly placed over all seeded areas at the rate of approximately 2 tons per acre, when seeding is performed between the dates of March 15 and October 15, and at the approximate rate of 3 tons per acre when seeding is performed between the dates of October 15 and March 15 of the succeeding year. Mulching material shall be removed once a good turf has been established.

   a. Emulsion - Mulching materials shall be kept in place with asphalt emulsion applied at a minimum rate of 10 to 13 gallons per 1000 square feet of mulch or by methods as approved or may be otherwise required to prevent displacement of material. Mulching which is displaced shall be replaced at once but only after the seeding or other work which preceded the mulching and which work was damaged as a result of displacement of mulching material has been acceptably repaired.

5. Maintenance – Contractor shall water, mow, weed and otherwise maintain all seeded areas as necessary to secure a good turf. Settled areas shall be filled, graded, and re-seeded. Seeded areas shall be free of weeds and other debris. The Contractor shall be responsible for the condition of the seeded areas for a period of 1 year from the date of

Final Acceptance. A satisfactory lawn shall consist of a healthy uniform, close stand of grass, free of weeds, rocks and surface irregularities, with coverage exceeding 95% over any 10 square feet, and bare spots not exceeding 2 by 2 inches.

ITEM 212 / 213 - EROSION CONTROL AND WATER POLLUTION CONTROL

The Contractor shall take extreme care to prevent unnecessary erosion, water pollution and siltation at all points of the project. Temporary seeding and mulching, Dandy Curb Bags, straw bales, slope drains, etc., shall be used as necessary or as directed by the Engineer. The cost of all temporary erosion control measures shall be included in the lump sum bid item.

FULL-DEPTH PAVEMENT SAWING

All existing pavement to be widened and/or removed shall be sawed full depth at the limits of removal, using a diamond saw blade to provide a uniform edge and prevent damage to pavement that is to remain in place. The cost of the sawing shall be incidental to the contract.

ITEM 402/403 – ASPHALT DRIVEWAY REPLACEMENT

The unit price bid for Asphalt Driveway Replacement shall include all labor, material, and equipment necessary for the removal and disposal of the existing asphalt driveway and the placement of the new asphalt pavement.

In the event the apron has settled, a stone fill leveling course shall be added to bring the apron back to the grade of the existing sidewalk or curb, and shall be incidental to the apron replacement item.

The contractor must notify the affected residents or businesses in writing at least 48-hours prior to closing driveways. If the residents and businesses have not been notified 48-hours in advance of the anticipated drive closure, the contractor will be prohibited from making these closures until such time as the proper advance notification is made.

The areas indicated on the plans may not be the final replacement areas and are subject to adjustments in the field by the Engineer.

Cost shall include sawcut and removal of existing pavement, and any additional excavation or embankment under the existing pavement, or outside of existing driveways, to get to the proposed subgrade elevation. Subgrade shall be compacted per Section 207 and shall be incidental to this item. Any existing curb on the driveway shall be reconstructed in a similar manner to match the existing curb and shall be considered incidental to this item.

ITEMS 505 – SIDEWALK AND/OR DRIVEWAY APRON FINISH

The finish applied to the Portland Cement concrete surface used as a sidewalk or driveway apron shall be a broom finish. All joints and outside edges of the pavement shall be tooled with an edger or joint tool after brooming the final finish. Final finish, joints, and edges shall be subject to the approval of the Engineer.

It is the Contractor's responsibility to protect the new surface until it cures.

ITEM 505 - WALKS, CURB RAMPS, AND STEPS

The unit price bid for Item 505 shall include all labor, material, and equipment necessary for the placement of the new concrete walk. The walk shall be four (4) inches in thickness, except in walk areas through the driveway aprons and curb ramps, where the thickness shall be increased to six (6) inches.

Preformed expansion joint material, 1/2-inch thick, shall be placed at maximum 40 feet spacing and / or adjacent to all existing remaining walk or structures.

Curb ramp construction shall conform to National ADA Standards. Curb ramp standard dimensions will be adjusted as required by the Engineer in the field to provide adequate access for handicapped persons in the vicinity of poles or other fixed objects behind the curb. Curb ramps in new concrete walks will be measured as the number of each complete and shall include the cost of any additional materials, grading, forming and finishing not included in the concrete walk item (separate), which is measured through the curb ramp area.

It is the Contractor's responsibility to protect the new surface until it cures.

ITEM SPL - CONCRETE DRIVEWAY REPLACEMENT

The unit price bid for Item SPL shall include all labor, material, and equipment necessary for the removal and disposal of the existing concrete or asphalt driveway, excavation to proposed subgrade, subgrade compaction and the placement of the new concrete driveway.

In the event the driveway has settled, a stone fill leveling course shall be added to bring the driveway back to the grade of the existing sidewalk or curb, and shall be incidental to the driveway replacement item.

The finish applied to the concrete driveways shall be a light broom finish. All joints and outside edges of the pavement shall be tooled with an edger or joint tool after brooming or hand finishing of the final finish.

The Contractor must notify the affected residents in writing at least 48-hours prior to closing driveways. If the residents and businesses have not been notified 48-hours in advance of the anticipated drive closure, the contractor will be prohibited from making these closures until such time as the proper advance notification is made.

The maximum time period for driveway closure shall be ninety-six (96) hours. The contractor shall place new driveways twenty-four (24) hours after removal.

The contractor shall keep driveways closed for a seventy-two (72) hour period after concrete placement to permit the curing of concrete curbs and driveways.

No concrete removal may take place on a Thursday or Friday unless the contractor will pour concrete on a Saturday.

It is the Contractor's responsibility to protect the new concrete surface until it cures.

All existing driveway aprons shall be removed and replaced with concrete, unless noted otherwise.

The areas indicated on the plans may not be the final replacement areas and are subject to adjustments in the field by the Engineer.

Driveways shall be constructed in accordance with the Kenton County Subdivision regulations.

Cost shall include sawcut and removal of existing pavement, and any additional excavation or embankment under the existing pavement, or outside of existing driveways, to get to the proposed subgrade elevation. Subgrade shall be compacted per Section 207 and shall be incidental to this item. Any existing curb on the driveway shall be reconstructed in a similar manner to match the existing curb and shall be considered incidental to this item.

ITEM 601 - CONCRETE - GENERAL

All concrete for roadway paving, curbs, sidewalks, drive aprons, and steps shall be in accordance with the Kenton County Subdivision Regulations.

TESTING

In addition to material testing by the supplier, on-site material will be required to insure the work meets the specifications established as part of this project. The Owner shall bear the cost of all testing. The Contractor shall provide all required materials, labor, apparatus, services and facilities in connection therewith.
All testing shall be done in the presence of the Engineer by an approved testing laboratory and one copy of the test shall be sent directly to him.

When questions arise as to whether the requirements of the Contract have been fulfilled, the Owner shall engage an independent testing laboratory to perform any tests necessary to establish the acceptability of the work.

Should such additional tests show in the judgment of the Engineer, the work or materials to be defective or otherwise not meeting the requirements of the Contract, the Contractor shall, immediately upon notification by the Engineer, remove, replace or reconstruct same, as the case

may require and shall if directed by the Engineer, make such further tests as may be necessary to determine fulfillment of the Contract requirements. The cost of all re-tests shall be deducted from the Contractor's fee for said work.

All tests shall be made under the supervision and direction of the Engineer except those required by a public authority shall be under the supervision and direction of such authority.

UTILITY ADJUSTMENTS

Utility adjustments including but not limited to water meter valves, sanitary manholes, storm sewer manholes, catch basins, gas valves, telephone manholes and gas meters shall be paid for on a per each basis. Adjustments to be done in accordance with the requirements of the appropriate utility company.

ITEM 701 – GRADING AT INLETS AND OUTFALLS OF PROPOSED CONDUITS

The cost of the necessary reconstruction and/or regrading of swales or disturbed areas at the inlets and outfalls of all proposed conduits shall be included in the price bid for the pertinent conduit and inlet items.

EXISTING PIPE

The location, size, type and depth of all existing pipes are shown as nearly exact as available information will permit. The Engineer will not be responsible for any variations found during construction.

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the existing structure, both as to line and grade, before he starts to lay the proposed conduit, in order to assure compatibility of line and grade of the proposed conduit.

Payment for all operation described above shall be included in the unit price bid for the pertinent conduit item.

ITEM 701 - REVIEW OF DRAINAGE FACILITIES

Before any work is started on the project and again before final acceptance by the Owner, the Contractor, with the Engineer, shall make an inspection of the existing sewers within the work limits, which are to remain in service and which may be affected by the work. The condition of the existing conduits and their appurtenances shall be determined from field observations. Written records of the inspection and/or photographic documentation shall be kept by the Engineer.

All existing sewers inspected initially by the above-mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer. All existing and/or new conduits, inlets, catch basins, and manholes

constructed and/or cleaned as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the Owner. Payment for all operations described above shall be included in the unit prices bid for the pertinent item.

ITEM SPL - TRENCH FOR SEWER CONSTRUCTION

Per Sanitation District No. 1 Specifications Section 02630.

Trench excavation for sewer construction shall be adequately maintained and protected with barricades at all times.

Placement of proposed sewer pipe and backfill material shall follow as closely as possible behind excavation operations. The length of sewer trench, which is open at any one time, shall be held to a minimum and shall, at all times, be subject to the approval of the Engineer.

ITEM SPL - STORM SEWER PIPE MATERIAL

As per Sanitation District No. 1 Specifications Section 02630.

ITEM SPL – CONDUIT, DRAINAGE AND UTILITY ITEMS

Unless otherwise specified on the plans, the unit price bid for the pertinent conduit, drainage and/or utility item shall include the cost of all necessary appurtenances, connections, fittings, plugs, tees, collars, etc.

Unless otherwise noted on the plans, the unit price for the pertinent conduit, drainage and/or utility item is to include the costs involved in the excavation of the trench in unclassified material, the supplying and placing of the required bedding material and the backfilling of the trench with the specified material to the appropriate subgrade elevations.

Any additional fill required due to the relocation of storm sewer shall be included in the storm sewer unit price. All backfill in pavement areas shall consist of flowable fill.

ITEM 701 - PIPE CUT-OFFS

When bell-and-spigot pipe is used, any necessary pipe cut-offs shall be made at the spigot end of the length of pipe adjacent to the end length. When tongue-and-groove pipe is used, the length of pipe next to the end length shall be cut and a butt joint formed with a collar.

ITEM SPL - PIPE BEDDING AND BACKFILL

Pipe Bedding

As per Sanitation District No. 1 Specifications Section 02220.

Low-Strength Mortar Backfill Material

As per Sanitation District No. 1 Specifications Section 02220.

Excavation Material for Compacted Backfill

As per Sanitation District No. 1 Specifications Section 02220.

ITEM 701 REMOVAL OF WATER

The Contractor shall keep all excavations free from water while the excavation for or the construction of conduits is in progress; shall build all dams, bulkheads, underdrains, sumps, and other work necessary for this purpose; and shall provide and keep the excavation dry and free from water at all times.

The Contractor shall provide for the disposal of all water removed from the excavations in such manner as to prevent injury to the public, the public health, public or private property, or to any portion of the work completed or in progress, or the surface of the streets, and to prevent any inconvenience to the public. No ground and/or surface water shall be diverted into existing sanitary sewers.

No conduits shall be laid or built in water, and waste shall not be allowed to flow over to rise upon any concrete, brick masonry or conduit until the work has been observed and has set for at least twenty-four (24) hours.

The flow of water in all existing sewers, drains, gutters, or watercourses encountered during the construction period shall be adequately maintained by the Contractor at his expense.

ITEM 610 / 710 - CONDUIT END TREATMENT

Immediately after placement of any conduits, the Contractor shall construct the end treatments required by the plans at both the outlet and inlet ends. This shall include headwalls, concrete riprap, rock channel protection, sodding, etc. The cost of the necessary reconstruction and/or regrading of swales or disturbed areas at the inlets and outfalls of all proposed conduits shall be included in the price bid for the pertinent conduit and inlet items.

ITEM SPL - STORM SEWER, MANHOLES, INLETS, CATCH BASINS AND HEADWALLS

Storm sewer manholes, inlets and catch basins shall be constructed as per the details on the construction drawings and conforming to the requirements of SD1 Specifications Section 02630. All castings for manholes, catch basins and inlets shall conform to those specified in the standard construction drawings. Grated inlet tops shall be placed as specified on the plans. Tops of casting elevations are subject to final adjustments as approved by the Engineer. All castings used shall be

subject to the final approval of the Engineer. Payment for these items shall include connection to proposed or existing storm sewer conduit.

Any additional backfill required due to the removal of an existing storm structure and relocation of the proposed storm structure shall be incidental to the manhole, inlet or catch basin. All backfill in pavement areas shall consist of flowable fill.

SHORING AND TRENCH BOX

Trenches and excavations for appurtenances shall be adequately shored and braced or a trench box utilized whenever the trenches and excavations cannot be opened up to a sufficient width to maintain natural soil stability and sloped per current OSHA regulations. All shoring shall meet safety codes in effect at the time of the work; and, if none are in effect, they shall meet the requirements of Employers Mutual, Factory Mutual, Associated General Contractors safety manuals or OSHA guidelines.

The Contractor is fully responsible at all times for the safety of their excavators and total compliance with OSHA regulations.

Shoring and sheeting, when used, that does not extend below the top of the sewer pipes may be removed at the Contractor's option after the trench backfill has been placed and compacted to a point one foot above the top of the pipes. Following removal of the shoring and sheeting, the space left shall be filled immediately with backfill material and compacted.

Shoring and sheeting that extends below the top of the sewer pipes shall be left in place below a point one foot above the top of the pipes and not be disturbed. The Contractor may remove the portion of shoring and sheeting above this point at his option.

When shoring and sheeting is not removed, the portion to a point two feet (2′) below finished grade shall be removed. Bracing shall not be removed until after the trench backfill has been placed and compacted to a point one foot (1′) above the top of the sewer pipes.

ITEM SPL - SHEETING AND SHORING

The Contractor shall furnish, put in place, and maintain such piling, sheeting, bracing, etc., as is required by the State of Kentucky. The Contractor shall furnish, put in place, and maintain and remove such sheeting, shoring, planking and bracing as may be required to support the sides of the excavations and to prevent any movement which could in any way injure the work, human life, or adjacent structures and property, obstruct surface drainage channels or waterways, or otherwise injure or delay the work. If required at any time by the Engineer, the Contractor shall furnish and install such additional sheeting, shoring and bracing as may be necessary to protect the work, but compliance with such orders or failure on the part of the Engineer to give such orders shall in no case release the Contractor from liability for any damages or injuries caused by weak or insufficient sheeting, shoring and bracing, nor from his responsibility to protect the work or adjacent property.

Except when ordered left in place, all wood sheeting above the top of the pipe, steel sheet piling, braces, shorer, walers or stringers, shall not be withdrawn until the backfill is practically complete. As the backfill progresses to the elevation of a set of walers and braces, such bracing shall be removed. All sheeting and bracing specified, shown on the plans, or directed by the Engineer to be left in place shall not be removed. All sheeting left in place shall be cut off at least two (2) feet below final finish grade. During the removal of sheeting, care must be taken to prevent movement of the sides of the excavation. All voids left by the withdrawal of sheeting shall immediately be carefully refilled by ramming with tools adapted to the purpose, pneumatic or other approved type, or by flushing sand into the voids.

Whenever the Engineer, in writing, orders any type sheeting, shoring, bracing or foundation material left in place, or when so shown on the plans or specified, the Contractor will be paid for the actual amount so left in place at prices stipulated for the applicable items. Sheeting, shoring and bracing left in place by the Contractor for his own convenience will not be paid for under any item.

ITEM SPL – SEGMENTAL BLOCK RETAINING WALL

1 GENERAL

A) Description

The work includes furnishing and constructing a segmental concrete retaining wall (SRW) system, including excavation, leveling pad, segmental retaining wall units, soil reinforcement (if required), unit drainage fill, reinforced backfill, and incidental materials required for SRW construction to the lines and grades shown on the construction drawings and specified herein.

B) Reference Standards

i) American Society for Testing and Materials (ASTM)

(a) ASTM C-1372 Specification for Segmental Retaining Wall Units
(b) ASTM D-422 Particle Size Analysis
(c) ASTM D-698 Laboratory Compaction Characteristics of Soil -Standard Effort
(d) ASTM D-4318 Liquid Limit, Plastic Limit and Plasticity Index of Soils
(e) ASTM D-4595 Tensile Properties of Geotextiles - Wide Width Strip
(f) ASTM D-5262 Unconfined Tension Creep Behavior of Geosynthetics
(g) ASTM D-3034 Polyvinyl Chloride Pipe (PVC)
(h) ASTM D-1248 Corrugated Plastic Pipe
(i) ASTM D-4475 Horizontal Shear Strength of Pultruded Reinforced Plastic Rods

ii) Geosynthetic Research Institute (GRI)

(a) GRI-GG4 Determination of Long Term Design Strength of Geogrids
(b) GRI-GG5 Determination of Geogrid (soil) Pullout

iii) National Concrete Masonry Association (NCMA)
(a) NCMA SRWU-1 Test Method for Determining Connection Strength of SRW
(b) NCMA SRWU-2 Test Method for Determining Shear Strength of SRW

iv) American Association of State Highway and Transportation Officials (AASHTO)
(a) Standard Specifications for Highway Bridges, 17th Edition, 2002

C) Design

i) Provide a complete wall design based on the wall location and geometry shown on the construction plans. Prepare designs in accordance with the requirements of this specification. Submit wall designs to the engineer according to section (D).

ii) Design Parameters –The design submittal shall clearly state the soil parameters used. Provide to the engineer copies of all subsurface investigation reports, soil borings, laboratory test results, etc. in support of the selected parameters. Subsurface investigation reports shall be prepared by a registered professional geotechnical engineer with experience in the design of geogrid soil reinforced segmental retaining walls.

Alternately, the contractor shall employ the services of a registered professional geotechnical engineer to examine the soil conditions at the wall location during construction, and prepare a report indicating whether or not the soils provide the assumed minimum design parameters. If the examination reveals that the soil properties do not meet or exceed those assumed in the design, then the contractor shall immediately contact the wall designer and necessary adjustments shall be made to the wall design. Copies of the geotechnical engineer's report(s) and revised wall designs shall be submitted to the engineer for review prior to resuming wall construction.

Any necessary revisions to the wall design and resulting changes to the wall construction due to the above shall be made at no additional cost to the owner.

iii) Design Method –Design of SRW's using geosynthetic reinforcement shall be in accordance with the NCMA Design Guidelines for Segmental Walls, AASHTO, or NCMA utilizing AASHTO earth pressure and stability design criteria,(except where otherwise indicated on the plans or in these specifications). All designs shall conform to the minimum safety factors in this Specification. Design submittals not meeting this design criteria or technical/administrative criteria specified will be rejected in their entirety until complete compliance is achieved.

iv) Design Requirements - Unless otherwise indicated below, the SRW design shall be performed in strict compliance with Section C(iv) of this Specification and the following clarifications of the Owner's intent:

Internal Stability	Minimum Factor of Safety
Pullout (Peak)	1.5
Facing Shear (Peak/serviceability)	1.5/NA
Facing Connection (Peak/serviceability)	1.5/NA
Uncertainties	1.5

External Stability	
Base Sliding (static)	1.5
Overturning	2.0
Bearing	2.0
Global	1.3

v) In addition, to further clarify the Owner's intent, the design shall:
   (a) Address hydrostatic, seismic, rapid drawdown, surcharge and backslope loading as may be appropriate. **Hydrostatic pressure shall be included in the design below the level of the perforated drain pipe.**
   (b) **Minimum live load surcharge of 100 psf shall be applied at the top of the wall**.
   (c) Provide a minimum reinforcement length of 60% the total height of the wall for each layer or longer as required by calculation.
   (d) Provide continuous, 100% geosynthetic coverage at each reinforcement layer (no gaps), Geogrid may cut or trimmed around obstructions such as fence posts, catch basins, storm pipe penetrations where the pipe is oriented approximately perpendicular to the wall face, etc. Follow geogrid and/or wall manufacturers recommendations for cutting and trimming.
   (e) Use a maximum spacing between vertically adjacent reinforcing layers of no more than 2 times the actual (not nominal) SRW unit depth (face to tail).
   (f) Only the weight of the mass vertically over the plane of sliding shall be included in the resisting forces for sliding and overturning.
   (g) Hinge height shall only apply to wall systems with $\geq 10°$ of batter.

D) Submittals

i) Submit to the Engineer certification stating that the SRW contractor has a minimum of 10,000 square feet of experience with the proposed SRW system. Contact names and telephone numbers shall be listed for projects used to document the 10,000 square feet.

ii) Provide to the Engineer a minimum of 14 days prior to the anticipated start date for the SRW a submittal package including the following:

- A set of detailed SRW design plans sealed by a registered professional engineer licensed in the state of the project. The SRW plans shall include typical wall sections showing standard and cap unit placement, wall batter, leveling pad type and dimensions, reinforced and drainage backfill zones indicating type of soil to be used, location/size/type of perforated drainage tile, filter fabric.
- Product literature indicating specifically the SRW units and soil reinforcement to be used on the project including color, face style and texture. See plans for specified color, face style, and texture. If none is specified, the contractor may choose at his discretion subject to approval by the engineer.
- Documentation for the SRW units and soil reinforcement demonstrating compliance with the requirements of this specification including but not limited to SRW compressive strength and absorption; SRW/soil reinforcement connection and shear; and reinforcement strength.
- Manufacturer's certification that the SRW units and soil reinforcement meet the requirements of this specification.
- SRW system engineer's certification that the design complies in all respects with this specification.

iii) Contractor's certification that:

- The specific SRW system proposed for use on this project has been successfully used on a minimum of 5 similar projects and the system has been successfully installed on a minimum of 500,000 square feet of retaining walls.

E) Delivery, Storage and Handling

i) The contractor shall check all materials upon delivery to assure that the proper type, grade, color and material certification have been received. Contractor shall protect materials from damage due to jobsite conditions and in accordance with the manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

2 Products

A) Definitions

i) Segmental Retaining Wall Units - a modular concrete facing unit machine made from Portland cement, water and mineral aggregates.

ii) Soil Reinforcement - geosynthetic or steel reinforcement formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock or earth and function as reinforcement. Soil reinforcement shall be specifically manufactured for soil reinforcement.

iii) Unit Drainage Fill - drainage aggregate that is placed within and behind the segmental concrete units.

iv) Reinforced Backfill - compacted soil that is within the reinforced soil volume as shown on the plans.

v) Foundation Soil – compacted, imported or in-situ soil beneath entire wall.

vi) Retained Soil – compacted, imported or in-situ soil behind reinforced zone of the retaining wall.

vii) Base Leveling Pad - level compacted gravel or unreinforced concrete pad upon which the first course of segmental retaining wall units is placed.

B) Segmental Retaining Wall Units shall meet the following requirements:

i) Manufactured in accordance with ASTM C1372 with a minimum 28-day compressive strength of 3000 psi (21 MPa) (4000 psi (28 MPa) for steel reinforced systems) and a maximum moisture absorption of 8%. SRW units finish and appearance shall be per ASTM C1372. Exposed faces shall be free of chips, cracks or other imperfections when viewed from a distance of 20 feet (6 m) under diffused lighting. Color shall be concrete gray and the face finish shall be a sculptured rock face in an angular multi-planar configuration unless shown otherwise on the Plans.

C) Soil Reinforcement

i) Geosynthetic Reinforcement - shall be evaluated in accordance with NCMA Section 3.5 with the following additions and clarifications.

(a) The minimum RF_{ID} shall be ≥ 1.05.

(b) The minimum RF_D shall be ≥ 1.10.

(c) The minimum FS_{UNC} shall be ≥ 1.5.

(d) Geogrids not providing a minimum junction strength of 40 lbs per foot (0.6 kN/m) per GRI: GG2 and all geotextiles shall have a minimum mass of 8 oz/sy (1.4 kg/m2) and meet the strength requirements of AASHTO M-288-96 Class 1 geotextile.

(e) Geogrids not providing a minimum stiffness (flexural rigidity) of 30,000 mg-cm per ASTM D1388 and all geotextiles shall be staked during placement per Section 3.1.B.

(f) PET geosynthetics shall be coated with a suitable coating immutably bonded to the PET bundles. The coating shall contain a minimum of 1-% carbon black measured per ASTM 4218. Geogrids not meeting this requirement and all geotextiles shall use a minimum $RF_D = 1.6$.

(g) PET geosynthetics shall possess a Molecular Weight ≥ 25,000 g/m per GRI: GG8 and a carboxyl end group number ≤ 30 per GRI: GG7. PET geosynthetics not meeting this criteria shall use a minimum $RF_D = 2.0$.

(h) HDPE geogrids shall have a melt flow index value≥ 0.88. HDPE geogrids not meeting this criteria shall use a minimum $RF_D = 2.0$.

(i) Manufacturing Quality Control - The geosynthetic manufacturer shall have a quality control program that includes QC testing no less frequently than each 400,000 sf (40,000 m3) of production. The testing, as a minimum, shall include Tensile Strength per ASTM D4595.

ii) Steel Reinforcement - shall meet the requirements of and possess the minimum strength and durability at the end of the 75-year design life per the AASHTO Standard Specifications for Highway Bridges. Allowable tensile stress shall not exceed $0.55F_y$ at the end of the design service life.

D) Unit Drainage Fill

Shall consist of clean 1" (25 mm) minus crushed stone or crushed gravel meeting the following gradation per ASTM D422. Geotextile shall not be substituted for unit drainage fill.

Sieve Size	Percent Passing
1 inch (25 mm)	100
3/4 inch (19 mm)	75-100
No. 4 (4.75 mm)	0-10
No. 50 (300 um)	0-5

E) Reinforced Backfill

i) Shall consist of soil with

(a) Less than 35% passing the No. 200 sieve per ASTM D422 with a maximum size of 3/4 inches (19 mm) (4 inch (100 mm) maximum for steel reinforced systems)

(b) A plasticity index less than 10 per ASTM D4318

(c) An effective internal angle of friction > 30° per ASTM D2166 or D3080 at the compaction standard

(d) Less than 0.5% organic material

(e) Material can be site-excavated soils where the above requirements can be met. Unsuitable soils for backfill including ML, CL, MH, CH, OH or Pt shall not be used in the backfill or in the reinforced soil mass.

ii) Use of an effective friction angle greater than 30 degrees for design shall be verified by appropriate testing submitted to and approved by the owner's engineer prior to construction.

iii) Backfill reinforced with geosynthetic shall have a pH in the range of 3 to 9 per ASTM G51.

iv) Backfill reinforced with steel reinforcement shall have a pH in the range of 5 to 10 per ASTM G51, minimum resistivity of 3000 ohm-cm at 100% saturation per ASTM G57 and free of sulfates > 200 ppm or chlorides > 100 ppm. If the resistivity is ≥ 5000 ohm-cm, the chloride and sulphate requirements are waived. Subject to approval, the owner's engineer may allow slightly wider ranges of pH for higher resistivities.

F) Base Leveling Pad
Base leveling pad shall be constructed of dense graded crushed stone or crushed gravel. A concrete leveling pad consisting of lean unreinforced concrete may be used at the wall contractor's option.

3 CONSTRUCTION

A) Construction and construction tolerances shall be in accordance with NCMA Section 6 and 7 or AASHTO Section 7 with the following additions or clarifications.

i) A minimum of 1 cubic foot of unit drainage fill shall be used for each square foot of wall face and shall be placed within the cores, between and behind the SRW units and shall extend back from the face of the wall a minimum of 1 foot. Geotextile is not an acceptable substitute for unit drainage fill unless the entire reinforced backfill zone meets the requirements of AASHTO Section 7.3.6.3 and connection strength requirements can be met without unit drainage fill.

ii) Reinforcement not meeting the minimum stiffness requirement of Section 2.3.A (5) or wider than 12 feet (4 m) shall be staked at the corners and on 12 foot (4 m) centers along the roll edges to prevent wrinkling or other distortion of the reinforcement during backfill placement.

B) Field Quality Control and Assurance

i) The Contractor shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.

ii) As a minimum, quality assurance testing shall include foundation soil inspection, soil and backfill testing, and verification of design parameters. Refer to Section 1.3 (B) above for additional information.

iii) Quality control testing and construction inspection services shall only be performed by independent, qualified and experienced registered professional geotechnical

engineers or technicians under the direct supervision of registered professional geotechnical engineers. The quality control testing, as a minimum, shall include:

(a) Field density testing
- Subgrade: one test for every 2500 square feet of subgrade.
- Reinforced and Unit Drainage Backfill: one test for every 2500 square feet per lift with a minimum of two tests for every lift.

(b) Laboratory Moisture Density - minimum one test per soil type.

(c) Gradation Analysis
- Unit Drainage Fill: one test per 500 CY
- Backfill: one test per 1000 CY

C) Observation of construction for general compliance with design drawings and specifications shall be provided by the Owner. This does not relieve the Contractor of the responsibility to construct the wall in accordance with the plans and specifications.

4 MEASUREMENT AND PAYMENT

A) Measurement - The unit of measurement for furnishing and fabricating the SRW shall be the vertical square foot of wall surface from the top of the leveling pad to the top of the wall or wall coping.

B) Payment - The accepted quantities of SRW will be paid at the contract unit price, which shall be full compensation for all labor, equipment and materials required for the design, supply, and installation of the SRW including (as apppilicable):

i) Excavation
ii) face units
iii) caps
iv) leveling pad
v) unit drainage fill
vi) soil reinforcement
vii) reinforced backfill
viii) drainage pipe
ix) soil examination
x) all other incidentals required but not specifically mentioned.

ITEM SPL – SCHOOL FLASHER POLE

Payment for this item shall be per each and include installation of the proposed base, pole and flasher equipment along with the necessary wiring and connections. Flasher pole and solar flasher to be provided by the Kentucky Transportation Cabinet. Contractor to coordinate order and delivery of materials from the Kentucky State warehouse in Frankfort, Kentucky. Contractor or subcontractor installing the pole and flasher shall be pre-qualified with the Kentucky Transportation Cabinet.

ITEM SPL – UNIT PAVERS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Brick pavers set in bituminous setting bed – traffic rated.

1.3 SUBMITTALS

A. Product Data: For the following:

   1. Brick pavers.
   2. Bituminous setting materials.

B. Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of unit paver indicated.

   1. Include similar Samples of material for joints and accessories involving color selection.

C. Samples for Verification: Full-size units of each type of unit paver indicated; in sets for each color, texture, and pattern specified, showing the full rnage of variations expected in these characteristics.

1. Provide Samples with joints grouted and cured, showing the full range of colors to be expected in the completed Work.

D. Qualification Data: For firms and person specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified. Delete below if requirement for preconstruction compatibility and adhesion testing is deleted or if latex additive is not used.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed unit paver installations similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Source Limitations: Obtain each type of unit paver, joint material, and setting material from one source with resources to provide materials and products of consistent quality in appearance and physical properties.

C. Mockups: Before installing unit pavers, build mockups for each form and pattern of unit pavers required to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for the completed Work, including same base construction, special features for expansion joints, and contiguous work as indicated:

1. Build mockups in the location and of the size indicated, or if not indicated, as directed by Owner's Representative.
2. Notify Owner's Representative seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Owner's Representative approval of mockups before starting unit paver installation.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed.
7. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Do not change source or brands of brick, mortar, or grout material during the course of the work.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver mortar, grout and additive materials in manufacturer's unopened and undamaged containers with labels intact and legible. Store off the ground and protect from weather damage and deterioration.

B. Protect aggregate during storage and construction against soiling or contamination from earth and other materials.

1. Store loose granular materials in a well drained area on a solid surface to prevent mixing with foreign materials.

C. Protect unit pavers during shipping, storage and construction against damage, chipping, and soiling or contamination from earth and other materials.

1. Cover pavers with plastic or use other packaging materials that will prevent rust marks from steel strapping.

D. Store asphalt cement and other bituminous materials in tightly closed containers.

1.6 PROJECT CONDITIONS

A. Establish and maintain required levels and grade elevations. Review installation procedures and coordinate paving work with other work affected by the unit paving work.

B. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

C. Weather Limitations for Bituminous Setting Bed: Comply with the following requirements:

1. Apply asphalt adhesive when ambient temperature is above 50 deg. F and when temperature has not been below 35 deg. F for 12 hours immediately before application. Do not apply when base is wet or contains excess moisture.
2. Install bituminous setting bed only when atmospheric temperature is above 40 deg. F and when base is dry.

D. Protect partially completed brick paving against weather damage when work is not in progress.

E. Provide temporary barricades and warning lights as required for protection of project work and public safety.

F. Protect adjacent work from damage, soiling and staining during paving operations.

PART 2 – PRODUCTS

2.1 SIZES, COLORS, TEXTURES

A. Clay pavers for heavy vehicular use. Basis of design shall be one of the following:

- Manufacturer: Pinehall Brick. Autumn blend full range color, 4" by 8" with English Edge. Place in a Herringbone pattern parallel and perpendicular to the edges.
- Manufacturer: Belden Brick. City Line Pavers, 4" by 8" with chamfered edge. Regimental Full Range placed in a herringbone pattern parallel and perpendicular to the edges.
- Or approved equal.

2.2 BITUMINOUS SETTING-BED MATERIALS

A Primer for Base: ASTM D 2028, cutback asphalt, grade as recommended by unit paver manufacturer.

B. Fine Aggregate for Setting Bed: ASTM D 1073, No. 2 or No. 3.

C. Asphalt Cement: ASTM D 3381, Viscosity Grade AC-10 or AC-20.

D. Neoprene-Modified Asphalt Adhesive: Paving manufacturer's standard adhesive consisting of oxidized asphalt combined with 2 percent neoprene and 10 percent long-fibered mineral fibers containing no asbestos.

1. Sand for Joints: Polymeric blend – see L Series drawings for details.

2.3 BITUMINOUS SETTING-BED MIX

A. Mix bituminous setting-bet materials at an asphalt plant in approximate proportion, by weight, or 7 percent asphalt cement to 93 percent fine aggregate, unless otherwise indicated. Heat mixture to 300 deg. F.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

B. Examine areas indicated to receive paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION, GENERAL

A. Do not use unit pavers with chips, cracks, voids, discoloration, and other defects that might be visible or cause staining in finished work.

B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.

C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable. Maintain half paver minimum.

D. Joint Pattern: As indicated.

E. Tolerances: Do not exceed 1/32 – inch unit-to-unit offset from flush (lippage) nor 1/8 – inch in 10 feet from level, or indicated slope, for finished surface of paving.

3.4 BITUMINOUS SETTING-BED APPLICATIONS

A. Apply primer to concrete slab or binder course immediately before placing setting bed.

B. Prepare for setting-bed placement by locating ¾-inch deep control bars approximately 11 feet apart and parallel to one another, to serve as guides for striking board. Adjust bars to subgrades required for accurate setting of paving units to finished grades indicated.

C. Place bituminous setting bed where indicated, in panels, by spreading bituminous material between control bars. Strike setting bed smooth, firm, even, and not less than ¾ inch thick. Add fresh bituminous material to low, porous spots after each pass of striking board. After each panel is completed, advance first control bar to next position in readiness for striking adjacent panels. Carefully fill depressions that remain after removing depth-control bars.

1. Roll setting bed with power roller to a nominal depth of ¾ inch while still hot. Adjust thickness as necessary to allow accurate setting of unit pavers to finished grades indicated.
2. Apply neoprene-modified asphalt adhesive to cold setting bed by squeegeeing or troweling. If troweled on, use trowel with serrations not exceeding 1/16 inch. Proceed with setting of paving units only after adhesive is dry to the touch.

D. Place pavers carefully by hand in straight courses, maintaining accurate alignment and uniform top surface. Protect newly laid pavers with plywood panels on which workers can stand. Advance protective panels as work progresses, but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of pavers. If additional leveling of paving is required, and before treating joints roll paving with power roller after sufficient heat has built up in the surface from several days of hot weather.

E. Joint Treatment: Place unit pavers with hand-tight joints. Fill joints with a 5 to 1 sand/cement mix by sweeping over paved surface until joints are filled.

3.5 REPAIR, CLEANING AND PROTECTION

A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units ad intended. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

B. Cleaning: Remove excess sand/cement mix from exposed paver surfaces; wash and scrub clean.

3.6 METHOD OF PAYMENT

A. Payment shall be made per square foot of pavers installed and shall include subgrade compaction, concrete base, bituminous setting bed, unit pavers and sand joint filler. Excavation and removal of existing pavement, concrete perimeter curb and pavement striping shall be paid under separate bid items.

CONTROL OF WORK

Construction work shall take place between the hours of 7:00 A.M. to 7:00 P.M., Monday through Saturday.

Driveways and driveway aprons removed shall be formed and poured within 24 hours.

Driveways and driveway aprons may be removed on Thursday, but must be formed and poured on Friday.

Driveways and driveway aprons may not be removed on Friday.

"OR APPROVED EQUAL" ITEMS

In the preparation of these documents and plans, several proprietary products may have been specified. In all such cases, it is to be understood that the Contractor may offer a substitute for the specified product, as indicated by the words "Or Approved Equal." However, the Contractor must be aware that, before commencement of construction, he must provide information to the Engineer concerning the substituted product, and that the Engineer must approve in writing the offered product as being equal to the specified product before use or incorporation into the work.

Unless otherwise modified by the Engineer, proprietary products are to be installed and/or constructed in strict compliance with the pertinent Manufacturer's specifications.

PAYMENT

No adjustments to unit prices shall be due to the Owner or the Contractor for increases or decreases in the Engineer's approximate unit quantities shown in the proposal resulting from changes in the amount of work performed.

ELECTRIC UTILITY NOTES

DUKE ENERGY

1. **DANGER** - Contractor shall contact the company prior to excavation in vicinity of electric underground facilities (approximate plan location shown) or when working near overhead electric facilities.

   (A) For Field Inspector to locate underground electric line, in Ohio call "Ohio Utilities Protection Service" at 1-800-362-2764, and in Kentucky call "Kentucky Underground Protection Service (KUPS)" at 1-800-752-6007 (at least 48 hours in advance), excluding hours Sat., Sun., and State Legal Holidays.

   (B) For notification of construction activity near energized electric facilities, call Mr. Bob Schroeder, 287-3426.

   (C) For additional underground electric record information, call 287-2454.

   (D) For electric engineering notification, agreements and correspondence, address to Mr. James Dugan, Central Accounting Marketing Section, Duke Energy, P. O. Box 960, Cincinnati, Ohio 45202-0960.

2. Contractor shall be responsible for all damages to electric facilities during construction.

3. Electric facilities to be kept in service at all times.

4. Contractor shall be responsible for supporting existing electric facilities affected by the proposed construction.

   A. Where high pressure oil filled pipe type cable installations are exposed or otherwise interfered with by the Contractor, protection by the Contractor will be required against damage to the coating or surrounding thermal sand envelope.

   B. Where concrete encased conduit systems or direct buried cable systems are exposed or otherwise interfered with, the Contractor shall protect the system as necessary against damage. As soon as feasible, the Contractor shall take additional appropriate steps to provide permanent measures to restore support. The methods used shall be based on conditions to be determined by the utility.

   C. Where poles or anchors that support overhead electric facilities are exposed or otherwise interfered with, the contractor shall protect them from damage and provide temporary support

to insure the integrity of the system. As soon as feasible, the Contractor shall take additional appropriate steps to provide permanent measures to restore support. The methods used shall be based on conditions to be determined by the utility.

D. Where the depth of excavation for the proposed work is greater than five (5) feet, the Contractor shall sheet and shore the trench to continuously maintain the support of electric facilities at locations where the electric facilities are within the zone of influence adjacent to the excavation as determined by the natural angle of repose of the soil.

E. All damage to electric facilities and services requiring adjustments, relocations and/or repairs will be made at the Contractor's cost.

5. Contractor shall not backfill exposed electric facilities until the company has inspected its facility or performed any adjustments and/or maintenance that may be required.

NOTE: Should Contractor damage electric facilities, Contractor shall immediately notify the Electric Service Desk through the Company Operator (381-2000). Contractor shall keep everyone clear of damaged electric facilities until company personnel arrive at the work site.

GAS FACILITY NOTES

DUKE ENERGY COMPANY

Gas Facility Notes

I. For Gas Engineering Notification, agreements, and official correspondence, address to:

Duke Energy

139 East Fourth Street

P.O. Box 960, Room 460-A

Cincinnati, Ohio 45202

II. The gas main information provided shows the approximate locations and depths of cover and is provided to comply with statutory regulations. This information should be used only for planning, not construction.

III. All gas main depths of cover noted are approximate depths of cover recorded at the time of installation. Any resulting grade changes since the time of the main installation will cause the existing depth of cover to be different. Extreme care must be taken to ensure safe excavation when approaching known or suspected gas facilities.

IV. All gas services were installed at a minimum of 1'-6" of cover. See item III above.

V. For additional gas facility record information, call 1-800-372-7612.

VI. To comply with federal and state regulations concerning damage prevention programs, the utility companies must be contacted at least 48 hours (two working days) prior to excavation by calling the OHIO UTILITIES PROTECTION SERVICE (OUPS), toll free, at 1-800-362-2764.

Construction Notes

I. Gas facilities are to be kept in service at all times.

II. The contractor shall be responsible for all damages to gas facilities during or as a result of the Contractor's construction. All damage to gas facilities requiring adjustments, relocations and/or repairs will be made at the contractor's cost.

GAS FACILITY NOTES

DUKE ENERGY COMPANY

Page Two

III. The contractor shall sheet and shore all excavations as required to continuously support gas facilities within the zone of influence (as determined by the natural angle of repose of the soil).

IV. Crossing buried gas facilities with heavy construction equipment may cause damage to the gas facilities. Contact the Duke Energy Gas Engineering Department for details on how to protect the gas facilities from damage.

V. The contractor shall not backfill exposed gas facilities until the utility has inspected its facilities and performed any maintenance and/or adjustments that may be required.

VI. The contractor is responsible for preventing any damage to our gas facilities. This includes protection of coatings and wrappings on steel gas mains. It also includes any damage with may have occurred to plastic gas mains, such as crimps or gouges.

VII. When cast iron or similar gas facilities are exposed or interfered with by the contractor, replacement or reinforcement by Duke Energy may be required at the contractor's expense. Backfill with control low strength material will be required.

VIII. Blasting or other construction procedures which may transmit loads or vibrations in the vicinity of gas facilities must be approved by Duke Energy Gas Engineering Department. A blasting plan, identifying all pertinent information, must be submitted in writing by a blasting expert prior to any work.

Proposed Developments at Gas R/W & Easements (If Applicable)

I. Proposed development plans around and near gas facilities within private easements must be submitted to Duke Energy Gas Engineering Dept. for review. These plans must be approved before any work may begin within our easements.

II. Specified easement widths must be maintained in order for Duke Energy to protect its facilities.

III. No permanent structures may be built within the easements.

IV. Cuts and fills are generally not permitted within the easements. Some fills may be allowed, and will be reviewed on an individual basis. Any permitted fills will be limited to an amount which will allow Duke Energy to properly maintain its facilities.

V. Perpendicular utility crossings of gas easements are acceptable, provided proper clearances are maintained. Parallel installations are normally not allowed.

WATER WORKS NOTES

All work pertaining to water works items shall be done in strict accordance with the specifications of the Northern Kentucky Water Service District and under the direction, supervision and inspection of the Water District. Water main items are to be constructed in accordance with the provisions of the Kentucky 2000 Transportation Cabinet / Department of Highways, Standard Specifications for Road and Bridge Construction, dated January 1, 2000, and any supplements or changes thereto. Copies of all pertinent specifications may be obtained from the Northern Kentucky Water Service District.

A cushion of 12" shall be maintained between the proposed water mains and the existing sewers, inlet connections, and drains. If a greater clearance is desired, it will be so designated. Building sewer laterals are not to be disturbed or trapped. Existing drains, sewers and culverts are not be disturbed. If the water main is to be under culverts or pipe sewers, they shall be tunneled and backfilled with Class "T" concrete.

It shall be the Contractor's responsibility to arrange for removal and replacement of any poles and guys necessary for the installation of the proposed water mains, and any cost connected thereto shall be his expense.

All backfill to be Method "A" except where otherwise noted.

No part of any fire hydrant setting shall be installed closer than five feet to any driveway, inlet, utility pole, or guy wire anchor.

No extra payment will be made for lead joints.

SANITARY SEWER NOTES

Sanitary sewer and/or combination sewer items are to be constructed in accordance with the provisions of the Sanitation District No. 1, and under the direction, supervision and inspection of the Sanitation District No. 1. Sanitation sewer items are to be constructed in accordance with the provisions of the Kentucky 2000 Transportation Cabinet / Department of Highways, Standard Specifications for Road and Bridge Construction, dated January 1, 2000, and any supplements or changes thereto.

The Contractor shall supply separate bid items for raising manholes using manhole adjustment rings and for using brick and mortar. If only one bid item is received, the Contractor shall raise all manholes with brick and mortar. Sewer manhole adjustment prior to machine paving shall be done in accordance with the Sanitation District No. 1 Rules and Regulations.

In the event that manhole adjusting rings cannot be used on sanitary and/or storm sewer manholes, the Contractor shall be required to use brick masonry and to adjust manholes to grade. Stacking of adjusting rings shall not be permitted. Substandard or damaged manhole casting shall be replaced with standard casting.