CALL NO. 317

CONTRACT ID. 131209

LYON COUNTY

FED/STATE PROJECT NUMBER FD04 SPP 072 0062 009-013

DESCRIPTION KUTTAWA-PRINCETON ROAD (US 62)

WORK TYPE GRADE, DRAIN & SURFACE WITH BRIDGE

PRIMARY COMPLETION DATE 150 WORKING DAYS

LETTING DATE: September 27,2013

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 EASTERN DAYLIGHT TIME September 27,2013. Bids will be publicly announced at 10:00 EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

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

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PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 01

CONTRACT ID - 131209

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COUNTY - LYON

PCN - DE07200621309
FD04 SPP 072 0062 009-013

KUTTAWA-PRINCETON ROAD US 62 (MP 9.352) FROM END OF 4-LANE AT EDDYVILLE E TO I-69 (WESTERN KENTUCKY PARKWAY). (MP 12.213), A DISTANCE OF 01.30 MILES.GRADE, DRAIN & SURFACE WITH BRIDGE SYP NO. 01-00307.01.

GEOGRAPHIC COORDINATES LATITUDE 37:05:00.00 LONGITUDE 88:04:00.00

COMPLETION DATE(S):

150 WORKING DAYS	APPLIES TO ENTIRE CONTRACT

CONTRACT NOTES

PROPOSAL ADDENDA

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

BID SUBMITTAL

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

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

JOINT VENTURE BIDDING

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

UNDERGROUND FACILITY DAMAGE PROTECTION

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

SPECIAL NOTE FOR PIPE INSPECTION

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

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

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

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

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

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

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

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

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

HARDWOOD REMOVAL RESTRICTIONS

The Kentucky Division of Forestry has imposed a quarantine in Anderson, Boone, Bourbon, Boyd, Boyle, Bracken, Campbell, Carroll, Fayette, Franklin, Gallatin, Garrard,

Grant, Greenup, Hardin, Harrison, Henry, Jefferson, Jessamine, Kenton, Oldham, Owen, Pendleton, Scott, Shelby, Trimble, and Woodford Counties to prevent the spread of an invasive insect, the emerald ash borer. Hardwood cut in conjunction with the project may not be removed from the county of its origin. Chipping or burning on site is the preferred method of disposal.

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

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

ACCESS TO RECORDS

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

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

10/29/12

SPECIAL NOTE FOR RECIPROCAL PREFERENCE

Reciprocal preference to be given by public agencies to resident bidders

By reference, KRS 45A.490 to 45A.494 are incorporated herein and in compliance regarding the bidders residency. Bidders who want to claim resident bidder status should complete the Affidavit for Claiming Resident Bidder Status along with their bid in the Expedite Bidding Program. Submittal of the Affidavit should be done along with the bid in Bid Express.

ASPHALT MIXTURE

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

DGA BASE

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

DGA BASE FOR SHOULDERS

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

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

ASPHALT PAVEMENT RIDE QUALITY CATEGORY A

The Department will apply Pavement Rideability Requirements on this project in accordance with Section 410, Category A.

OPTION B

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

SPECIAL NOTE FOR PURCHASE OF CARBON-SULFUR DETERMINATION INSTRUMENT

Provide a new Carbon-Sulfur Determination Instrument as part of this contract. Provide a LECO Corporation, CS844-MC Carbon-Sulfur Determination Instrument with complete installation and a minimum one-year complete warranty. Ensure the Carbon-Sulfur Determination Instrument meets the requirements of ASTM E 1941 and ASTM E 1019.

Complete installation shall include delivery and manufacturer installation of a CS844-MC instrument, Dell PC tower with Window 7 operating system, LECO touch user interface software, boom mounted 19” touchscreen interface, 10 position shuttle loader, LECO Model 250 Balance and Interface kit, Oxygen regulator kit, 2-stage air regulator kit, SmartLine Internet-based remote diagnostic package, inkjet or laser printer kit, required auxiliary items, and sufficient operating supplies for installation and system verification.

Deliver the Carbon-Sulfur Determination Instrument to the Division of Materials located at 1227 Wilkinson Boulevard in Frankfort, Kentucky on or before January 30, 2014.

The Department will measure the quantity for this equipment as each. The Department will make payment for a Carbon-Sulfur Determination Instrument satisfying the Departments specifications. The Department will consider payment for the Carbon-Sulfur Determination Instrument as full compensation for furnishing all work required in this special note.

SPECIAL NOTES FOR
PROTECTION OF RAILROAD INTEREST

Paducah and Louisville Railway, Inc.

I. AUTHORITY OF RAILROAD ENGINEER AND STATE ENGINEER:

A. The authorized representative of the Railroad Company, hereinafter referred to as Railroad Engineer, shall have final authority in all matters affecting the safe maintenance of Railroad traffic of his Company including the adequacy of the foundations and structures supporting the Railroad tracks.

B. The authorized representative of the State, hereinafter referred to as the Engineer, shall have authority over all other matters as prescribed herein and in the Project Specifications.

II. NOTICE OF STARTING WORK:

A. The Contractor shall not commence any work on Railroad rights of way until he has complied with the following conditions:

1. Given the Railroad written notice, with copy to the Engineer who has been designated to be in charge of the work, **at least ten (10) days in advance** of the date he proposes to begin work on Railroad rights of way. **If flagging service is required, such notice shall be submitted at least thirty (30) days in advance** of the date scheduled to commence work. The Railroad's Contact information is on the Summary Sheet.

2. Obtain written authorization from the Railroad to begin work on Railroad rights of way, such authorization to include an outline of specific conditions with which he must comply.

3. Obtain written approval from the Railroad of Railroad Protective Insurance Liability coverage as required by paragraph 14 herein.

4. Furnish a schedule for all work within the Railroad rights of way as required by paragraph 7, B, 1.

B. The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who

are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

III. INTERFERENCE WITH RAILROAD OPERATIONS:

A. *The Contractor shall so arrange and conduct his work that there will be no interference with Railroad operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad Company or to poles, wires, and other facilities of tenants on the rights of way of the Railroad Company. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging service or inspection service (watchman) shall be deferred by the Contractor until the flagging protection required by the Railroad is available at the job site.*

B. *Whenever work within Railroad rights of way is of such a nature that impediment to Railroad operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.*

C. *Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Engineer, such provisions are insufficient, either may require or provide such provisions, as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost and/or time to the Railroad or the State.*

IV. TRACK CLEARANCES

A. *The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. However, before undertaking any work within Railroad rights of way, or before placing any obstruction over any track, the Contractor shall:*

1. Notify the Railroad's representative **at least 72 hours in advance** of the work.

2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as necessary.

3. Receive permission from the Railroad's representative to proceed with the work.

4. Ascertain that the Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

V. CONSTRUCTION PROCEDURES

A. General:

1. Construction work on Railroad property shall be:

   a) Subject to the inspection and approval of the Railroad.

   b) In accord with the Railroad's written outline of specific conditions.

   c) In accord with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.

   d) In accord with all Special Notes, Summaries, and Addendums.

2. The Railroad requires a submission of construction procedure that meets the requirements of these Special Notes and attachments. The Railroad's **submittal review period is thirty (30) days. Resubmissions will be reviewed within 2 weeks.**

B. Excavation and shoring:

1. The sub grade of an operated track shall be **maintained with edge of berm at least 10'0" from centerline of track and not more than 24 inches below top of rail.** Contractor will not be required to make existing section meet this specification if substandard, in which case the existing section will be maintained.

2. The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles, or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material. The procedure for doing such work, including need of and plans for shoring, shall first be approved by the Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.

3. The Contractor shall submit a detailed procedure for the installing of sheeting/shoring adjacent to Railroad Tracks.

4. Shoring protection shall be provided when excavating adjacent to an active track or railroad facility or as determined by the Railroad. Shoring will be provided in accordance with AREMA *Manual for Railway Engineering* Chapter 8, part 28; except as noted below.

5. Shoring may not be required if all of the following conditions are satisfied:

a. Excavation does not encroach upon a 1½ horizontal: 1 vertical theoretical slope line starting 1'-6" below top of rail and at 12'-0" minimum from centerline of the track (live load influence zone).

b. Track is on level ground or in a cut section and on stable soil.

c. Excavation does not adversely impact the stability of a Railroad facility (i.e. signal bungalow, drainage facility, undergrade bridge, building, etc.)

d. Shoring is not required by any governing construction code.

6. When the track is on an embankment, excavating the toe of the embankment without shoring may affect the stability of the embankment. Therefore, excavation of the embankment toe without shoring will not be permitted.

7. Trench boxes are prohibited for use on Railroad property within the theoretical live load influence zone.

8. The required protection is the cofferdam type that completely encloses the excavation. Where dictated by conditions, partial cofferdams with opened sides away from the track may be used. Cofferdams shall be constructed using steel piling, or when approved by the engineer, steel soldier piles with timber lagging. Wales and struts shall be provided and designed as needed. The following shall be considered when designing cofferdams:

a. Shoring shall be designed to resist a vertical lice load surcharge of 1,880 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, 8'6" wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in AREMA *Manual for Railway Engineering*, Chapter 8, Part 20.

b. Allowable stresses in materials shall be in accordance with AREMA *Manual for Railway Engineering,* Chapter 7, 8, and 15.

c. A construction procedure for temporary shoring shall be shown on the drawing.

d. All shoring systems on or adjacent to Railroad right-of-way shall be equipped with railings or other approved fall protection.

e. A minimum horizontal clearance of 10'-0" from centerline of the track to face of nearest point of shoring shall be maintained provided a 12'-0" roadbed is maintained with a temporary walkway and handrail system.

9. The Contractor shall submit the following drawings and calculations (all shall be signed/sealed by a Professional Engineer) for the Railroad's review and approval.

   a. Six (6) sets of detailed drawings of the shoring systems showing sizes of all structural members, details of connections, and distances from centerline of track to face of shoring. Drawing shall show a section showing height of shoring and track elevation in relation to bottom of excavation.

   b. Six (6) sets of calculations of the shoring design. The drawings and calculations shall be prepared by a Licensed Professional Engineer and shall bear the Engineer's seal and signature. Shoring plans shall be approved by the Railroad's construction engineering and inspection representative.

   c. For sheeting and shoring within 18'-0" of the centerline of the track, the live load influence zone, and in sloes, the Contractor shall use interlocked steel sheeting (sheet pile).

   d. Sheet pile installed in slopes or within 18'-0" of the centerline shall <u>not</u> be removed.

   e. Sheet pile shall be cut off a minimum of 3'-0" below the finished grade, ditch line invert, or as directed by the Engineer. The ground shall be backfilled and compacted immediately after sheet pile is cut off.

   f. A procedure for cutting off the sheet pile and restoring the embankment shall be submitted to the Engineer for review and acceptance.

C. Demolition Procedure:

1. Railroad tracks and other railroad property, including signals, structures, and other facilities, must be protected from damage during the procedure. No crane or equipment may be set on the rails or track structure and no material may be dropped on Railroad property.

2. The Contractor is required to submit a plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

3. Crane rating sheets showing cranes to be adequate for **150% of the actual weight of the pick.** A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted.

4. Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing and/or proposed structure showing complete and sufficient details with supporting data for the demolition or erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. If possible, field measurements shall be taken with a Railroad representative present.

5. A data sheet must be submitted listing the types, size, and arrangements of all rigging and connection equipment. The safe working load capacity of all rigging and connecting equipment shall be 150% above the calculated weight of the pick.

6. A complete procedure is to be submitted, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

7. All erection or demolition plans, procedures, data sheets, etc. submitted must be prepared, signed and sealed by a Registered Professional Engineer.

8. The Railroad's representative must be present at the site during the entire demolition and erection procedure period.

9. All procedures, plans and calculations shall first be approved by the Engineer and the Railroad Engineer, but such approval does not relieve the Contractor from liability.

10. Loads shall not be supported while any trains are passing if that piece of equipment has the capacity to foul a 50' envelope.

11. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.

12. Existing, obsolete, bridge piers shall be removed to a minimum of 3'-0" below the finished grade, final ditch line invert, or as directed by the Engineer.

13. A minimum quantity of 25 tons of Railroad approved track ballast may be required to be furnished and stockpiled on site by the Contractor, or as directed by the Engineer.

14. On-track or ground debris shields such as crane mats are prohibited.

15. Overhead Demolition Debris Shield – Shall be installed prior to the demolition of a bridge deck or other relevant portions of the superstructure.

    a. The demolition debris shield shall be erected from the underside of the bridge over the track area to catch all falling debris.

    b. The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Controlled Demolition procedure submission.

    c. The demolition debris shield shall provide 23'-0" minimum vertical clearance if the existing clearance is less than 23'-0" as approved by the Railroad. Horizontal clearance to the centerline of the track should not be reduced unless approved by the Engineer.

    d. The vertical clearance ATR (above top of rail) is measured from the top of rail to the lowest point on the overhead shielding system measured within a distance of 6'-0" out from each side of the track centerline.

    e. The demolition debris shield design and supporting calculations, all signed/sealed by a Professional Engineer, shall be submitted for review and acceptance.

    f. The demolition debris shield shall have a **minimum** design load of 50 pounds per square foot **plus** the weight of the equipment, debris, personnel, and other loads to be carried.

    g. The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.

h. The contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Engineer.

16. Vertical Demolition Shield – This type of shield may be required for substructure removals in close proximity to track and other facilities, as determined by the Engineer.

    a. Prior to commencing the demolition activity, the Contractor shall install a ballast protection system consisting of geotextile to keep the railroad ballast from becoming fouled with construction or demolition debris and fines. The geotextile ballast protection system shall be installed and maintained by the Contractor for the project duration in accordance with the attached plan, or with additional measures as directed by the Engineer.

    b. The Contractor shall submit detailed plans, with detailed calculations, prepared and submitted by a Professional Engineer of the protection shield and ballast protection systems for approval prior to the start of demolition.

    c. Blasting will not be permitted to demolish a structure over or within Railroad right-of-way.

17. The Controlled Demolition procedure must be approved by the Engineer prior to undertaking work on the project.

18. The Contractor shall provide timely communication to the Engineer when scheduling the demolition related work so that the Engineer may be present during the entire demolition procedure.

19. At any time during demolition activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances which may create a potential hazard to rail operations or Railroad facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer’s satisfaction. The Railroad shall not be responsible for any additional costs or time claims associated with such revisions.

D. *Erection Procedure:*

The Contractor shall submit a detailed procedure for performing erection on/about Railroad property.

1. The Contractor shall submit six (6) copies of the detailed procedure for erection of the proposed structures over or adjacent to the tracks or right-of-way. This procedure shall include a plan showing the locations of cranes, horizontally and vertically, operating radii, with staging locations shown, including beam placement on ground or truck unloading staging plan. Plan should also include the location of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions should be shown. No crane or equipment may be set on the rails or track structure.

2. Also included with this submittal the following information:

    a. As-Built Bridge Seat Elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Engineer for review and verification at least 30 days in advance of construction or erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.

    b. Computations showing weight of picks must be submitted. Computations shall be made from plans of the structure beams being erected and those plans or sections thereof shall also be included in the submittal; the weight shall include the weight of concrete or other materials including lifting rigging.

    c. Crane rating sheets showing cranes to be adequate for 150% of the actual weight of the pick. A complete set of crane charts, including crane, counterweight, maximum boom angle, and boom nomenclature is to be submitted. Safety factors that may have been “built in” to the crane charts are not to be considered when determining the 150% Factor of Safety.

    d. A data sheet shall be prepared listing the type, size and arrangements of slings, shackles, or other connecting equipment. Include copies of a catalog or information sheets for specialized equipment. All specific components proposed for use shall be clearly identified and highlighted in the submitted documents. The safe working load capacity of the connecting equipment shall be 150% above the calculated weight of the pick.

    e. A complete written procedure is to be included that describes the sequence of events, indicating the order of lifts and any repositioning or rehitching of the crane or cranes.

f. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical sub tasks (i.e., performing aerial splices, installing temporary bracing, etc.) shall be furnished so that the potential impact(s) to Railroad operations may be assessed and eliminated or minimized.

g. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.

h. Design and supporting calculations prepared by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review. A guardrail will be required to be installed in a track where a temporary bent is located within twelve (12) feet from the centerline of that track.

3. The proposed Erection procedure must be approved by the Engineer prior to undertaking work on the project.

4. The Contractor shall provide timely communication to the Engineer when scheduling the erection related work so that the Engineer may be present during the entire erection procedure.

5. At any time during construction activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances which may create a potential hazard to rail operations or Railroad facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. The Railroad shall not be responsible for any additional costs or time claims associated with such revisions.

E. Blasting:

1. The Contractor shall obtain advance approval of the Railroad Engineer and the Engineer for use of explosive on or adjacent to Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:

    a) Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.

    b) Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

    c) No blasting shall be done without the presence of an authorized representative of the Railroad. **At least 10 days advance notice** to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2B above) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.

    d) Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.

    e) Explosives shall not be stored on Railroad Property.

    f) At any time during the blasting activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions, or other circumstance which may create a potential hazard to rail operations or Railroad facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer’s satisfaction. The Railroad shall not be responsible for any additional costs or time claims associated with such revisions.

2. The Railroad representative will:

    a) Determine the approximate location of trains and advise the Contractor the approximate amount of time available for the blasting operation and clean-up.

b) Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these Special Notes.

F. Track Monitoring:

The Contractor shall submit for Railroad review and approval, a detailed track monitoring program to detect both horizontal and vertaical movement of the track and roadbed, a minimum of 30-days in advance of start of work.

1. For the installation of temporary or permanent shoring systems, including but not limited to soldier piles and lagging, and interlocked steel sheeting on or adjacent to the Railroad's right-of-way, the contractor may be required to submit a detailed track monitoring program for the Railroad's approval prior to performing any work near the Railroad's right-of-way.

2. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. The Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.

3. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Engineer for analysis.

4. If any movement has occurred as determined by the Engineer, the Railroad will be immediately notified. The Railroad, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including monitoring of corrective action of the contractor will be at project expense.

G. Maintenance of Railroad Facilities:

1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his operations and provide and maintain any erosion control measures as required. The Contractor shall provide erosion control measures during construction and use methods that accord with applicable state standard specifications for road and bridge construction, including either (1) silt fence; (2) berm or temporary ditches; (3) sediment basin; (4) aggregate checks; and (5) channel lining. The Contractor will promptly repair eroded areas with Railroad rights of way and to repair any other damage to the property of the Railroad or its tenants at the Contractor's expense.

2. All maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

H. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights of way of the Railroad Company without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad Company will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.

2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

I. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights of way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights of way in a neat condition satisfactory to the Chief Engineer of the Railroad or his authorized representative.

VI. DAMAGES:

A. The Contractor shall assume all liability for any and all damages to his/her work, employees, equipment and materials caused by Railroad traffic.

B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

VII. FLAGGING SERVICES:

A. When Required:

1. Flagging services will not be provided until the contractor's insurance has been reviewed & approved by the Railroad.

2. Under the terms of the agreement between the Department and the Railroad, the **Railroad has sole authority to determine the need for flagging** required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are likely to be, working on the Railroad's rights of way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a railroad structure or the railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging. If any element (workers, equipment, tools, scaffolding, etc.) may exist or fall within 25-feet of the edge of track, a flagman is necessary.

3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three- (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required until the project has been completed.

B. Scheduling and Notification:

1. Not later than the time that approval is initially requested to begin work on Railroad rights of way, Contractor shall furnish to the Railroad and the Department a schedule for all work required to complete the portion of the project within Railroad rights of way and arrange for a job site meeting between the Contractor, the Department, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.

2. The Contractor will be required to give the Railroad representative **at least 10 working days of advance written notice** of intent to begin work within Railroad rights of way. If it is necessary for the Railroad to advertise a flagging job for bid, it **may take up to 90-days to obtain service**. Once begun, when work is suspended at any time for any reason, the Contractor will be required to give the Railroad representative **at least 3 working days of notice** before resuming work on Railroad rights of way. Such notice shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally it shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagman, or flagmen is present at the job site. It **may take up to 30 days to obtain flagging initially** from the Railroad. When flagging begins the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and may be unable to be called for on a spot basis. If flagging becomes unnecessary and is suspended, it **may take up to 10 days to again obtain flagging services** from the Railroad. Due to labor agreements, it is necessary to give **5 working days notice before flagging service may be discontinued** and responsibility for payment stopped.

3. If, after the flagman is assigned to the project site, emergencies arise which require the flagman's presence elsewhere, and then the Contractor shall delay work on Railroad rights of way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Department or Railroad.

4. When demobilizing, the Contractor shall contact the flagman to avoid unnecessary flagging charges. This communication shall be documented.

C. Payment:

1. **The Cabinet will be responsible for paying the Railroad directly for any and all costs of flagging,** which may be required to accomplish the construction.

2. The estimated cost of flagging is listed on the Summary Sheet. The charge to the Cabinet by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.

3. Railroad work involved in preparing and handling bills will also be charged to the Cabinet. Charges to the Cabinet by the Railroad shall be in accordance with applicable provisions of 23 CRF 140, Subpart I and 23 CRF 646, Subpart B. Flagging costs are subject to change. The above estimates of flagging cost are provided for information only and are not binding in any way.

D. Verification:

1. The Contractor and Department will review and sign the Railroad flagman's time sheet, attesting that the flagman was present during the time recorded. Flagman may be removed by Railroad if form is not signed. If flagman is removed, the Contractor will not be allowed to re-enter the Railroad rights of way until the issue is resolved. Any complaints concerning flagman or flagmen must be resolved in a timely manner. If need for flagman or flagmen is questioned, please contact the Railroad's Representative listed on the Project Summary Sheet. All verbal complaints must be confirmed in writing by the Contractor within 5 working days with copy to the Highway Engineer. All written correspondence should be addressed to the Railroad's Representative listed on the Project Summary Sheet.

2. The Railroad flagman assigned to the project will be responsible for notifying the Project Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Project Engineer will document such notification in the project records. When requested, the Project Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

VIII. HAUL ACROSS RAILROAD:

A. Where the plans show or imply that materials of any nature must be hauled across a Railroad, unless the plans clearly show that the State has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad. The Contractor will be required to bear all costs incidental, including flagging, to such crossings whether services are performed by his own forces or by Railroad personnel.

B. *No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad Company unless specific authority for is installation, maintenance, necessary watching and flagging thereof and removal, all at the expense of the Contractor, is first obtained from the Railroad Engineer.* ***The approval process for an agreement normally takes 90-days.***

IX. WORK FOR THE BENEFIT OF THE CONTRACTOR:

A. *All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the State and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the State and/or the Railroad.*

B. *Should the Contractor desire any changes in addition to the above, then he shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.*

X. COOPERATION AND DELAYS:

A. *It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.*

B. *Train schedules cannot be provided to the Contractor. It is the Contractor's responsibility to contact the Railroad in order to arrange "Track Time." This "Track Time" will be an agreed upon prearranged time period that the Railroad will, without undue burden, schedule no train traffic to facilitate the Contractor's work on or near Railroad right-of-way. This track time must be arranged* ***at least 48 hours prior to the date of need.***

C. *No charge or claims of the Contractor against either the Department or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of Railroad traffic or for any delays due to compliance with these Special Notes.*

D. *The Contractor shall cooperate with others participating in the construction of the Project to the end that all work may be carried on to the best advantage.*

E. *The Railroad does not assume any responsibility for work performed by others in connection with the Project. No claims of the Contractor against the Railroad for any inconvenience, delay, or additional cost incurred by the Contractor on account of operations by others.*

XI. TRAINMAN'S WALKWAYS:

*A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each day. If there is any excavation near the walkway, a handrail, with **10'-0" minimum clearance from centerline of track,** shall be placed.*

XII. GUIDELINES FOR PERSONNEL ON RAILROAD RIGHTS OF WAY:

A. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots cinched with straps which fit snugly about the ankle are adequate. Safety boots are strongly recommended.

*B. No one is allowed within **25' of the centerline of the track** without specific authorization from the flagman.*

C. All persons working near track when train is passing are to look out for dragging bands, chains and protruding or shifting cargo.

D. No one is allowed to cross tracks without specific authorization from the flagman.

*E. All welders and cutting torches working within **25' of track must stop when train is passing.***

F. No steel tape or chain will be allowed to cross or touch rails without permission.

XIII. GUIDELINES FOR EQUIPMENT ON RAILROAD RIGHTS OF WAY:

*A. No crane or boom equipment will be allowed to set up to work or park within **boom distance plus 15' of centerline of track** without specific permission from railroad official and flagman.*

B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.

C. All employees will stay with their machines when crane or boom equipment is pointed toward track.

D. All cranes and boom equipment under load will stop work while a train is passing (including pile driving).

E. Swinging loads must be secured to prevent movement while train is passing.

F. No loads will be suspended above a moving train.

*G. No equipment will be allowed within **25' of centerline of track** without specific authorization of the flagman.*

H. Trucks, tractors or any equipment will not touch ballast line without specific permission from railroad official and flagman.

*I. No equipment or load movement **within 25' or above a standing train or other equipment** without specific authorization of the flagman.*

*J. All operating equipment within **25' of track must halt operations when a train is passing**. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.*

K. All equipment, loads and cables are prohibited from touching rails.

L. While clearing and grubbing, no vegetation will be removed from railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.

M. No equipment or materials will be parked or stored on Railroad's property unless specific permission is granted from the Railroad Engineer.

N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it can not be moved by unauthorized persons.

O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.

XIV. INSURANCE:

See following Paducah & Lousiville Railway, INC. Insurance Requirements

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XV. FAILURE TO COMPLY:

A. *These Special Notes are supplemental and amendatory to the current edition of the Kentucky Department of Highways' Standard Specifications for Road and Bridge Construction and amendments thereof, and where in conflict therewith, these Special Notes shall govern.*

B. *In the event the Contractor violates or fails to comply with any of the requirements of these Special Notes:*

1. The Railroad Engineer may require that the Contractor vacate Railroad property.

2. The Engineer may withhold all monies due the Contractor on monthly statements.

3. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

XVI. PAYMENT FOR COST OF COMPLIANCE:

A. *No separate payment will be made for any extra cost incurred on account of compliance with these Special Notes. All such cost shall be included in prices bid for other items of the work as specified in the payment items.*

PADUCAH & LOUISVILLE RAILWAY, INC.
INSURANCE REQUIREMENTS

Applicant shall provide and maintain the following insurance, in form and amount and with companies satisfactory to, and as approved by, P&L as follows:

(a) Statutory Workers' Compensation and Employer's Liability insurance.

(b) An Occurrence Form Railroad Protective Policy with limits of not less than Five Million ($5,000,000.00) Dollars per occurrence for Bodily Injury Liability, Property Damage Liability and Physical Damage to Property, with Ten Million ($10,000,000.00) Dollars aggregate for the term of the policy with respect to Bodily Injury, Liability, Property Damage Liability and Physical Damage to Property.

(c) Automobile Liability in an amount not less than One Million ($1,000,000.00) Dollars combined single limit.

(d) Comprehensive General Liability in an amount not less than Five Million ($5,000,000.00) Dollars combined single limit. In the event the policy is a Claims Made Policy, coverage shall include an aggregate of Ten Million ($10,000,000.00) Dollars. Limits may be accomplished by use of underlying coverage with an umbrella as long as the umbrella follows form.

Each policy shall name P&L as a named insured and shall provide for not less than ten (10) days prior written notice to P&L of cancellation of, or any material change in the policies. The policies shall not contain any exclusions related to doing business on, near, or adjacent to Railroad facilities.

Applicant shall provide P&L with a Certificate of Insurance evidencing such coverage and, upon request, shall deliver a certified, true and complete copy of the policy or policies to P&L.

It is understood that, so long as this Agreement shall remain in force, P&L shall have the right, from time to time, to revise the amount or form of insurance coverage's provided in this exhibit as circumstances or changing economic conditions may require. P&L shall give Applicant written notice of any such requested change at least thirty (30) days prior to the date of expiration of the then existing policy or policies and Applicant shall provide P&L with such revised policy or policies therefore or otherwise agree to modify the Agreement to remove the limitation of indemnification to Applicant’s limits of insurance.

All insurance provided must be primary and shall not be reduced or limited by any insurance procured by P&L.

Kentucky Transportation Cabinet
Division of Right of Way & Utilities

TC 69-008
08/2010
Page 1 of 4

SUMMARY FOR KYTC PROJECTS THAT INVOLVE A RAILROAD

Date: 7/16/2013 *(enter using M/d/yyyy format)*

This project actively involves the below listed railroad company. This Project Summary provides an abbreviated listing of project specific railroad data. The detailed needs of the specified railroad company are included in the Special Notes for Protection of Railroad Interest in the proposal package. By submitting a bid, the contractor attests that they have dutifully considered and accepted the provisions as defined in both documents.

GENERAL ROAD PROJECT INFORMATION *(This section must be provided by KYTC)*

County: Lyon
Federal Number: N/A
State Number: FD04 072 58443 01U
Route: US 62
Project Description: Widen US 62 from end of 4-lane at Eddyville E to I 69
Item Number: 01-307.01 **Highway Milepost:** 9.352

GENERAL RAIL INFORMATION *(The below sections must be provided by Railroad Company)*

Rail Company Name: **Paducah and Louisville Railway**
AAR-DOT# (if applicable): 297 143U **Railroad Milepost:** J-188.84
Train Count (6am to 6pm): 2 **Train Count (6pm to 6am):** 4 **Train Count (24 hr total):** 6
Maximum Train Speed: 35 mph
(This information is necessary to acquire the necessary insurances when working with Railroad Right of Way)

INSURANCE REQUIREMENTS

The named insured, description of the work and designation of the job site to be shown on the Policy are as follows:

(a) Named Insured: Paducah and Louisville
(b) The project description should be as indicated in the General Road Project Information section.
(c) The designation of the jobsite is the route, Milepost, and AAR-DOT# listed above.

FLAGGING INFORMATION

Flagging Estimate:

Cabinet will pay RR directly for any and all flagging costs.

Hourly Rate:

$40.51 per hour based on a 8 hour day effective as of the date of this document.

Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 ½ times the appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime pay at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 ½ times the normal rate.

Forecasted Rate Increases:

Rates will increase to $0.00 per hour based on a 0 hour day effective _____ *(enter using M/d/yyyy format)*.

SUMMARY FOR KYTC PROJECTS THAT INVOLVE A RAILROAD

RAILROAD CONTACTS

(*to be provided by Railroad Company)*

General Railroad Contact:

Gerald Gupton, V.P. and Chief Engineer
Paducah and Louiville Railway, Inc.

_____

1500 Kentucky Avenue
Paducah, Kentucky 42003
(Phone) 270-444-4300
(Email) Ggupton@palrr.com

Regional Representative (Roadmaster):

Van Brasher
Paducah and Louisville Railway, Inc.

_____

1500 Kentucky Avenue
Paducah, Kentucky 42003
(Phone) 270-564-0842
(Email) _____

Insurance contact:

Gerald Gupton, V.P. and Chief Engineer
Paducah and Louisville Railway, Inc.

_____

1500 Kentucky Avenue
Paducah, Kentucky 42003
(Phone) 270-444-4300
(Email) Ggupton@palrr.com

Railroad Designer Contact:

Contractor or In-House Employee? In-House

Gerald Gupton, V.P. and Chief Engineer
Paducah and Louisville Railway, Inc.

_____

1500 Kentucky Avenue
Paducah, Kentucky 42003
(Phone) 270-444-4300
(Email) Ggupton@palrr.com

Railroad Construction Contact:

Contractor or In-House Employee? In-House

Van Brasher
Paducah and Louisville Railway, Inc.

_____

1500 Kentucky Avenue
Paducah, Kentucky 42003
(Phone) 270-564-0842
(Email) _____

KENTUCKY TRANSPORTATION CABINET CONTACTS

(*to be provided by KYTC)*

KYTC Railroad Coordinator:

Allen Rust, PE
Div. of Right of Way & Utilities
Kentucky Transportation Cabinet
200 Mero Street, 5th Floor East
Frankfort, Kentucky 40622
(Phone) 502-564-3210
(Email) allen.rust@ky.gov

KYTC Construction Procurement Director:

Ryan Griffith, Director
Div. of Construction Procurement
Kentucky Transportation Cabinet
200 Mero Street, 3rd Floor West
Frankfort, Kentucky 40622
(Phone) 502-564-3500
(Email) ryan.griffith@ky.gov

KYTC Construction Director:

Ryan Griffith, Director
Div. of Construction
Kentucky Transportation Cabinet
200 Mero Street, 3rd Floor West
Frankfort, Kentucky 40622
(Phone) 502-564-4780
(Email) ryan.griffith@ky.gov

The project specific information provided herein is valid as of the date indicated. However, the specific information may be subject to change due to the normal business operations of all parties. The terms and conditions defined here, and in the bid proposal in its entirety, are inclusive and constant.

Communicating All Promises

Lyon County
Item No 1-307.01

Parcel 5, Lyon Co. Board of Education – (January 6, 2004)

- That the bus garage sign be removed at a time and in a fashion as to return the grounds to a level and seeded condition so there will be no fencing or security breach on the school bus garage property.
- That the security fence not be removed until such time as it can be coordinated with the school district so that it may be relocated or a new fence can be put in place in order that there be no security breach.
- That the contractor working at the direction of the highway department coordinate with the school district so that a fence may be erected behind the easement area in order to maintain security on the school bus garage grounds. It is imperative that security and accessibility be maintained on a seven-day a week, 24 hour a day basis.

Parcel 9, Lyon County Fiscal Court, DES Rescue Building – (July 16, 2003)

- The Commonwealth agrees to keep the existing entrance open at all times for ingress and egress or will establish a temporary entrance for use by the DES Rescue Building.

Parcel 56, Robert and Betty J. Hungerford Hall – (February 6, 2003)

- Any items of personal property located within the Temporary Easement area that need to be moved during the construction period, the contractor must notify the property owner before moving any items.

Parcel 58, C.B. Oliver – (August 1, 2003)

- The Commonwealth agrees to cap the private water line servicing the mobile home within the fee simple acquisition area, at the new proposed right of way line.

SPECIAL NOTES FOR UTILITY CLEARANCE
IMPACT ON CONSTRUCTION

LYON COUNTY
FD04 O72 58443
EDDYVILLE – PRINCETON ROAD (US62)
1-307.01

GENERAL PROJECT NOTE ON UTILITY PROTECTION

The Kuttawa Gas lines have been relocated on this project and should not be in conflict with construction of the roadway. KY 3305 Lt. Sta. 15+00 to 12+00 & US 62 Rt. Sta. 79+90.53 to 89+00.)

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

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

KENTUCKY UTILITIES COMPANY

THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE COMPANY OR THE COMPANY'S SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

AT&T has facilities that are still in service in the areas listed which are in conflict with the construction of the roadway. These areas of the construction project will not be available until the time that the AT&T relocation is complete, MARCH 31, 2014.

Sta. 11+75 ± crossing
Sta. 12+50 ± crossing
Lt Sta. 30+50± to 42+50±
Rt Sta. 41+30± to 58+00±
Rt & Lt Sta. 64+00± to 73+00±
Rt Sta. 78+50± to 152+00±
Lt Sta. 130+00± to 107+50±
Lt Sta. 142+00± to 155+00±
Existing Providence Road
Goodman Road Sta. 10+50± to 12+00±
KY 3171 Rt Sta. 2+50± to 9+00±

The Department will consider submission of a bid as the Contractor's agreement to not make any claims for additional compensation due to delays or other conditions created by the operations of AT&T. Working days will not be charged for those days on which work on AT&T facilities is delayed, as provided in the current edition of the KY Standard Specifications for Road and Bridge Construction. Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or

SPECIAL NOTES FOR UTILITY CLEARANCE
IMPACT ON CONSTRUCTION

LYON COUNTY
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EDDYVILLE – PRINCETON ROAD (US62)
1-307.01

adjacent to the project, the KYTC Resident Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and his decision shall be final and binding upon the Contractor. .

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

The City of Eddyville has water lines and sewer lines that are included in the roadway contract to be relocated by an approved contractor from the list submitted by the City of Eddyville.

API Contractors
2950 Little Cypress Road
Calvert City, KY 42029

Ivetts Plumbing Contractors, Inc.
925 North 9th Street
Paducah, KY 42001

Murtco, Inc.
815 Abell Street
Paducah, KY 42003

SPECIAL NOTES FOR UTILITY CLEARANCE
IMPACT ON CONSTRUCTION

LYON COUNTY
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1-307.01

SPECIAL CAUTION NOTE – PROTECTION OF UTILITIES

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

BEFORE YOU DIG

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

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

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

SECTION 01000

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 SCOPE

A. This section of the Specifications summarizes in general terms the scope of the Project.

B. Except as otherwise specifically stated in the Contract Documents, provide and pay for all materials, labor, tools, equipment, lights, heat, transportation, superintendence, temporary facilities, construction of every nature, taxes legally collectable because of the Work, and all other services, fees and facilities of every nature whatsoever necessary to execute the Work to be done under the Contract and deliver the Work complete in every respect within the specified Contract Time.

C. All contractors, subcontractors, suppliers, and other employers involved with work at the Project Site shall be responsible for compliance with all federal, state, local, and Project Owner's regulations, standards, and codes in effect during the Contract Time.

1.02 PROJECT

This project is being completed in order to make way for the ensuing US 62 roadway widening project to be completed by the Kentucky Transportation Cabinet. The project consists of the relocation of water mains and sanitary sewer lines. Each portion is described below.

The water main portion of this project consists of the relocation of approximately 9,200 linear feet of 6-inch water main, 2,800 linear feet of 10-inch water main, 1,440 linear feet of 12-inch water main.

The sanitary sewer portion of this project is an in kind replacement and consists of the relocation of approximately 1,200 linear feet of 8-inch cast iron sanitary sewer force main and 1,100 linear feet of 6-inch cast iron sanitary sewer force main. As this is a relocation project, no new flows will be added to these lines or the receiving gravity sewer network and wastewater treatment facility. However, the existing gravity sanitary sewer will be extended approximately 400 feet, thereby reducing the length of the sanitary sewer force mains by 400 feet. Both force mains will be replaced with PVC piping of equivalent sizing and pressure rating. The gravity sanitary sewer will also be constructed with PVC piping of equivalent sizing to the existing gravity sanitary sewer system.

1.03 RECORD DRAWINGS

At the completion of the Contract Time, the Contractor shall deliver to the Owner, thru the Engineer, the complete intact copy of Record Drawings. Note that it shall be the responsibility of the Contractor to keep an accurate set of As-Built Drawings on the job site at all times. Submission of suitable As-Built Drawings will be required prior to issuance of final payment. In addition, verification by the Engineer that record drawings are periodically maintained will be required prior to each partial payment by the Owner.

1.04 SUBSTITUTIONS

"Approved equal", "equal", and "equal with prior approval" phrases shall be defined as material and/or equipment of similar construction and equal quality only as approved by the Engineer. Requests for approval shall be submitted to the Engineer no less than three (3) working days prior to the opening of bids. No substitutions or equivalents will be considered during the Contract Time, except for minor substitutions due to unavailability of specified items.

1.05 OBSTRUCTIONS

A. All known pipelines and other existing underground installations and structures in the vicinity of the work to be performed under this Contract are shown on the Drawings according to the best information available to the Owner and Engineer. The Contractor shall field verify the horizontal and vertical location of all utility lines within the path of the proposed utilities prior to construction.

B. The Owner makes no express or implied guarantee for the accuracy of the information shown. The Contractor shall make every effort to locate all underground pipelines including utility service lines, conduits, and other structures by contacting owners of underground utilities, prospecting, or otherwise, in advance of all earthwork operations.

C. Any delay or inconvenience to the Contractor caused by pipelines or other underground structures or obstructions not shown on the drawings, or found in a location different than those indicated, shall be handled in accordance with the General Conditions.

D. All incidental damage to existing utilities which are shown on the drawings, or which are made known to the Contractor prior to excavation, shall be repaired by the owning utility or the Contractor as directed, at the expense of the Contractor.

E. When an accidentally damaged utility is considered, in the opinion of the owning utility, of an importance to require twenty-four (24) hours per

day work, the Contractor shall at all times provide necessary labor and equipment as required to perform the repair or provide aid to the utility in the repair.

F. All obstructions on which work is to be performed by the owning utility or by others shall be carefully exposed by the Contractor without damage and protected. Withhold construction operations as required to allow owning utility to perform necessary work to temporarily or permanently relocate their facility. Provide owning utility working space and access to the job.

G. Obstructions which are replaced within the limits of the Contractor's normal excavation shall be backfilled by the Contractor along with the normal backfilling. Damage to the facility during backfilling shall be the responsibility of the Contractor.

1.06 COMMUNICATIONS

All notices, demands, requests, instructions, reports, approvals, proposals, Change Orders, Field Orders, and claims shall be in writing.

1.07 LAYOUT OF WORK

A. The Contractor shall immediately upon entering the Project Site for the purpose of beginning the work, locate all general reference points and take such action as necessary to prevent their destruction; layout his own and be responsible for, all lines, elevations, and measurements of all work to be executed under the Contract.

The Contractor shall exercise proper precautions to verify fixtures shown on the Drawings before laying out the work, and will be held responsible for any error resulting from his failure to exercise such precautions.

B. The Contractor shall be responsible for the general overall coordination of the work. Each Sub-Contractor shall carefully check the Drawings, Specifications, and the Project Site in order to advise and coordinate their phase of the Work. Each Subcontractor shall leave the required space and clearances for the work of others, field check all dimensions and file a written report to the Engineer where discrepancies occur between the work to be performed and the Drawings, Specifications, or Project Site conditions. If no report is filed prior to approvals of Shop Drawings and Samples, it will be assumed that no conflict occurs. Resolutions of conflicts after Shop Drawings and Sample approvals shall be resolved by the Engineer and the conflict corrected in the field at no increase in the Contract Sum.

1.08 TEMPORARY FACILITIES

A. The Contractor shall provide, install and maintain adequate temporary sanitation facilities at the Site. These temporary facilities shall be approved by the health regulatory agency having jurisdiction at the site and by the Engineer.

B. Upon completion of the work, all temporary contractor equipment and structures shall be removed from the site. At no time shall the sight distance from the stop bar at any intersection be inhibited by the Contractor's equipment or work materials.

1.09 PRODUCT HANDLING

Materials delivered to and stored on the site must be handled in a careful manner as to prevent any damage to the materials. All materials and equipment damaged during manufacture, shipment, delivery, storage, or construction shall be replaced with new material or equipment of exactly the same kind by the Contractor.

1.10 TESTING, ADJUSTMENT AND BALANCING OF SYSTEMS

The Contractor shall perform all required testing of installed piping, equipment, etc. as required by these Technical Specifications and the owning utility's specifications. Adjustments of process equipment will be the responsibility of the Contractor and/or equipment supplier. All systems shall be adjusted and balanced to the approval of the Owner/Engineer prior to project closeout.

1.11 TRAFFIC CONTROL

A. Follow all guidelines as specified in the Kentucky Department of Highways Manual on Uniform Traffic Control Devices. In addition, the following provisions must be met prior to commencing work:

1. Install 48" X 48" permanent "Utility Construction Ahead" signs with two (2) 4" X 4" posts, seven (7) feet high to the lowest portion of the sign, and seven (7) feet from the edge of pavement unless otherwise approved by the Engineer.

2. Use traffic control drums at night in lieu of traffic control cones.

3. Work will not be permitted until proper signals and traffic control measures are implemented.

1.12 REFERENCED STANDARDS

A. Referenced standards and specifications contained in the Technical Specifications are as follows:

1. ACI - American Concrete Institute
2. AISC - American Institute of Steel Construction, Inc
3. ANSI - American National Standards Institute
4. ASA - American Standards Association(also designed by USASI)
5. ASTM - American Society for Testing Materials, Inc.
6. AWS - American Welding Society
7. AWWA - American Water Works Association
8. PCA - Portland Cement Association
9. UL - Underwriter's Laboratories, Inc.
10. USASI - United States of American Standards Institute (also designated as ASA)
11. Kentucky Department of Highways, Standard Specifications for Road and Bridge Construction, 2008 Edition.
12. ASME - American Society of Mechanical Engineers
13. ASI - American Steel Institute
14. NBFU - National Board Fire Underwriters

SECTION 01310

CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: To assure adequate planning and execution of the work so that the work is completed within the number of days allowed in the contract, and to assist the Engineer in appraising the reasonableness of the proposed schedule and in evaluating progress of the work, prepare and maintain the schedules and reports described in this section.

B. Definitions.

"Day" used throughout this section, unless otherwise stated, means "calendar day".

1.02 QUALITY ASSURANCE

A. Reliance Upon Approved Schedule.

1. The construction schedule as approved by the Engineer will be an integral part of the contract, and will establish interim contract completion dates for the various activities.

2. Should any activity not be completed within fifteen (15) days after the stated scheduled date, the Engineer shall have the right to order the Contractor to expedite completion of the activity by whatever means the Engineer deems appropriate and necessary, without additional compensation to the Contractor.

3. Should any activity be thirty (30) or more days behind schedule, the Engineer shall have the right to perform the activity or have the activity performed by whatever method the Engineer deems appropriate.

4. Costs incurred by the Engineer in connection with expediting construction activity under this Article shall be reimbursed to the Engineer by the Contractor.

5. It is expressly understood and agreed that failure by the Engineer to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered precedent-setting for any other activities.

6. Construction in progress meetings will be held monthly with the Contractor and the Engineer.

1.03 SUBMITTALS

A. Construction Schedule. Within ten (10) days after receipt of Notice to Proceed and prior to mobilization, submit a construction schedule.

B. Periodic Reports. The construction schedule shall be updated as described in Part Three of this section every two (2) weeks (14 days).

PART 2 - PRODUCTS

2.01 CONSTRUCTION ANALYSIS

A. Diagram/Chart. Graphically show the order and interdependence of all activities necessary to complete the work, and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose work is shown on the diagram. Activities shown on the diagram shall include, but are not necessarily limited to:

1. Project mobilization;

2. Submittals and approvals of shop drawings and samples;

3. Procurement of equipment and critical materials;

4. Fabrication of special material and equipment, and their installation and testing;

5. Final cleanup;

6. Final inspection and testing; and

7. All activities by the Engineer that affect progress, required dates for completion, or both, for all and for each part of the work.

The selection and number of activities shall be subject to the Engineer's approval.

Show on the diagram, as a minimum for each activity, the following:

1. Preceding and following event numbers;

2. Estimated duration of activities;

3. Earliest start date (by calendar date);

4. Latest start date (by calendar date);

5. Earliest finish date (by calendar date);

6. Latest finish date (by calendar date);

7. Slack or float (in calendar days); and

8. Percentage of activity completed.

C. Periodic Reports. If computer-aided means are used, list the activities in computer printout sorts as follows:

1. By the preceding event number from lowest to highest, and then in order of the following event number;

2. By the amount of float, then in order of preceding event numbers, and then in order of succeeding event numbers;

3. In order of preceding event numbers, and then in order of succeeding event numbers (show the dollar amount and dollars spent to date for each activity); and

4. Other sorts requested by the Engineer, for which the Contractor will be reimbursed in accordance with the General Conditions provisions for "Changes."

If computer-aids are not used, provide equivalent information to the approval of the Engineer.

PART 3 - EXECUTION

3.01 CONSTRUCTION SCHEDULE

A. Contents.

1. Show all activities of the Contractor under this work for the period between receipt of Notice to Proceed through project completion.

2. Complete the construction analysis described in Article 2.01 and 2.02 showing all activities of the Contractor under this project (contract).

3.02 PERIODIC REPORTS

A. Construction Schedule.

1. Report actual progress by updating the mathematical analysis.

2. Note on the summary report, or clearly show on a revised issue of affected portions of the detailed diagram, all revisions causing changes in the detailed program.

3. Revise the summary report as necessary for clarity.

4. Show activities or portions of activities completed during the reporting period, and their actual value.

5. State the percentage of work actually completed and scheduled as of the report date, and the progress along the critical path in terms of days ahead of or behind the allowable dates.

6. If the work is behind schedule, also report progress along other paths with negative slack.

7. Include a narrative report which shows, but is not necessarily limited to:

   a. A description of the problem areas, current and anticipated;

   b. Delaying factors, and their impact; and

   c. An explanation of corrective actions taken or proposed.

Show the date of the latest revision. Submit in accordance with this section.

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART I – GENERAL

1.1 DESCRIPTION

A. Work Included:

1. During the construction process, maintain an accurate record of changes and other pertinent, required measurements in the Contract Documents, as described in Section 3.1 below.

2. Upon completion of the Work, transfer the recorded changes and other pertinent, required measurements to a set of Record Documents, as described in Section 3.2 below.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, Project Drawings, General Conditions, Supplementary Conditions, and Technical Specifications of the Project Manual.

2. Other requirements affecting Project Record Documents may appear in other pertinent Sections in the Project Manual.

1.2 QUALITY ASSURANCE

A. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff, as approved by the Engineer. Identify this person during the pre-construction meeting. During construction, maintain one set of job record Drawings strictly for use in preparation of Record Drawings.

B. Accuracy of Records:

1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each sheet of the project Drawings.

2. Accuracy of records shall be such that future search for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Drawings.

C. Make entries within one calendar week of installation of the facilities.

1.3 SUBMITTALS

A. The Engineer's approval of the current status of Project Record Documents may be prerequisite to the Engineer's approval or requests for partial payment and shall be a prerequisite to the Engineer's approval of the request for final payment.

B. Prior to submitting each request for partial payment, secure the Engineer's (or his assigned field representative's) approval of the current status of the Project Record Documents.

C. Prior to submitting request for final payment, deliver the final Project Record Documents to the Engineer and secure his approval.

1.4 PRODUCT HANDLING

A. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work. After project completion, transfer all of the recorded data to the final Project Record Documents.

B. In the event of Contractor's loss of recorded data, use means necessary to field verify and secure the data to the Engineer's approval.

1. If necessary, in the opinion of the Engineer, remove and replace concealing materials.

2. If removal and replacement of concealing materials is warranted, provide replacements to the standards originally required by the Contract Documents and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 RECORD DOCUMENTS

A. Job Set(s): Promptly following receipt of the Owner's Notice to Proceed, secure from the Engineer at no charge to the Contractor three complete sets of all Contract Documents. Maintain one set of documents on the job site for day to day use. Maintain one set on the job site for day to day Record Drawing preparation. Obtain Engineer's approval, if in the Contractor's opinion, he can maintain accurate day to day Record Drawing information on his day to day use set of Contract Documents.

B. Office Set: Maintain one set of Contract Documents off-site for use during final data / information transfer and for delivery of final Record Drawings.

C. Final Record Documents: Upon substantial completion of the Work, and prior to issuance of final payment request, deliver one set to the Engineer for approval.

PART 3 – EXECUTION

3.1 MAINTENANCE OF JOB SET

A. Immediately upon receipt of the job set described in Paragraph 2.1-A above, identify each of the Documents with the title, "RECORD DOCUMENTS – JOB SET" and "RECORD DOCUMENTS – FINAL SET."

B. Method of Drawing Entry:

1. Using an erasable, colored-pencil (not ink or indelible pencil), clearly describe changes or other required dimensional data by graphic line and note as deemed reasonable by the Engineer.

2. Date all entries to obtain a somewhat accurate record of facility installation dates.

3. Call attention to the entry by a "cloud" drawn around the areas or areas affected.

4. In the event of overlapping changes, use different colors for the overlapping changes.

C. Required Drawing Entries:

1. Record any changes to the Contract Documents in the Record Documents. Changes may include but are not limited to: grade or alignment changes, plan and/or profile dimensional changes, conduit re-arrangements, electrical or control reconfiguring, structural design modifications, piping, fitting, or manhole re-alignments, etc.

2. Record the required dimensional information (whether specifically changed in the contract or not) for underground utilities as follows:

a. Where utilities generally parallel roadways, record perpendicular, lateral dimensions (to the nearest 0.5 feet) from roadway centerlines to the pipe or conduit centerlines on maximum of 100' intervals along the roadway and where the utility alignment changes.

b. Record depth of cover dimensions (to the nearest 0.1 feet) at each of the locations referenced in Section 3.1.C.2.a above and at each fitting (whether vertical or horizontal) or fitting cluster along the utility alignment.

c. Record three individual lateral dimensions (to the nearest 0.5 feet) from valve and manhole centerlines to permanent physical objects such as headwalls, fire hydrants, building corners, roadway centerlines, etc., that are shown on the Drawings.

d. Record depths of cover (to the nearest 0.1 feet), centerline stations and offset dimensions (to the nearest 0.5 feet and indicating left or right offsets) along a gravity sewer line, for each lateral service.

e. Record depth of cover dimensions (to nearest 0.5') for all bored service lines at intervals not exceeding 20' along the bore path. This information shall be sketched on the appropriate cross section to depict the actual bore path.

D. Schematic Conversion:

1. In some cases on the Drawings, the arrangement of conduits, ducts, circuits, piping, fittings, manholes, services, and similar items, are shown schematically and are not intended to portray precise physical layout.

a. In accordance with the contract intent, final physical arrangement is determined by the Contractor, but subject to the Engineer's approval.

b. However, design of future modifications of the facility may require accurate information as to the final physical layout of items that are shown only schematically on the Drawings.

2. Show on the Record Drawings, by dimension accurate to within (0.1 feet), the centerline of each run of items such as are described in subparagraph 3.1-D-1 above.

a. Clearly identify the item by accurate note such as "cast iron drain", "(size & material) water or sewer line", "(size & material) conduit", "(size & degree) fitting", etc.

b. Show, by symbol, note, or elevation the vertical location of the item ("under slab", "in ceiling plenum", "exposed", "feet MSL", etc.).

3. The Engineer may waive the requirements for conversion of schematic layouts where, in the Engineer's judgement, conversion serves no useful purpose. However, do not rely upon waives being issued except as specifically issued in writing by the Engineer.

3.2 FINAL PROJECT RECORD DOCUMENTS

A. The purpose of the final Project Record documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation, and examination.

B. Transfer of data to Drawings:

1. Carefully transfer change data shown on the job set of Record Drawings to the corresponding Office Set of Drawings, coordinating the changes as required.

2. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and the actual location of all required items.

3. Identify each entry by drawing a "cloud" around the area or areas affected.

4. Show entries neatly, consistently, and with the proper notations in a well-organized workmanlike manner.

C. Review and submittal:

1. Submit the completed, final set of Project Record Documents to the Engineer as described in Section 1.3 above.

2. Participate in review meetings as required.

3. Make required changes and promptly deliver the final Project Record Documents to the Engineer.

3.3 CHANGES SUBSEQUENT TO ACCEPTANCE

A. The Contractor has no responsibility for recording changes in the Work subsequent to Final Completion of the project and final acceptance of the Record Drawings, except for changes resulting from work performed under Warranty.

END OF SECTION

SECTION 02110

SITE CLEARING

PART 1 - GENERAL

10.1 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

This Section includes the following:

Protection of existing trees.

Removal of trees and other vegetation.

Topsoil stripping.

Clearing and grubbing.

1.03 PROJECT CONDITIONS

A. Traffic. Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.

B. Protection of Existing Improvements. Provide protections necessary to prevent damage to existing improvements to remain in place.

Protect improvements on adjoining properties and on Owner's property.

C. Restore damaged improvements to their original condition, as acceptable to property owner.

D. Protection of Existing Trees and Vegetation. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to be left standing.

E. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.

F. Provide protection for roots over 1 1/2 inch diameter that are cut during construction operations. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

G. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in a manner acceptable to Engineer. Employ a licensed arborist to repair damages to trees and shrubs.

H. Replace trees which cannot be repaired and restored to full-growth status, as determined by arborist.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

3.01 SITE CLEARING

A. General. Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions as required to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. "Removal" includes digging out and off-site disposing of stumps and roots. The cost for site clearing is incidental to the unit price cost of installing line work.

B. Cut minor roots and branches of trees indicated to remain in a clean and careful manner, where such roots and branches obstruct installation of new construction.

C. Topsoil. Topsoil is defined as friable clay loam surface soil found in a depth of not less than four (4) inches. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over two (2) inches in diameter, and without weeds, roots, and other objectionable material.

D. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.

Remove heavy growths of grass from areas before stripping.

Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.

E. Stockpile topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required, to prevent wind erosion.

F. Dispose of unsuitable or excess topsoil same as specified for disposal of waste material.

G. Clearing and Grubbing. Clear site of trees, shrubs, and other vegetation, except for those indicated to be left standing.

H. Completely remove stumps, roots, and other debris protruding through ground surface.

I. Use only hand methods for grubbing inside drip line of trees indicated to remain.

J. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

Place fill material in horizontal layers not exceeding six (6) inches loose depth, and thoroughly compact to a density equal to adjacent original ground.

3.02 DISPOSAL OF WASTE MATERIALS

A. Burning on Owner's Property. Burning is not permitted on Owner's property.

B. Removal from Owner's Property Remove waste materials from Owner's property.

END OF SECTION

SECTION 02220

EARTHWORK GENERAL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: Excavate, backfill, compact, and grade the site to the elevations shown on the Drawings, as specified herein, and as needed to meet the requirements of the construction shown in the Contract Documents. All excavation shall comply also with Kentucky OSHA 29 CFR Part 1926, Subpart P. Failure to comply with Subpart P will justify the issuance of a stop work order by the Owner.

B. Related work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use equipment adequate in size, capacity, and numbers to accomplish the work of this Section in a timely manner.

C. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the soil engineer.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

A. Fill and backfill materials:

1. Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over 6" in greatest dimension, and with not more than 15% of the rocks or lumps larger than 2-3/8" in their greatest dimension.

2. Fill material is subject to the approval of the soil engineer, and is that material removed from excavations or imported from off-site borrow areas, predominantly granular, non-expansive soils free

from roots and other deleterious matter.

3. Provide fill material free of rocks having a dimension greater than 1" in the upper 12" of fill or embankment.

2.02 TOPSOIL

A. Where and if shown on the Drawings or otherwise required, provide topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from subsoil, roots, heavy or stiff clay, stones, noxious weeds, sticks, brush, litter, and other deleterious matter.

B. Obtain topsoil from sources within the project limits, or provide imported topsoil obtained from approved sources outside the project limits, or from both sources.

2.03 SELECT BACKFILL

A. Use select backfill only as directed by the Engineer or as shown on the drawings.

B. Materials utilized for select fill shall be subject to the Engineer's approval. Provide select fill meeting the following requirements:

1. Compacted Limestone. Provide and place limestone dense graded aggregate conforming to Section 805 of the Kentucky Department of Highways Standard Specifications.

C. Payment will be made to the Contractor for the amount of select fill installed at the field engineer's request. Payment will not be made to the Contractor for select fill utilized in the replacement of defective work.

2.04 80 PSI FLOWABLE FILL CONCRETE

A. General. Provide flowable fill meeting the requirements specified in the following sections of the Kentucky Highway Department's current Standard Specifications for Road and Bridge Construction:

Portland Cement, Type I, Section 801
Sand, Section 804
Fly Ash, Class F, Section 844
Water, Section 803

Unless otherwise approved by the Engineer, proportion flowable fill as follows, per cubic meter (cubic yard):

Cement, 14 kg (30 lbs.)
Fly Ash, Class F, 136 kg (300 lbs.)
Sand (S.S.D.), 1360 kg (3000 lbs.)
Water (Maximum), 250 kg (550 lbs).

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 PROCEDURES

A. Utilities:

1. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to the Owner.

2. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.

3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.

4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer and secure his instructions.

5. Do not proceed with permanent relocation of utilities until written instructions are received from the Engineer.

B. Placing Flowable Fill Concrete:

Unless otherwise approved by the Engineer, deliver flowable fill in revolving drum truck mixers in accordance with Section 601 of the Kentucky Highway Department's current Standard Specifications for Road and Bridge Construction to ensure that the mixture is in suspension when placed. Agitation will be required during transportation and waiting time. Subsidence may occur if the mixer is not agitated. Place flowable fill by discharging directly from truck chutes into the trench or by means of conveyors, buckets or pumps.

Place flowable fill a minimum of eight (8) hours prior to the addition and compaction of any material above it unless other wise directed by the Engineer.

Unless otherwise indicated on the Drawings or in these Specifications, or unless otherwise directed by the Owner or Engineer, do not place flowable fill concrete directly on or around buried pipes. Any newly installed or existing pipelines located in a trench or other excavation to be backfilled with flowable fill concrete is to be bedded in granular material in keeping with the Drawing details from four (4) inches below to twelve (12) inches above the pipe for the entire trench width before placement of the flowable fill concrete.

C. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.

2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

D. Dewatering:

1. Remove all water, including rain water, encountered during construction to an approved location by pumps, drains, and other approved methods.

2. Keep excavations and site construction area free from water.

E. Use means necessary to prevent dust becoming a nuisance to the public,

to neighbors, and to other work being performed on or near the site.

F. Maintain access to adjacent areas at all times.

3.03 TRENCH EXCAVATION

A. General. Excavate trenches in open cut, by a trencher or backhoe of sufficient depth and width to meet the requirements of the installation section of these specifications. Provide no abrupt changes in grade of the main.

B. Trenching Operations. Conduct the excavation in such a manner as to cause the least interruption or hazard to traffic. Exercise caution to avoid damage to surfaced roadways and repair any such damage to an equal of its original condition. Restore drainage structures damaged during the work, or obstructed by operations, to satisfactory condition as soon as possible. Where traffic must cross open trenches, provide suitable bridges and flagmen.

C. Line Excavation. Make the excavation so that the entire length of the main shall lie upon the bottom of the trench. Excavation around all connections shall be of sufficient size to admit a free access for making the required connection. Where noted on the Plans, remove excavated material from the trench by loading directly into a truck, and hauling to a predetermined dump site not located within the realm of the project.

D. Length. Do not advance the excavation of the trench more than fifty (50) feet ahead of the pipe work, except where it is necessary to drain wet ground. The Contractor must assume the risk of meeting water, quicksand, hardpan, boulder clay, and existing utility lines.

E. Excavated Material. Store excavated materials to be used as backfill in a neat pile adjacent to the excavation. Do not endanger the work, traffic, or obstruct drainage unnecessarily. Remove excavated materials not suitable for backfilling, or surplus backfill and suitably dispose of within a twenty-four (24) hour period. Where noted on the Plans, remove excavated material from the trench, load directly into a truck, and haul to a predetermined dump site not located within the realm of the project.

F. Open Trench. Do not open more than one hundred (100) linear feet of trench at any one time, including sections partially backfilled and being tested.

G. Ditch Protection. To prevent caving or to protect existing roadways, utilities, or structures, sheet or brace the trench as necessary. Sheeting, where required, shall remain in place until the pipe has been laid and tested. Where sheeting is placed, the earth above the pipe shall be well

tamped for a depth of at least six (6) inches above the pipe barrel.

H. Dewatering. Keep trenches and other excavations adequately dewatered. Place discharge from pumps, drains, or bailing in such a way as to not introduce turbidity, sediments, or other pollutants into ditches, storm drains or natural drainage ways.

I. Trench Bottoms. Follow uniform grades. Trench dimensions shall conform to the typical details of the plans, with additional excavation at the couplings to allow full pipe bearing.

J. Pipe Bearing Surface. Dress the trench so that the barrel of the pipe bears evenly for its full length. Dig bell holes at each joint, dimensions of the holes to be sufficient to permit proper jointing.

Do not lay pipe resting on rock, blocking, or other unyielding objects. Where the trench bottom uncovered at subgrade is rock, cut the trench and lay the pipe on an evenly spread and compacted cushion. The cushion shall be at least four (4) inches and not more than eight (8) inches in depth above bottom of trench and shall uniformly support the barrel of the pipe. Construct the cushion from material indicated for use as pipe bedding.

Where the trench bottom is soft and in the opinion of the Engineer, cannot support the pipe, cut the trench as directed and install a suitable cradle. In general, the cradle shall be of pit run sand and gravel, or of small crushed stone or chips.

3.04 FILLING AND BACKFILLING

A. General:

1. For each classification listed below, place acceptable soil material in layers to required subgrade elevations.

2. In excavations: Use satisfactory excavated or borrow material.

3. Under roadway pavements: Use flowable fill.

4. Under drives/parking: Use select fill.

B. Backfill excavations as promptly as progress of the Work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including, where applicable, dampproofing and waterproofing.

2. Inspecting, testing, approving, and recording locations of underground utilities.

3. Removing concrete formwork.

4. Removing shoring and bracing, and backfilling of voids with satisfactory materials.

5. Removing trash and debris.

6. Placement of horizontal bracing on horizontally supported walls.

C. Ground surface preparation:

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious matter from ground surface prior to placement of fills.

2. Plow, strip, or break up sloped surfaces steeper than one vertical to four horizontal so that fill material will bond with existing surface.

3. When existing ground surface has a density less than that specified under "compacting" for the particular area, break up the ground surface, pulverize, moisture condition to the optimum moisture content, and compact to required depth and percentage of maximum density.

D. Placing and compacting:

1. Place backfill and fill materials in layers not more than 8" in loose depth.

2. Before compacting, moisten or aerate each layer as necessary to provide the optimum moisture content.

3. Compact each layer to required percentage of maximum density for area.

4. Do not place backfill or fill material on surfaces that are muddy, frozen, or containing frost or ice.

5. Place backfill and fill materials evenly adjacent to structures, to required elevations.

6. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around the structure to approximately the same elevation in each lift.

7. Where the construction includes basement or other underground walls having structural floors over them, do not backfill such walls until the structural floors are in place and have attained sufficient strength to support the walls.

3.05 GRADING

A. General:

1. Uniformly grade the areas within limits of grading under this Section, including adjacent transition areas.

2. Smooth the finished surfaces within specified tolerance.

3. Compact with uniform levels or slopes between points where elevations are shown on the Drawings, or between such points and existing grades.

4. Where a change of slope is indicated on the Drawings, construct a rolled transition section having a minimum radius of approximately 8'0", unless adjacent construction will not permit such a transition, or if such a transition defeats positive control of drainage.

B. Grading outside building lines:

1. Grade areas adjacent to buildings to achieve drainage away from the structures, and to prevent ponding.

2. Finish the surfaces to be free from irregular surface changes, and:

a. Shape the surface of areas scheduled to be under walks to line, grade, and cross-section, with finished surface not more than 0.10 ft above or below the required subgrade elevation.

b. Shape the surface of areas scheduled to be under pavement to line, grade, and cross-section, with finished surface not more than 0.05 ft above or below the required subgrade elevation.

3.06 COMPACTING

A. Control soil compaction during construction to provide the minimum percentage of density specified for each area as determined according to ASTM D698.

B. Provide not less than the following maximum density of soil material compacted at plus or minus 2% of optimum moisture content for the actual density of each layer of soil material in place, and as approved by the Engineer.

1. Structures: Compact each layer of fill material or backfill material at 95% of maximum density.

2. Lawn and Unpaved Areas: Compact each layer of fill material or backfill material at 90% of maximum density.

3. Walks: Compact each layer of fill material or backfill material at 92% of maximum density or the minimum percent of maximum density as required by the governmental agency having jurisdiction over the work, whichever is more stringent.

4. Pavements: Compact each layer of fill material or backfill material at 95% of maximum density or the minimum percent of maximum density as required by the governmental agency having jurisdiction over the work, whichever is more stringent.

C. Moisture control:

1. Where layer of soil material must be moisture-conditioned before compacting, uniformly apply water to layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.

2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compacting to the specified density.

3. Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture density relation tests approved by the Engineer.

3.07 FIELD QUALITY CONTROL

A. Secure the Engineer's inspection and approval of fill layers before subsequent construction is permitted thereon.

Density testing will be required on all fill layers located under structures and paved surfaces or as directed by the Engineer. All testing shall be in accordance with ASTM D2922 and shall be paid for by the Contractor.

B. Provide at least the following tests to the approval of the Engineer:

1. At paved areas, at least one field density test for every 2000 sq ft of paved area, but not less than three tests;

2. In each compacted fill layer, one field density test for every 2000 sq ft of overlaying paved area, but not less than three tests.

C. If, in the Engineer's opinion based on reports of the testing laboratory, subgrade or fills which have been placed are below specified density, provide additional compacting and testing under the provisions of these Specifications.

3.08 MAINTENANCE

A. Protection of newly graded areas:

1. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds;

2. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.

B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction.

END OF SECTION

SECTION 02221

EARTHWORK - UNDERGROUND UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the Work.

B. Related work:

1. Section 02220: Earthwork - General.

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

C. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the Engineer.

PART 2 - PRODUCTS

2.01 See Section 02220 Subpart 2.01 of this Specification.

2.02 OTHER MATERIALS

Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FINISH ELEVATIONS AND LINES

Shall be as shown on drawings.

3.03 PROCEDURES

See Section 02220 Subpart 3.04 of this Specification.

3.04 TRENCHING

A. Comply with pertinent provisions of Section 02220, and the provisions of this Section.

B. Provide sheeting and shoring necessary for protection of the Work and for the safety of personnel.

1. Prior to backfilling, remove all sheeting, unless otherwise approved to remain by the Engineer.

2. Do not permit sheeting to remain in the trenches except when, in the opinion of the Engineer, field conditions or the type of sheeting or methods of construction such as use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, the Engineer may permit portions of sheeting to be cut off and remain in the trench.

C. Open cut:

1. Excavate for utilities by open cut.

2. If conditions at the site prevent such open cut, and if approved by the Engineer, trenching may be used.

3. Short sections of a trench may be tunneled if, in the opinion of the Engineer, the conductor can be installed safely and backfill can be compacted properly into such tunnel.

4. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, backfill the voids remaining after removal of the objects as directed by the Engineer.

5. When the void is below the subgrade for the utility bedding, use suitable earth materials and compact to the relative density directed by the Engineer, but in no case to a relative density less than 90%.

6. When the void is in the side of the utility trench or open cut, use suitable earth or sand compacted or consolidated as approved by the Engineer, but in no case to a relative density less than 80%.

7. Remove boulders and other interfering objects, and backfill voids left by such removals, at no additional cost to the Owner.

8. Excavating for appurtenances:

   a. Excavate for manholes and similar structures to a distance sufficient to leave at least 12" clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.

   b. Overdepth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as directed by the Engineer, and at no additional cost to the Owner.

D. Trench to the minimum width necessary for proper installation of the utility, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the utility.

E. Depressions:

1. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.

2. Except where rock is encountered, do not excavate below the depth indicated or specified.

3. Where rock is encountered, excavate rock to a minimum overdepth of 4" below the trench depth indicated or specified.

F. Where trenching occurs in existing lawns, remove turf in sections and keep damp. Replace turf upon completion of the backfilling.

G. Cover:

Provide minimum trench depth indicated on the standard details in the drawings or as directed by the Engineer.

3.05 BEDDING

Provide bedding as indicated on the Drawings.

3.06 BACKFILLING

A. General:

1. Do not completely backfill trenches until required testing has been performed, and until the utility systems as installed conforms to the requirements specified in the pertinent Sections of these Specifications.

2. Except as otherwise specified or directed for special conditions, backfill trenches to the ground surface with selected material approved by the Engineer.

3. Reopen trenches which have been improperly backfilled, to a depth as required for proper compaction. Refill and compact as specified, or otherwise correct to the approval of the Engineer.

4. Do not allow or cause any of the Work performed or installed to be covered up or enclosed by work of this Section prior to required inspections, tests, and approvals.

5. Should any of the Work be so enclosed or covered up before it has been approved, uncover all such Work and, after approvals have been made, refill and compact as specified, all at no additional cost to the Owner.

B. Lower portion of trench:

1. Deposit approved backfill and bedding material in layers of 6" maximum thickness, and compact with suitable tampers to the density of the adjacent soil, or grade as specified herein, until there is a cover of not less than 24" over utility lines.

2. Take special care in backfilling and bedding operations to not damage pipe and pipe coatings.

C. Remainder of trench:

1. Except for special materials for pavements, backfill the remainder of the trench with material free from stones larger than 6" or ½ the layered thickness, whichever is smaller, in any dimension.

2. Deposit backfill material in layers not exceeding the thickness specified, and compact each layer to the minimum density directed by the Engineer.

D. Adjacent to buildings: Mechanically compact backfill within ten feet of buildings.

3.07 DRILLING

A. General. All drilling under the highway, blacktop roads, drives, walks, signs, parking areas and any other locations designated by the Engineer, shall be performed by a traditional rotary drill with guide tracks or with the prior approved use of direction drilling technology and shall be drilled large enough to accommodate the respective pipe including bells, joints, couplings, etc., to the satisfaction of the Engineer.

B. Right-of-Way Crossing. The crossing described above shall be made in accordance with the requirements and regulations of the authority under whose right-of-way the crossing is being made and in accordance with the details shown on the Drawings.

C. Crossing Permits. The Contractor shall maintain copies of all permits on site at all times and adhere to provisions specified within the permit document.

D. Service Crossing. The customer service line to the meter boxes shall be drilled or jacked under the existing highway or blacktop surface in a manner not to destroy any of the existing surface.

E. Existing streets and driveways damaged by excavation shall be restored to their original condition.

F. Driveways, as excavated for the proposed utility lines, shall be replaced within twenty-four (24) hours; however, accessibility to the property shall not be impeded beyond the end of a regular working day. Approved steel bridging material and/or backfilling shall be used to provide a smooth and safe access to said property. Provide property owner notifications a minimum of 48 hours prior to excavating driveways.

END OF SECTION

SECTION 02490

LANDSCAPING AND SEEDING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: Provide lime, fertilizer, seed, and mulch as specified herein, and needed for a complete and proper installation.

B. Related work:

1. Section 02220: Earthwork General.

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1. Seeding Material: Meet or exceed the specifications of the Kentucky Seed Improvements Association.

1.03 SUBMITTALS

A. Submit six (6) copies of product data sheets on material to be used.

B. Product data: Within 14 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:

1. Complete materials list of items proposed to be provided under this Section.

2. Sufficient data to demonstrate compliance with the specified requirements.

PART 2 - PRODUCTS

2.01 FERTILIZER

Provide commercial balanced 10-10-10 fertilizer delivered to the site in bags labeled with the manufacturer's guaranteed analysis. Uniformly apply 1,000 pounds per acre of premium fertilizer prior to seeding.

2.02 SOIL AMENDMENT

Provide agricultural limestone. Uniformly apply two (2) tons of agricultural limestone per acre immediately prior to seedbed preparation.

2.03 MULCH

Provide wheat and rye straw. Uniformly apply two (2) tons per acre immediately subsequent to seeding.

2.04 GRASS SEED

A. General: Provide Kentucky 31 Fescue seed which is:

1. Free from noxious weed seeds, and recleaned;

2. Grade A recent crop seed;

3. Treated with appropriate fungicide at time of mixing; and

4. Delivered to the site in sealed containers with dealer's guaranteed analysis.

B. Uniformly apply three hundred (300) pounds per acre immediately following the application of the lime and fertilizer.

C. In the event that seeding is performed between October 15th and March 31st, uniformly apply one hundred (100) pounds per acre of annual rye in addition to the above-mentioned three hundred (300) pounds per acre of Kentucky 31 Fescue.

2.05 PLANT MATERIALS

Provide the plant materials called out on the Drawings.

2.06 OTHER MATERIALS

Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 SOWING TURF GRASS

A. Stage 1: Initial Dressing.

1. Definition. Initial dressing consists of backfilling, compacting (if required), and mounding the excavated material over the utility trench. Rake the remaining construction path free of earth, debris, pipe, etc., except within a section limited to two feet (2') either side of the trench. Mound earth to a height not to exceed three feet (3').

2. Scheduling. Do not lay utility lines more than three hundred feet (300') ahead of the Stage 1 dressing area unless prior approval is obtained from the field engineer, and in no case shall construction areas remain undressed for more than three (3) days.

B. Stage 2: Final Dressing.

1. Definition. Final dressing consists of grading all disturbed areas within the scope of the project to their specified elevations and slopes, raking and disposing of rocks, clods, and debris from the Stage 1 dressing areas, seeding, liming, fertilizing, and mulching the State 1 dressing areas to the satisfaction of the Owner and Engineer.

2. Preparation of Seed Bed. Where the area to be seeded is not sufficiently pulverized to provide good seed bed, the seed bed shall be prepared by pulverizing the soil to a minimum depth of two inches (2") with a disk harrow, drag harrow, spike tooth or similar tool, im-mediately prior to seeding. All clods, rocks and undesirable material that would interfere with seeding operations shall be removed.

3. Scheduling. Upon completion of the underground work as described in these Contract Documents and as shown on the Drawings, perform the Stage 2 final dressing. In the event that the Contractor is unable to re-enter the Stage 1 areas due to adverse weather conditions, the Contractor shall request a time extension in writing to the Engineer. After approval from the Engineer and the Owner, leave the project and return at the earliest practical time to complete final dressing.

3.03 INSPECTION

A. In addition to normal progress observations, schedule and conduct the following formal inspections, giving the Engineer at least 24 hours

advance notice of readiness for inspection:

1. Final inspection after completion of sowing:

   Schedule this inspection sufficiently in advance, and in cooperation with the Engineer in order that final inspection may be conducted within 24 hours after completion of sowing.

2. Final inspection at the end of the maintenance period, provided that previous deficiencies have been corrected.

3.04 MAINTENANCE

A. Maintain planting, starting with the planting operations and continuing for 30 calendar days after planting is complete and approved by the Engineer.

B. Work included:

1. Watering, weeding, cultivating, spraying, and pruning necessary to keep the plant materials in a healthy growing condition and to keep the planted areas neat and attractive throughout the maintenance period.

2. Provide equipment and means for proper application of water to those planted areas not equipped with an irrigation system.

3. Protect planted areas against damage, including erosion and trespassing, by providing and maintaining proper safeguards.

C. Replacements:

1. At the end of the maintenance period, all plant material shall be in a healthy growing condition.

2. During the maintenance period, should the appearance of any planted area indicate weakness and probability of dying, immediately resow that area without additional cost to the Owner.

D. Extension of maintenance period:

Continue the maintenance period at no additional cost to the Owner until previously noted deficiencies have been corrected, at which time the final inspection will be made.

PART 4 - PAYMENT

4.01 Landscaping and Seeding Pay Limits.

The pay limits for landscaping and seeding shall be limited to ten feet (10') either side of the installed utility lines for a total width of twenty feet (20'). Landscape and seed all areas outside the pay limits in accordance with the provisions of this section. Consider landscaping and seeding work outside of the designated pay limits incidental to the contract. Do not include the additional landscaping and seeding work in the pay quantity for landscaping and seeding. No payment shall be made for landscaping and seeding until Stage 2 dressing is complete to the satisfaction of the Owner and the Engineer.

END OF SECTION

SECTION 02505

DENSE GRADED AGGREGATE & CRUSHED STONE BASE

PART 1 - GENERAL

1.01 DESCRIPTION

This work includes the compaction and installation requirements of Dense Graded Aggregate or Crushed Stone Base as a subbase for driveways and cast-in-place structural concrete.

A. Definitions.

1. Dense Graded Aggregate (DGA): DGA shall consist of premixed base materials of crushed stone binder material and water and shall be compacted on an existing subgrade to a finished thickness in areas specified on the drawings.

2. Crushed Stone Base (CSB): CSB shall consist of premixed base materials of crushed stone binder material and water and shall be compacted on an existing subgrade to a finished thickness in areas specified on the drawings.

B. Related Work.

Section 02220, Structural Excavations and Backfill.

Section 02221, Earthwork - Underground Utilities.

1.02 REFERENCES

A. Kentucky Department of Highways (KDOH) Standard Specification for Road and Bridge Construction, 2010 edition.

B. American Society of Testing and Materials (ASTM) Annual Book of Standards.

C-128	Specific Gravity and Absorption of Fine Aggregate.
C-127	Specific Gravity and Absorption of Coarse Aggregate.
D- 1241	Materials for Aggregate and Soil-Aggregate Subbase, Base, and Surface Course.
D-2922	Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).

PART 2 - PRODUCTS

2.01 MATERIALS

In accordance with Section 302, Paragraph 302.02 of the KDOH Specification, aggregate for use in DGA or CSB, shall be provided in accordance with Section 805, Paragraph 805.04.03(A) of the KDOH specification.

PART 3 - EXECUTION

3.01 INSPECTION

A. Verify the grades and elevations are correct.

B. Verify the subgrade is not soft, spongy, or composed of otherwise unstable materials. If unstable materials are encountered, stop work and notify the Construction Engineer.

3.02 INSTALLATION/APPLICATION/ERECTION

A. The method of construction and workmanship shall be in accordance with the Kentucky Department of Highways Standard Specification for Road and Bridge Construction, 2010 edition.

B. When additional base material is to be added to existing DGA or CSB base, scarify the existing base to a depth of 3 in. Add new stabilized aggregate base material and thoroughly mix with the old material by blading and compaction continued as for new aggregate base.

C. Maintain the finished base course in a condition satisfactory to the Construction Engineer until installation of concrete surfacing or final acceptance by the Construction Engineer. Repair or restore areas showing washes or looseness to the specified condition at no expense to the Owner.

3.03 FIELD QUALITY CONTROL

A. Testing - Buildings:

1. Compact each layer to an average dry density of not less than 95% of theoretical density based upon 84% of the solid volume. No individual test shall be less than 95% of the theoretical density. The density determination will be based on the bulk specific gravity in accordance with ASTM D-2922 or other ASTM in-place density test approved by the Construction Engineer. Maximum density determination and in-place density tests will

be performed by a certified testing lab. Costs associated with density testing shall be paid for by the Contractor.

2. The surface of the top layer shall not show any deviation in excess of 3/8 in. when tested with a 10-ft straight edge applied parallel to and at right angles to the center line of the paved area.

B. Testing - Other Areas:

1. Compact each layer to an average dry density of not less than 95% of theoretical density based upon 84% of the solid volume. No individual test shall be less than 95% of the theoretical density. The density determination will be based on the bulk specific gravity in accordance with ASTM D-2922 or other ASTM in-place density test approved by the Construction Engineer. Maximum density determinations and in-place density tests will be performed by the Contractor.

2. The surface of the top layer shall not show any deviation in excess of 3/8 in. when tested with a 10-ft straight edge applied parallel to and at right angles to the center line of the paved area.

END OF SECTION

SECTION 02511

HOT-MIXED ASPHALT PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings are the related Documents.

1.02 SUMMARY

This Section includes provisions for hot-mixed asphalt paving over prepared aggregate base.

A. Prepared Aggregate Base is specified in another Division 2 section.

B. Proof rolling of prepared subbase is included in this Section.

1.03 SUBMITTALS

A. General. Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.

DELETE BELOW IF PAVEMENT MARKING ADEQUATELY SHOWN ON DRAWINGS.

C. Pavement marking plan indicating lane separations and defined parking spaces. Note dedicated handicapped spaces with international graphics symbol.

1.04 SITE CONDITIONS

A. Weather Limitations. Apply prime and tack coats when ambient temperature is above 50 deg. F (10 deg. C) and when temperature has not been below 35 deg F (1 deg C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

Construct hot-mixed asphalt surface course when atmospheric temperature is above 40 deg. F (4 deg C) and when base is dry. Base

course may be placed when air temperature is above 30 deg F (minus 1 deg C) and rising.

B. Grade Control. Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.01 Materials and Mixture Proportions. Materials and production of hot-mixed asphalt pavement shall be in accordance with current K.D.O.T. for bituminous surface, bituminous binder, tack coats, and prime coast.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

A. General. Remove loose material from compacted aggregate base surface immediately before applying prime coat.

Proof-roll prepared aggregate base surface to check for unstable areas and areas requiring additional compaction.

Do not begin paving work until deficient aggregate base areas have been corrected and are ready to receive paving.

B. Prime Coat. Apply at rate of 0.20 to 0.50 gal. per sq. yd., over compacted aggregate base. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.

C. Tack Coat. Apply to contact surfaces of previously constructed asphalt or Portland cement concrete and surfaces abutting or projecting into hot-mixed asphalt pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.

Allow to dry until at proper condition to receive paving.

Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

3.02 PLACING MIX

A. General. Place hot-mixed asphalt mixture on prepared surface, spread, and strike off. Spread mixture at minimum temperature of 225 deg F (107 deg C). Place areas inaccessible to equipment by hand. Place each course to required grade, cross-section, and compacted thickness.

B. Paver Placing. Place in strips not less than ten (10) feet wide, unless otherwise acceptable to Engineer. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

Immediately correct surface irregularities in finish course behind paver. Remove excess material forming high spots with shovel or lute.

C. Joints. Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density, and smoothness as other sections of hot-mixed asphalt course. Clean contact surfaces and apply tack coat.

Check surface areas at intervals as directed by Engineer.

END OF SECTION

SECTION 02713

WATER DISTRIBUTION SYSTEM

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work included – Provide treated water distribution system as shown on the Drawings, specified herein, and needed for a complete and proper installation.

B. Related Work – Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections, in Division 1 of these Specifications (as applicable).

1.02 QUALITY ASSURANCE – Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

A. Submit six (6) copies of product data sheets on material to be used.

B. Product Data

1. Materials list of items proposed to be provided under this Section;
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
3. Names and addresses of the nearest service and maintenance organization that readily stocks repair parts;
4. Manufacturer's recommended installation procedures which, when approved by the Engineer, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART 2 – PRODUCTS

2.01 PIPE, FITTINGS, AND ACCESSORIES

A. General – Provide pipe, fittings, and accessories complying with the following requirements:

B. Pipe

1. DIP (Ductile Iron Pipe)

(a) Ductile iron push on joint

Comply with ANSI A-21.11 (AWWA C111).

(b) Ductile iron flanged joint

Comply with either ANSI A-21.15 (AWWA C115) with a 125 pound flanged joint or ANSI B-16.1 - ANSI B16.5 with a 125 pound cast iron "Uni-Flange" adapter as manufactured by Uni-Flange Corporation.

2. PVC (Polyvinyl Chloride) Pipe

(a) Use rigid unplasticized polyvinyl chloride (PVC) complying with ASTM D1784 and D2241. The PVC compound used in the manufacture of this pipe shall meet or exceed the requirements for class 12454-A or 12454-B as

defined by ASTM D1784. Provide pipe with a standard dimension ratio (SDR) of 21 with pressure rating of 200 psi complying with ASTM D2241. Provide an NSF approved pipe for potable water service.

(b) In addition, Pipe shall be tested and inspected at the factory. Testing shall be accomplished in conformance with the following ASTM specifications utilizing the test methods specified therein:

Dimensions	ASTM D 3034-81 or ASTM F679-80 and D 2122-81
Extrusion Quality	ASTM D 2152-80
Pipe Stiffness (5%)	ASTM D 2412-77
Impact Resistance	ASTM D 2444-80

3. HDPE (High Density Polyethylene) Pipe – Use HDPE with a standard dimension ratio (DR) of 11 with a working pressure rating of 160 psi and conforming to ASTM F714 and D3035. The pipe shall be sized with standard iron pipe size (IPS) and shall be DriscoPlex 4100 or approved equal.

4. Restrained-Joint PVC Pipe – Use Certa-Lok C900/RJ PVC pipe with a working pressure rating of 200 psi (DR 14) as manufactured by Certain Teed Pipe and Plastics Group or approved equal.

5. Fusible PVC Pipe – Shall be 200 psi (SDR 21) FPVC (Fusible PVC) as manufactured by Underground Solutions, INC or engineer approved equal.

C. Joints

1. DI (Ductile Iron) Push-On-Joint – Comply with ANSI A-21.11 (AWWA C111)

2. DI (Ductile Iron) Flanged Joint – Comply with either ANSI A-21.15 (AWWA C115) with a 125-lb flanged joint or ANSI B-16.1 - ANSI B16.5 with a 125-lb cast iron "Uni-Flange" adapter as manufactured by Uni-Flange Corporation.

3. PVC (Polyvinyl-Chloride) Joint

(a) Provide a push on type joint with a continuous elastomeric ring gasket compressed into the annular space between bell and spigot end of pipe complying with ASTM D3139.

(b) A typical joint assembly shall be tested by a qualified independent laboratory per test requirements of ASTM D3212-81. The manufacturer shall submit to the Engineer sufficient copies of certification and test results by shipment to the job site that will permit the Owner to retain two copies.

(c) Fusible PVC joints shall be formed in accordance with the manufacture's specifications.

4. HDPE (High Density Polyethylene) Joint – Form joints by heat fusion method in accordance with the manufacturer's recommendations and ASTM D3261.

D. Fittings

1. Use mechanical joint fittings for all exterior below grade pressure piping complying with AWWA C153.

2. Use cement lining complying with ANSI A-21.4 (AWWA C104) with a bituminous seal coat.

3. All fittings must be manufactured in the United States of America unless

otherwise approved by the Engineer.

4. Double wrap all fittings with 8-mil polyethylene wrap prior to placing concrete thrust blocking. Tape polyethylene wrapping around pipe barrels to provide a water tight seal around the fittings. Costs for poly-wrap shall be considered incidental to the cost of fittings.

5. HDPE Fittings – Use HDPE fittings conforming to AWWA C906 requirements. Provide mechanical joint adapter kits at transition points to other pipe types.

E. Valves

1. Gate Valves

(a) Provide gate valves in accordance with Section 15110 of these specifications.

(b) Provide connections as required for the piping in which they are installed.

(c) Provide all exterior below grade valves with standard operating nut and all interior valve with handwheel. Provide two (2) tee handle socket operating wrenches of suitable size and length.

(d) Provide below grade valves with valve boxes of the screw type adjustable pattern with a lid marked water as described in E.4 below.

(e) Valves 3" and smaller

(1) Provide all bronze, screwed, single wedge disc, screw in bonnet, packing gland, and nut, with a non-rising stem.

(2) Provide below grade valves with a suitable precast concrete box with a lid marked water.

2. Butterfly Valves

(a) With the exception of tapping valves, all valves 16” and larger shall be butterfly valves unless otherwise noted on the drawings.

(b) Provide butterfly valves in accordance with Section 15110 of these specifications.

3. Tapping Valves – Use tapping valves meeting the general operating and material requirements of Section E.1. of this specification. Use Mueller RWGV tapping valve, or approved equal.

4. Valve Boxes

(a) For butterfly valves, use cast iron, slip type adjustable pattern, similar and equal to Bingham & Taylor or Utility Pipe Model CVB562. For gate valves, use cast iron screw type adjustable pattern, similar and equal to Bingham & Taylor 4905.

(b) The boxes shall have a lid marked "water" similar and equal to Bingham & Taylor 4905-L1.5.

(c) The valve boxes shall be of sufficient length to permit the valve to set at the depth indicated by required cover on the pipe shown on the Drawings. Provide cast iron valve box extensions, as necessary, similar or equal to Bingham & Taylor 4905-X.

(d) Provide valve stem extensions on all water lines greater than 6 feet deep. Valve stem extensions shall be similar or equal to Bingham & Taylor 5051.

F. Restraint Joint Gaskets – Use restrained joint gaskets in all DIP installation within steel encasement. In addition, use restrained joint gaskets in all pipe joints within creek crossings and roadway crossings and within one DIP pipe joint connection either side of steel encasement. Use "Field Lok" gaskets as manufactured by U.S. Pipe and Foundry Company.

G. Thrust Restraint Glands for Ductile Iron Pipe – Use thrust restraint glands ensuring 360° contact between the gland and the pipe wall. Uni-Flange Series 1300 joint restraint devices as manufactured by Ford Meter Box Company, Inc. or approved other. Use thrust restraint glands on each mechanical joint connection 6" in diameter and larger.

H. Thrust Restraint Glands for PVC Pipe – Use thrust restraint glands ensuring 360º contacts between the gland and the pipe wall. Use Uni-flange Series 1300 joint restraint devices as manufactured by Ford Meter Box Company, Inc. or approved other. Use thrust restraint glands for PVC pipe on each mechanical joint connection 6" in diameter and larger.

SO-EZ MJ Gland Snap-On Gaskets, as manufactured by Ford Meter Box Company, Inc. shall not be accepted for use on any mechanical joint piping or restraint.

I. Joint Restraint Glands for PVC Pipe – Use joint restraint glands ensuring 360° contact between the gland and the pipe wall. Use Uni-Flange Series 1390 joint restraint devices as manufactured by Ford Meter Box Company, Inc., or approved other. Use joint restraint glands at field engineer's discretion or as shown on the Plans.

J. Petroleum -Resistant Gaskets – Where noted on the drawings, provide petroleum-resistant gaskets for push-on and mechanical joint fittings. Petroleum-resistant gaskets shall be manufactured from Nitrile in accordance with AWWA C111.

K. Stainless Steel All-thread Rods – Use 3/4" diameter stainless steel all-thread rods complying with ASTM Type 303 stainless steel. Use rods at field engineer's discretion or as shown on the Plans. Cost associated with contractor installation, equipment, materials, etc., is incidental to the cost for pipe.

L. Service Saddles – Use service saddles as manufactured by Ford Meter Box Company with all service connections made on PVC or asbestos cement pipe.

M. Tapping Sleeves – Use stainless steel tapping sleeves as manufactured by Romac Industries, Inc., Seattle, Washington, or approved equal.

N. Steel Casing Pipe – Use steel casing pipe conforming to ASTM A139. All encasement shall have a minimum yield strength of 35,000 psi and a minimum thickness of .25 inches for casing diameter of 16 inches and less, 0.312 inch thickness for casing diameters of 18, 20, and 22 inches, and 0.344 inch thickness for casing diameter of 24 inches. Coat the outside of all steel encasement pipe with either an epoxy or bituminous coating. Casing spacers and end seals are considered incidental to the unit price of the steel encasement.

O. Fire Hydrants

1. General

(a) Use fire hydrants complying in all respects with the latest revision for AWWA C502. use fire hydrants with one (1) 4½" pumper nozzle with National Standard Thread and two (2) 2½" bronze hose nozzles with National Standard Thread. Secure all caps with long heavy chains. Use hydrants with a one piece bronze operating nut to be opened in a counterclockwise direction. Use hydrants with a compression main valve,

bronze seat ring with bronze seating. Bronze upper plate, high tensile steel stem, and O-ring seals. The inlet valve opening shall be 5¼" diameter with 6½" ID standpipe section and a 6" high strength cast iron inlet connection.

(b) Use hydrants with replaceable, breakable sections, or components such that in the event the barrel is broken off, the valve will remain closed, the barrel will not be damaged, and the stem will not be bent.

(c) Furnish hydrants from the factory with one shop coat of bright red Inertol Rust Inhibitive Primer No. 621 with a minimum dry mil thickness of 1.5.

(d) Use Mueller Super Centurion 250, Kennedy, or approved other.

2. Hydrant Valves – Equip all 5¼" hydrants with 6" gate valves as shown on the drawings.

3. Anchoring Tee – Use standard mechanical joint anchoring tees with a split ductile iron rotating gland on the branch. Use trim tyte ductile iron mechanical joint anchoring tees as manufactured by U.S. Pipe and Foundry Company, Birmingham, Alabama, or an approved equal.

4. Hydrant Connecting Pieces – Use hydrant connecting pieces with integrally cast standard mechanical joint on one end and a split ductile iron rotating gland on the other. Use hydrant connecting pieces as manufactured by American Cast Iron Pipe Company, Birmingham, Alabama, No. A108954 or an approved equal.

P. Copper Pipe – Service Lines

1. Pipe – Unless otherwise indicated on the drawings, use Type "K" soft copper tubing complying with ASTM Specifications B 88 and AWWA Specification C800. Install service lines with a continuous run of pipe from the main to the meter.

2. Fittings – All fittings or unions for the copper service lines shall be of standard brass compression stop type for flared connections. Threads on fittings shall conform to AWWA C800, "Standard Threads for Underground Service Line Fittings."

3. Verification – Verify the size of existing service lines prior to installation of replacement or relocated service lines. Notify the Engineer prior to installation of any discrepancies between plan information and field verified information.

Q. Polyethylene Pipe – Service Lines

1. Pipe – Only as indicated on the drawings, use copper tubing size P.E. Municipal Service tubing complying with ASTM Specifications ASTM D2737. Install service lines with a continuous run of pipe from the main to the meter. All PE service lines shall be installed with a continuous run of tracer wire.

2. Fittings – All fittings or unions for the P.E. service lines shall be of standard brass type for pack joint connections. Threads on fittings shall conform to AWWA C800, "Standard Threads for Underground Service Line Fittings."

3. Verification – Verify the size of existing service lines prior to installation of replacement or relocated service lines. Notify the Engineer prior to installation of any discrepancies between plan information and field verified information.

PART 3 – EXECUTION

3.01 SURFACE CONDITIONS – Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENT – Make necessary measurements in the field to assure precise fit of items in accordance with the approved design.

3.03 HANDLING

A. Handle pipe accessories so as to ensure delivery to the trench in sound, undamaged condition:

1. Carry pipe into position; do not drag.

2. Use pinch bars or tongs for aligning or turning the pipe only on the bare end of the pipe.

B. Thoroughly clean interior of pipe and accessories before lowering pipe into trench. Keep clean during laying operations by plugging or other method approved by the Engineer.

C. Before installation, inspect each piece of pipe and each fitting for defects: Material found to be defective before or after laying: Replace with sound material meeting the specified requirements, and without additional cost to the Owner.

D. Store rubber gaskets in a-cool dark place until just prior to time of installation.

3.04 PIPE CUTTING

A. Cut pipe neatly and without damage to the pipe.

B. Unless otherwise recommended by the pipe manufacturer, and authorized by the Engineer, cut pipe with mechanical cutter only.

1. Use wheel cutters when practical.

2. Cut plastic pipe square, and remove all burrs.

3.05 LOCATING

A. Locate water line at least ten feet away, horizontally, and 18 inches, vertically, from sewer line.

B. Do not place water lines in the same trench with sewer lines or electric wiring.

C. Whenever it is necessary to deflect pipe from a straight line, either in the vertical or horizontal plane, to avoid obstruction of plumb stems, or where long-radius curves are permitted, the amount of deflection allowed shall not exceed that required for satisfactory making of the joint and comply with the manufacturer's allowable units.

3.06 PLACING AND LAYING

A. General

1. Lower pipe and accessories into trench by means of derrick, ropes, belt slings, or other equipment approved by the Engineer.

2. Do not dump or drop pipe work materials into the trench.

3. Lay pipe with the bells facing in the direction of laying, except where necessary in making connections to other lines.

4. Rest the full length of each section of pipe solidly on the pipe bed, with recesses excavated to accommodate bells, couplings and joints.

5. Take up and relay pipe that has the grade or joint disturbed after laying.

6. Do not lay pipe in water, or when trench conditions are unsuitable for the work.

7. Securely close open ends of pipe, fittings, and valves when work is not in

progress.

8. Where any part of coating or lining is damaged, repair to the approval of the Engineer and at no additional cost to the Owner.

9. All pipe laying shall be in strict accordance with manufacturers recommendations and installation manual unless otherwise specified.

3.07 JOINTING

A. Asbestos Cement Pipe

1. Install couplings in accordance with AWWA C603.

2. Install heavy couplings for service line connections in accordance with the recommendations of the manufacturer.

3.08 VALVES

A. Location – Valves shall be located as shown on the Plans and approved by the Engineer.

B. Valve Boxes and Valve Pits – A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve and shall be centered and plumb over the wrench nut of the valve using a centering disk as manufactured by American Flow Control or approved equal. The valve box shall be flush with the surface of the finished pavement or such other level as may be directed.

3.09 THRUST BLOCKING

A. General

1. Provide thrust blocks on plugs, caps, tees, and bends deflecting 11-1/4° or more either vertically or horizontally.

2. Provide KDOH Class B concrete for thrust blocking.

B. Installation

1. Prepare trench well or other supporting earth surface by exposing firm undisturbed soil just prior to concrete placement.

2. Place thrust blocks as shown in the typical details with sufficient volume of concrete.

3. Sides of thrust blocking not subject to thrust may be placed against forms.

4. Place thrust blocking so the fitting joints will be accessible for repair.

5. Place polyethylene wrap around fittings, bolts, and glands to prevent exposure to concrete. Costs associated with providing and installing poly-wrap shall be considered incidental to the unit price for fittings.

3.10 INSPECTING

A. Pressure Piping

1. Closing uninspected work – Do not allow or cause any of the work of this Section to be covered up or enclosed until after it has been completely inspected and tested, and has been approved by the Engineer.

3.11 TESTING & DISINFECTION

A. Scope:

The Contractor shall furnish all materials, equipment, tools and labor necessary to perform all of the tests called for and required herein. The hydrostatic tests shall consist of a pressure test and leakage test. The Contractor may backfill the pipe at his discretion; however, if the pipe has to be repaired it shall be uncovered, repaired and backfilled at no expense to the Owner.

B. Pressure Tests:

1. General. After the trench has been backfilled as specified, all newly laid pipe, or any valved section thereof, shall be subjected to 150 psi pressure test under the supervision of the Engineer and the Owner.

2. Length of Test. The duration of each pressure test shall be two hours, after reaching 150 psi.

3. Procedure. Each valve section of the pipe shall be slowly filled with water and the specified test pressure applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. The pump, pipe, connections, gauges and all necessary apparatus shall be furnished by the Contractor. The test connection shall be made at the highest point in the test section or provisions made for pressure differentials due to elevations. The test pressure may not vary $\pm$2 psi for the duration of the test. Provide pressure gauge with ability to read pressure in increments of 1 psi.

4. Expelling Air. Before applying the test pressure, all air shall be expelled from the pipe. If hydrants or blowoff valves are not available at high places, the Contractor shall make the necessary taps (requires service clamp and corporation stop) at points of highest elevation before the test is made with the approval of the Engineer. These taps shall be left in place and location marked.

5. Defects. Any cracked or defective pipes, fittings, valves or hydrants discovered in consequence of this pressure test shall be removed and replaced by the Contractor with new material in the manner specified and the test shall be repeated until satisfactory to the Engineer.

C. Leakage Test:

1. General. A leakage test shall be conducted concurrently with the pressure test. The duration of each leakage test shall be two hours and during the test, the main shall be subject to 150 psi pressure.

2. Permissible Leakage. Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any valved section thereof, necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

No pipe installation will be accepted until the leakage is less than the number of gallons per hour as determined by the following schedule:

Allowable Leakage Per 1,000 Feet of Pipeline			
Pipe Size (Inches)	**Maximum Loss (Gal./Hr.)**	**Test Pressure (PSI)**	**Test Period (Hours)**
18	1.66	150	2
12	1.10	150	2
10	0.92	150	2
8	0.74	150	2
6	0.55	150	2

3. Procedure. Each end of the main shall be capped. The main shall then be filled slowly with water by means of a pump connected to the low end of the main. The pump shall be connected to the main in a manner satisfactory to the Engineer. Provisions shall be made at the high end of the main to expel all air from the line. After all air has been expelled from the main, the water pressure in the main shall then be increased gradually to 150 psi. After the pressure has stabilized to 150 psi the test shall begin. Water required to maintain 150 psi shall be withdrawn from a calibrated container. The outlet end of any pressure regulating device shall discharge into the calibrated container in order to accurately determine the actual amount of water required to maintain the required 150 psi water pressure within the test section.

   Should any test of the pipe disclose leakage greater than that specified, the Contractor shall, at his own expense, repair the defective joints or sections until the leakage is within the specified allowance.

4. Final Acceptance. No pipe installation will be accepted until the leakage is less than the number of gallons per hour as specified in the above table for the size pipe being tested.

D. Disinfection:

1. All completed water mains, valves, tees, crosses, etc., shall be disinfected in accordance with "AWWA Standard for Disinfecting Water Mains ANSI/AWWA C651-99" and in accordance with the following requirements:

2. The mains shall be thoroughly disinfected before being placed in service by the use of chlorine or chlorine compounds in such amount as to produce a concentration of at least 50 PPM and a residual of at least 25 PPM at the end of 24 hours.

3. The chlorine residual at the end of the 24 hour period will be verified by the Contractor in the presence of the Engineer and a representative of the County Health Department. If the chlorine residual in the main is less than 25 ppm, the main shall be disinfected again.

4. After the chlorine residual has been verified, the main shall be thoroughly flushed until the chlorine concentration is found to be at levels equal to levels within the surrounding water system. A water sample shall be taken at that

time for a bacteria test to be performed by a state certified laboratory. The Contractor will be responsible for sampling and testing at his own expense.

5. All water used in disinfection shall be dechlorinated and approved by the Engineer or Owner's Representative prior to discharge to surface water or surrounding area.

END OF SECTION

SECTION 02800

HORIZONTAL DIRECTIONAL DRILLING

PART 1 - GENERAL

1.01 SCOPE

Furnish all labor, materials, tools, and equipment as necessary to drill horizontally under creeks/obstructions and install piping beneath creeks/ obstructions as shown on the plans and described herein.

Install creek crossings from upland staging areas to protect the banks from disturbance and consequent erosion. Bore below the bottom of the creek as shown on the Drawings so as not to disturb the bottom and preserve the original topography.

1.02 PROFILES AND TOPOGRAPHY

Contours, topography, and profiles of the ground shown on the Drawings are believed to be reasonably correct, but are not guaranteed to be absolutely so and are presented only as an approximation.

1.03 UTILITIES

Before work is started, locate utilities and other subsurface structures which may be affected by or interfere with the proposed construction.

PART 2 - PRODUCTS

2.01 CROSSING PIPE

A. Dimensions. Pipe specifications shall be as per Sections 02713 and 02820 of these specifications.

B. Joining Systems. Pipes shall be jointed to one another and to fittings by thermal butt fusion in accordance with manufacturer's recommendations. Depending upon the installation requirements and site location, joining shall be performed within or outside the excavation. Joints between pipe sections shall be smooth on the inside and internal projection beads shall not be greater than 3/16 inch.

The tensile strength at yield of the butt-fusion joints shall not be less than the pipe.

C. Tests.

1. General. Make tests for compliance with this Specification as specified herein and according to the applicable ASTM

specifications. Furnish a certificate of compliance with these specifications, along with a report of each test, by the manufacturer for all material furnished under this specification. In addition, the purchaser may, at his own expense, witness inspection and test of the materials.

2. Tensile Properties. Determine the tensile strength, yield strength, elongation, and elastic modulus of the material in accordance with ASTM D-638. Use ASTM D-638 to determine that the thermal butt-fusion joints are stronger than the materials joined.

3. Density. Determine the density of the base resin to be in accordance with ASTM D-1505.

D. Rejection. Pipe and fittings may be rejected for failure to meet any of the requirements of this specification, or Sections 02713 and 02820.

E. Deviations. Should a contractor choose to submit a bid using material that does not meet all the requirements of these specifications, he shall include a description of the deviation with data showing the magnitude of the deviation. Acceptance of such deviations to these specifications shall be subject to the review and approval of the Owner before a contract can be awarded.

PART 3 - EXECUTION

3.01 General. Install the piping and fittings in accordance with ASTM D-2774, Underground Installation of Thermoplastic Pressure Piping, and with the guidelines and recommendations of the manufacturer.

Install the pipe in the location to the line and grade designated on the Drawings with the pipe joints neatly fused together.

It is the intention that the flexible piping be bent so that subsurface obstruction may be circumvented.

Neatly pile all materials delivered to the project.

Lay out the pipe crossing alignment by land survey team confirming accurate horizontal distances, either physically measured or shot by Electric Distance Measurement. Locate entry and exit points and mark with survey hubs or markers. Include payment for survey lay-out in Lump Sum price bid under horizontal directional drilling.

Take the directional heading for drilling on the proposed alignment of the pipe crossing, with particular attention being made at keeping a safe distance from the iron magnetic objects so as to avoid interference with the drilling guidance system.

Steering equipment shall be housed in a non-magnetic bottom-hole assembly of the lead section of the non-magnetic drill pipe to allow for in-hole deviation at the front during the drilling of the pilot hole. Position the lead section along the same alignment as the proposed crossing from entry to exit.

Non-magnetic drill collars shall be included and drilled behind the non-magnetic bottom-hole assembly to serve as a buffer between the high magnetized pilot work-string and the steering guidance probe.

Establish reconnaissance stations every 10 feet or as agreed upon by the Owner to calculate and plot true vertical depth, horizontal distance, and right and left bearing drift. Record the advancement results of the drill on a gridded profile and plan, and submit a copy to the Owner.

Pilot hole alignment shall be accepted by Owner/Engineer in writing prior to reaming and pipe installation.

Enlarge the pilot hole to a size slightly larger than the outside diameter of the proposed pipe by a drilling-auger. Start the initial augering or reaming of the hole in the opposite direction taken by the pilot drill, that is, in the direction from pilot exit-point to pilot entry-point. Pull the drilling-auger back along the pilot hole toward the entry side (pilot hole exit-point) and enlarging or reaming process if necessary until hole is enlarged to the proper size.

Inject Bentonite through the drill pipe to suspend the cuttings keeping the hole filled with a slurry of Bentonite and cuttings. When the drilling-auger reaches the pilot drill entry-point on its final reaming pass, push the drilling-auger back through the pre-reamed hole to the exit side while at the same time injecting Bentonite.

After the final pass of enlarging the pilot hole, disconnect the drilling-auger at the pilot hole exit-point side and attach the pulling tractor, consisting of a swivel and a circulating sub to the pilot working string assembly or drill pipe. Attach the proposed pipe to the pulling tractor to be led back through the enlarged hole in the direction towards the pilot entry-point.

END OF SECTION

SECTION 02810

GRAVITY SEWER SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

Furnish all materials, equipment, tools, and labor necessary to install gravity sewer systems as shown on the Drawings.

1.02 REFERENCES

Unless otherwise noted, reference is made to the latest version of the documents listed below:

A. ASTM D3034, Standard Specifications for Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings

B. ASTM D1784, Standard Specifications for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds

C. ASTM F949, Standard Specification for Poly Vinyl Chloride (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings

D. ASTM D2122, Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

E. ASTM D2412, Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading

F. ASTM C478, Standard Specifications for Precast Reinforced Concrete Manhole Sections

G. Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, 2010 Edition

H. ASTM A615, Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

I. ASTM A139, Standard Specifications for Electric-Fusion (Arc) – Welded Steel Pipe (NPS 4 and Over)

J. ASTM D4479, Standard Specification for Asphalt Roof Coatings – Asbestos Free

K. ASTM D2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications

L. ASTM C1244, Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (vacuum) Test Prior to Backfill

M. The Uni-Bell PVC Pipe Association Handbook of PVC Pipe, Design and Construction, Fourth Edition, August 2001

1.03 QUALITY ASSURANCE

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

1.04 SUBMITTALS

A. Submit six (6) copies of product data sheets on material to be used.

B. Product Data:

1. Materials list of items proposed to be provided under this Section;

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;

3. Names and addresses of the nearest service and maintenance organization that readily stocks repair parts;

4. Manufacturer's recommended installation procedures which, when approved by the Engineer, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART 2 - PRODUCTS

2.01 PIPE, FITTINGS, AND ACCESSORIES

A. Plastic Pipe and Fittings:

1. Pipe – 8" & Smaller Gravity sewer pipe and fittings shall be type PSM Polyvinyl Chloride (PVC) sewer pipe conforming to the requirements of ASTM Specification D3034 for PVC pipe and fittings with a minimum standard dimension ratio (SDR) of 35 unless otherwise noted on the Drawings. The PVC compound used in the manufacture of pipe and fittings shall meet or exceed the requirements for classes 12454-B or 12454-C as defined by ASTM D1784.

2. Pipe – 10" & Larger Gravity sewer pipe shall be Polyvinyl Chloride (PVC) sewer pipe that meets or exceeds the requirements of ASTM D1784 for a minimum cell classification of 12454B or 12454C. The pipe shall be manufactured in accordance with ASTM F949 with a pipe stiffness of 50 psi as tested in accordance with ASTM D2412. Pipe dimensions shall meet the requirements of ASTM F949 when measured in accordance with ASTM D2122. All gravity PVC sewer pipe shall be as manufactured by JM Eagle (or approved equal) unless otherwise noted on the drawings.

3. Joining Systems. Use gravity sewer joints of the rubber gasket type. All joints shall provide a water tight seal. Rubber gaskets shall be marked to indicate nominal pipe sizes and proper insertion direction.

2.02 Precast Concrete Manholes. Provide precast concrete manholes and associated materials of the size indicated on the Drawings and meeting the following requirements:

A. Precast reinforced manholes and related appurtenances conforming with ASTM C 478. Seal manhole joints with "E-Z Stik" plastic gaskets or approved equal. Each gasket shall provide a watertight seal.

B. Manhole inverts shall be paved as shown on the Drawings upon delivery to the site. Provide a continuous drop in elevation from inlet to outlet unless otherwise shown on the plan/profile sheets.

C. Make pipe connections to new manholes utilizing PSX Direct-Drive gaskets as manufactured by Press Seal Gasket Corporation (or approved equal) placed into the manhole section as shown on the Drawings. Each rubber gasket connection shall provide a watertight seal.

D. Use Model No. R-1736 self-sealing manhole covers as manufactured by the Neenah Foundry Company or an approved equal.

E. Use steel reinforced plastic manhole steps as manufactured by MA Industries Model PSI-PF or approved equal.

F. Manholes and lift station structures shall be precast with admixture C-1000 as manufactured by the XYPEX Chemical Corporation. The product shall be applied to the concrete mix at the time of casting and at the rates recommended by the manufacturer. Concrete mix designs incorporating this product shall be submitted to the Engineer for review and approval prior to mix production. The pre-caster shall add a coloring pigment to all manholes containing XYPEX Admixture such that it is readily apparent which structures have been treated.

2.03 Grout. Use a non-shrink, non-metallic grout such as Sonopatch Concrete Repair Compound manufactured by Sonneborn Building Products or approved equal.

2.04 Concrete. Use concrete in conjunction with construction of manholes conforming to the Kentucky Department of Highways, "Standard Specifications for Road and Bridge Construction", Section 601, for all concrete. Use Class A concrete, 3,500 psi at 28 days, conforming to the following:

Slump	2” to 4”
Air Content	6% ± 2%
Temperature	45º - 90º

2.05 Metal Reinforcement. Use reinforcing steel free from paint, oil, grease, loose scale, dirt, or other substances that would prevent bond between steel and concrete. Use Bars No. 4 and larger conforming in all respects to the requirements of the latest revision of ASTM Specification A 615, Grade 60.

2.06 Steel Casing Pipe:

(1) Roadways. Install ASTM A139 steel encasement pipe under all highways and where shown on the Drawings where drilling or open cut installation is required for sewer mains. Encasement pipe sized up to 16" shall have a minimum yield strength of 35,000 psi and a minimum thickness of 0.25 inches and shall be thoroughly coated with asphalt bitumen on the outside. Encasement pipe larger than 16" shall be standard strength with wall thickness of 0.375 inches and shall be thoroughly coated with asphalt bitumen on the outside.

(2) Railroads. Install ASTM A139 steel encasement under all railroad right of way where drilling or open cut is required on the drawings. Encasement pipe 36” diameter shall have a minimum yield strength of 35,000 psi and a minimum nominal wall thickness of 0.500 inches. The exterior of the encasement shall be thoroughly coated with asphalt bitumen.

2.07 Bitumastic Concrete Sealant:

(1) General. Cover the outside surface of all concrete manholes with a bitumastic sealant upon or before installation and prior to vacuum testing. The sealant shall conform in all respects to ASTM D 4479 and be Pure Asphalt Fibrated Dampproofing as manufactured by Pure Asphalt Company, Inc. or approved other.

(2) Surface Preparation. Thoroughly clean the concrete surface of all dust, grease, oil, or other foreign particles. Dry the concrete surface prior to dampproofing. If the surface cannot be satisfactorily cleaned, use Pure Asphalt Primer to ensure proper adhesion.

(3) Application. Apply bitumastic sealant with a wide fiber brush or by light airless spray at a rate of 4 to 6 gallons per 100 square feet.

2.08 XYPEX Concrete Sealant

Where noted on the drawings, the interior of existing structures shall receive two coats of XYPEX concrete sealant as manufactured by the XYPEX Chemical Corporation.

(1) Coat #1. The first coat shall be XYPEX CONCENTRATE applied by brush in accordance with all manufacturer's recommended application rates and procedures.

(2) Coat #2. Apply XYPEX MODIFIED following application and curing of Coat #1. Application shall be by brush or spray in accordance with all manufacturer's recommended application rates and procedures.

PART 3 - EXECUTION

3.01 Surface Conditions. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 Handling. Handle pipe without dropping or bumping in a manner to ensure installation in a sound, undamaged condition. Lift pipe with slings or as recommended by the manufacturer. Do not use hooks in contact with joint surfaces. Use equipment for handling that is capable of the required work with an adequate safety factor against overturning or overloading.

3.03 Grade and Alignment:

A. Locate the line as shown on the Drawings to "center" on manholes.

B. Use laser equipment for gravity sewer installation to maintain the line and grade of the sewer line. Use targets designed for the size pipe to be installed. Verify the grade of the sewer every 100 feet (or as otherwise directed by the Engineer) using conventional leveling techniques.

C. Use offset stakes as necessary for the proper installation of manholes.

3.04 General:

A. Conform to the requirements of ASTM D2321 latest revision unless otherwise noted on the drawings or shown herein.

B. After the trench is excavated to subgrade as specified, fill the trench to grade with crushed stone as specified to provide a firm and satisfactory bed. Lay pipe of the designated class and required size to form closed joint with the next adjoining pipe, bringing the inverts continuously to the required line and grade shown on the Drawings.

C. Commence pipe laying at the lowest point on the line with the spigot or tongue ends placed in the direction of flow.

D. Limit joint openings to one-half inch (1/2") for rubber gasket joint and one-fourth inch (1/4") for plastic gasket joints.

E. Close all open ends at suspension of day's work with snug fitting closures, and any water accumulated in trench shall be removed prior to removing closure upon resumption of work.

F. Use care to prevent lateral displacement during bedding and backfilling.

G. Keep all line interiors clear of dirt or other foreign matter as work progresses and after installation.

3.05 Pipe Embedment Zone:

A. Unless otherwise directed by the Engineer, use #9m crushed limestone in compliance with the Kentucky Department of Highways "Standard Specifications for Road and Bridge Construction" and as certified/approved by the Kentucky Transportation Cabinet. Cost for bedding material is considered incidental to the cost of pipe installation.

B. Consult with the Engineer regarding bedding and embedment materials when ground water is encountered in the trench.

C. Place bedding and embedment materials in accordance with procedures outlined in ASTM D2321.

3.06 Joint Locations at Structures. Provide for differential movement between pipe the structure by locating the first joint not more than four (4) inches from structure wall. Embed pipe in concrete from structure wall to first joint.

3.07 Road and Drive Crossing. Bore all state highway crossings with steel encasement jacked into place as shown on the Drawings. Where noted on the plans, selected roadways and drives with county or city right of way may be open cut and backfilled with select backfill. Such crossing shall be sequenced

to minimize traffic and access impact. Provide the engineers with a traffic control plan for approval to be used with open cut crossings prior to initiating construction.

3.08 Manholes. Construct manholes at the proper elevations where shown on the Drawings and conforming with the details shown on the Drawings.

3.09 Tie to Existing Manholes. All pipe penetration into existing manholes shall be core drilled and sealed with an appropriately sized PSX direct-drive gasket. All penetrations shall be water tight.

PART 4 - TESTING

4.01 Low Pressure Air Test:

A. General. Conduct a low pressure air test after the trench has been backfilled. Test each section of line between manholes. Furnish the compressor, hose, pipe, connections, gauges, and measuring devices and all other necessary apparatus, and furnish all necessary assistance to conduct the test.

B. Procedure. Plug all pipe openings with pipe plugs after the test section has been cleaned. The air temperature in the test section should be between 45 degrees and 95 degrees Fahrenheit and the interior of the pipe surface should be wet immediately prior to installation of plugs. Pressurize the pipe section to a pressure between 4 psig and 3.5 psig and allow time for the pressure to stabilize. When the pressure has stabilized and is at least 3.5 psig, record the time required for the pressure to drop 0.5 psi. The minimum allowable time intervals for this 0.5 psi drop for plastic pipe at standard length of 400' between manholes are as follows:

PVC PIPE SIZE (INCHES)	TIME	TIME FOR LONGER LENGTH, SECONDS
4	1 minute 53 seconds	0.190*L
6	2 minutes 50 seconds	0.427*L
8	5 minutes 04 seconds	0.760*L
10	7 minutes 54 seconds	1.187*L
12	11 minutes 24 seconds	1.706*L
15	17 minutes 48 seconds	2.671*L
18	25 minutes 38 seconds	3.846*L
24	45 minutes 35 seconds	6.837*L
30	71 minutes 13 seconds	10.683*L

*Note - If distances between manholes exceeds 400', use the table noted as "Time for Longer Lengths" to calculate the allowable time associated with a pressure drop of 0.5 psi. As a function of length, (L) between manhole, L - in feet.

Should any test of the pipe disclose a pressure drop greater than that specified in the referenced time frame, the Contractor shall, at his own expense, repair the defective joints or sections until the pressure drop is within the specified allowance.

C. Final Acceptance. No pipe installation will be accepted until the pressure drop is less than the pressure drop in the above table for the size pipe being tested.

4.02 Lamp Test. Perform the lamp test as directed by the Engineer to verify the accuracy of alignment of the installed sewer and that the sewer is free of debris and obstructions. The lamp test shall be performed following the placement of at least one (1) foot of backfill over the section of sewer to be tested. The segment of sewer shall be visually lamped with lights or mirrors. Visually inspected the line at the manhole opposite of the manhole which is being illuminated. The full diameter of the pipe in respect to the vertical axis should be visible and a minimum 7/8 of the diameter of the pipe in respect to the horizontal axis should be visible when viewed. Remove and relay segments of sewer not meeting the requirements mentioned above.

4.03 Deflection Test. Perform the deflection test along the installed sewer alignment no less than 30 days following complete trench backfill. The test shall be performed by pulling an Engineer approved deflection gauge or mandrel through the segment of sewer being tested. The dimensions of the mandrel shall be in accordance with Table 10.14 or Table 10.15 as presented in the Uni-Bell Handbook of PVC pipe, 4th Ed. This test shall be considered a "go-no go" test in which segments that do not allow passage of the mandrel shall be removed and reconstructed. Following reconstruction, retest the segment for deflection.

4.04 Manhole Vacuum Test. Perform the vacuum test conforming to the preparation and procedure as outlined in the most recent edition of the ASTM designation C 1244 (Standard Test Method For Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test) and more generally described as follows:

A. Properly brace and plug all lift holes and pipes leading into and out of the manhole.

B. Drain a vacuum of ten (10) inches of Mercury (4.9 psi) on the manhole. Close the valve on the vacuum line of the test head and shut off the vacuum pump.

C. Measure the time for the vacuum pressure to drop to nine (9) inches of Mercury.

D. The manhole vacuum test shall be considered passed if the time required for the pressure to drop from ten (10) inches of Mercury (4.9 psi) to nine (9 inches Mercury (4.4 psi) exceeds the time specified in Table 1 of ASTM C 1244 and the table listed below:

MINIMUM TEST TIMES FOR VARIOUS MANHOLE DIAMETERS Diameter, Inches									
	30	33	36	42	48	54	60	66	72
Depth (feet)	Time (seconds)								
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	69	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	98	108	121

E. If the manhole fails the initial test, make necessary repairs by a method approved by the Engineer. Retest the manhole until a satisfactory test result is obtained.

FLORENCE & HUTCHESON, INC.
CONSULTING ENGINEERS
LAMP TEST DATA SHEET

Test No. _____

Identification of Pipe Installation (Job name, location, contract number, etc.)_____
_____

Field Test Data: (To be filled in by the Inspector).

Date: _____

Identification of Pipe Material Installed
_____

Pipe Under Test

Upstream MH sta #	Downstream MH sta #	Dia. D (in.)	Length L (ft.)	Pass or Fail (P or F)

Inspector's Name and Title: _____

Signature of Inspector: _____

If a section fails, the following items should be completed:

Identify section(s) that failed: _____

Description of corrective action taken: _____

_____

For test results after repair refer to Test No. _____ Inspector _____

FLORENCE & HUTCHESON, INC.
CONSULTING ENGINEERS
AIR TEST DATA SHEET

Test No. _____

Identification of Pipe Installation (Job name, location, contract number, etc.)
_____

Field Test Data: (To be filled in by the Inspector).

Date: _____ Specified Maximum Pressure Drop: _____psig

Identification of Pipe Material Installed _____

Pipe Under Test				Specification Time	Field Test Operations Data					
Upstream MH sta #	Downstream MH sta #	Dia. D (in.)	Length L (ft.)	Refer to Table 1 (min:sec)	Pressure Initially Raised to (psig)	Time Allowed for Pressure to Stabilize (min)	Start Test Pressure (psig)	Stop Test Pressure (psig)	Elapsed Time (min:sec)	Pass or Fail (P or F)

Inspector's Name and Title: _____Signature of Inspector: _____

If a section fails, the following items should be completed:

Identify section(s) that failed:
_____

Leak (was) (was not) located. Method used: _____

Description of leakage found: _____

Description of corrective action taken: _____

_____

For test results after repair refer to Test No. _____ Inspector _____

FLORENCE & HUTCHESON, INC.
CONSULTING ENGINEERS
MANHOLE VACUUM TEST

ASTM DESIGNATION C1244 DATA SHEET
Test No. _____

Identification of Manhole (Job name, location, contract number, etc.) _____
_____

Field Test Data: (To be filled in by the Inspector).

Date: _____ Specified Maximum Pressure Drop: _____psig

Identification of Manhole Installed

Pipe Under Test				Specification Time	Field Test Operations Data					
	Manhole MH sta #	Dia. D (in.)	Length H (ft.)	Refer to Table 1 (sec)	Vacuum Initially Raised To (mercury)	Time Allowed for Vacuum to Stabilize (sec)	Start Test Vacuum (mercury)	Stop Test Vacuum (mercury)	Elapsed Time (sec)	Pass or Fail (P or F)

Inspector's Name and Title: _____ Signature of Inspector: _____

If a manhole fails, the following items should be completed:

Identify manhole(s) that failed: _____

Leak (was) (was not) located. Method used: _____

Description of leakage found: _____

Description of corrective action taken: _____

For test results after repair refer to Test No. _____ Inspector _____

FLORENCE & HUTCHESON, INC.
CONSULTING ENGINEERS
DEFLECTION TEST DATA SHEET

Test No. _____

Identification of Pipe Installation (Job name, location, contract number, etc.)_____
_____

Field Test Data: (To be filled in by the Inspector).

Date: _____

Identification of Pipe Material Installed _____

Pipe Under Test

Upstream MH sta #	Downstream MH sta #	Dia. D (in.)	Length L (ft.)	Pass or Fail (P or F)

Inspector's Name and Title: _____

Signature of Inspector: _____

If a section fails, the following items should be completed:

Identify section(s) that failed: _____

Description of corrective action taken: _____

_____

For test results after repair refer to Test No. _____ Inspector _____

SECTION 02820

SEWER FORCE MAIN SYSTEM

PART 1 - GENERAL

1.01 Description:

Work Included. Furnish all equipment, labor, and material to complete the sewer force main installation as shown on the Drawings and specified herein.

1.02 Quality Assurance. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 Submittals.

A. Submit six copies of product data sheets on material to be used.

B. Product Data:

1. Materials list of items proposed to be provided under this Section;

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;

3. Names and addresses of the nearest service and maintenance organization that readily stocks repair parts;

4. Manufacturer's recommended installation procedures which, when approved by the Engineer, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART 2 - PRODUCTS

2.01 Pipe, Fittings, and Accessories:

A. General - Provide pipe, fittings, and accessories complying with the following requirements:

B. Pipe:

1. Ductile iron pipe:

a. Provide Class 51 ductile iron pipe complying with ANSI A-21.51 (AWWA C151).

b. Use cement mortar lining complying with ANSI A-21.4 (AWWA C104) with a bituminous exterior seal coat.

2. Plastic pipe:

Use rigid unplasticized polyvinyl chloride (PVC) complying with ASTM D1784 and D2241. The PVC compound used in the manufacture of this pipe shall meet or exceed the requirements for class 12454A or 12454-B as defined by ASTM D1784. Provide pipe with a standard dimension ratio (SDR) of 21 with pressure rating of 200 psi complying with ASTM D2241.

3. Restrained – Joint PVC Pipe:

Certa-Lok Yellomine-IB (Integral Bell) PVC Pipe with a working pressure rating of 200 psi (DR 21) as manufactured by CertainTeed Pipe and Plastics Group or approved equal.

4. Fusible PVC Pipe:

Shall be 200 psi (SDR 21) FPVC (Fusible PVC) as manufactured by Underground Solutions, INC or engineer approved equal. Joints shall be formed in accordance with the manufacture's specifications.

5. High density Polyethylene (HDPE) Pipe:

Use HDPE with a standard dimension and (DR) of 11 with a working pressure rating of 1650 psi and conforming to ASTM F714 and D3035. The pipe shall be sized with standard iron pipe size (IPS) and shall be Driscopipe 4200 or approved equal.

6. Steel Casing Pipe:

a. Roadways. Install ASTM A139 steel encasement pipe under all highways and where shown on the Drawings where drilling or open cut installation is required for sewer mains. Encasement pipe sized up to 16" shall have a minimum yield strength of 35,000 psi and a minimum thickness of 0.25 inches and shall be thoroughly coated with asphalt bitumen on the outside. Encasement pipe larger than 16" shall be standard strength with wall thickness of 0.375 inches

and shall be thoroughly coated with asphalt bitumen on the outside.

b. Railroads. Install ASTM A139 steel encasement under all railroad right of way where drilling or open cut is required on the drawings. Encasement pipe 36" diameter shall have a minimum yield strength of 35,000 psi and a minimum nominal wall thickness of 0.500 inches. The exterior of the encasement shall be thoroughly coated with asphalt bitumen.

C. Joints:

1. Ductile iron push on joint:

Comply with ANSI A-21.11 (AWWA C111).

2. Ductile iron flanged joint:

Comply with either ANSI A-21.15 (AWWA C115) with a 125 pound flanged joint or ANSI B-16.1 - ANSI B16.5 with a 125 pound cast iron "Uni-Flange" adapter as manufactured by Uni-Flange Corporation.

3. Plastic pipe:

Provide a push on type joint with a continuous elastomeric ring gasket compressed into the annular space between bell and spigot end of pipe complying with ASTM D3139.

3. Fusible PVC Pipe:

Fusible PVC joins shall be formed in accordance with the manufacture's specifications.

4. HDPE:

Form joints by heat fusion method in accordance with the manufacturer's recommendations and ASTM D3261

D. Fittings:

1. Use mechanical joint fittings for all exterior below grade pressure piping complying with AWWA C153.

2. Use cement lining complying with ANSI A-21.4 (AWWA C104) with a bituminous seal coat.

3. All fittings must be manufactured in the United States of America unless otherwise approved by the Engineer.

4. HDPE Fittings:

Use HDPE fittings conforming to AWWA C906 requirements. Provide mechanical joint adaptor kits at transition points to other pipe types.

E. Pipe Penetration Gaskets

All pipe penetrations through concrete walls shall be sealed using a Link Seal PS1 gasket as manufactured by PSI Thunderline Link Seal, 6525 Goforth St., Houston, TX or approved equal. Utilize model S plastic wall sleeves where applicable to ensure a smooth sealing surface.

F. Air Release / Vacuum Valves

1. At locations indicated on the Drawings, provide all necessary labor, equipment and materials for installation of combination air valves and vaults, in accordance with this specification and Drawings.

2. Combination air valves shall be Model D-025 Combination Air Valve for Sewage "SAAR" Short Version, as manufactured by A.R.I. Flow Control Accessories, or engineer approved equal.

PART 3 - EXECUTION

3.01 Pipe Laying:

A. General. Provide proper implements, tools and facilities for the safe and convenient execution of the work. Carefully lower all pipe, fittings, and valves into the trench piece by piece by means of a derrick, ropes or other suitable tools or equipment, in such a manner as to prevent damage to force main materials.

B. Alignment and Grade. Lay and maintain pipe to the required lines and grades shown on the drawings, and as required to prevent undue local high points, deflections, and breakages after flow has been placed in the lines to the operating pressures. Set fittings and valves at the required locations, spigots centered in valves and all valves stems set plumb.

C. Depth of Pipe. Lay all pipe to a minimum depth of cover over the top of the pipe of 3 feet in all areas.

D. Manufacturer's Installation Instructions. Perform all work under this section in strict accordance with the manufacturer's recommendations and installation manual unless otherwise specified herein.

E Trench Water. Lay no pipe in water, or when the trench conditions or the weather is unsuitable for the work to be done. When pipe laying is not in progress, close the open ends of the pipe to exclude trench water, dirt, and small animals from the pipe. Whenever trench water is excluded from the interior of the pipe, deposit adequate backfill upon the pipe to prevent floating. Remove and relay any pipe which has floated shall be removed from the trench and relaid as directed.

F. Placing. After placing a length of pipe in the trench, center the spigot end in the bell and the force the pipe home to correct line and grade. Secure the pipe in place with approved backfill material tamped under it except at the joints. Pipe and fittings which do not allow a sufficient and uniform space for fittings of proper dimensions to insure such uniform space. Take precautions to prevent dirt from entering the joint space.

G. Unsuitable Laying Conditions. Do not lay pipe on frozen ground, in water, or when trench conditions are unsuitable.

H. Anchorage of Bends, Tees and Plugs. Prevent movement at all tees, plugs, caps, and bends 11.25 degrees and over, by using suitable harness, thrust blocks or ballast. Construct thrust blocks and supports as shown in the typical details, with sufficient volume of concrete being provided. Double wrap all fittings with polyethylene wrap prior to placing thrust blocking. Costs associated with providing and installing poly-wrap shall be considered incidental to the unit price for fittings.

I. Grades. Gradually change the grade of the pressure pipe to lower the line where necessary to get under existing utilities.

J. Permissible Deflection At Joints. Whenever it is necessary to deflect pipe from a straight line, either in the vertical or horizontal plane, to avoid obstruction or plumb stems, or where long-radius curves are permitted, do not exceed the amount of deflection tabulated in Table I and Table II AWWA Specification C600-64.

K. Cutting Pipe. Cut the pipe for inserting valves, fittings, or closure pieces in a neat and workmanlike manner without damage to the pipe so as to leave a smooth end at right angles to the axis of the pipe. If the cut end of the pipe is to be inserted into the bell end with gasket, condition the outside edge of the field cut plain end pipe by filing or grinding a small taper at an angle of about thirty degrees.

PART 4 - TESTING

4.01 Leakage Test:

A. General. Conduct a leakage test after the trench has been backfilled. Furnish the pump, pipe, connections, gauges and measuring devices, and all other necessary apparatus. Furnish all necessary assistance to conduct the test. The duration of each leakage test shall be three (3) hours and during the test subject the main to 150 psi pressure.

B. Permissible Leakage. Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any valved section thereof, necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

No pipe installation will be accepted until the leakage is less than the number of gallons per hour as determined by the following schedule:

Allowable Leakage Per 1,000 Feet of Pipeline			
Pipe Size (Inches)	Maximum Loss (Gal./Hr.)	Test Pressure PSI	Test Period (Hours)
12"	1.10	150	3
10"	0.92	150	3
8"	0.74	150	3
6"	0.55	150	3
4"	0.37	150	3
3"	0.27	150	3

C. Procedure. Cap each end of the main. Slowly fill the main with water by means of a pump connected to the low end of the main. Connect the pump to the main in a manner satisfactory to the Engineer. Expel all air from the line at the high points. After all air has been expelled from the main, gradually increase the water pressure in the main to 150 psi. Begin the test after the pressure has stabilized to 150 psi. Withdraw the water required to maintain 150 psi from a calibrated container. Discharge the outlet end of any pressure regulating device into the calibrated container in order to accurately determine the actual amount of water required to maintain the required 150 psi water pressure within the test section. The duration of the test shall be three (3) hours.

Should any test of the pipe disclose leakage greater than that specified, repair the defective joints or sections until the leakage is within the specified allowance.

D. Final Acceptance. No pipe installation will be accepted until the leakage is less than the number of gallons per hour as specified in the above table for the size pipe being tested.

END OF SECTION

SECTION 02827

SEWER FLOW CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

A. When sewer depth of flow at the subject sewer main is above the maximum allowable for work, the flow shall be reduced to zero, or to an acceptable working level by operation of pump stations, plugging or blocking of the flow, or by pumping and bypassing of the flow as specified.

B. Depth of flow shall not exceed that shown below for the respective pipe sizes as measured in the manhole when performing television inspection of sewers.

1. Maximum depth of flow for television inspection.
   a. 6 inch to 10 inch pipe - 20% of pipe diameter.
   b. 12 inch to 24 inch pipe - 25% of pipe diameter.
   c. 27 inch and up pipe - 30% of pipe diameter.

PART 2 - EXECUTION

2.01 PLUGGING OR BLOCKING

A sewer line plug shall be inserted into the line upstream of the section being worked. The plug shall be so designed that all or any portion of the sewage can be released. During TV inspection, flow shall be reduced to within the limits specified above. After the work has been completed, flow shall be restored to normal.

2.02 PUMPING AND BYPASSING

When pumping and bypassing is required, the Contractor shall supply the pumps, conduits, and other equipment to divert the flow of sewage around the manhole section in which work is to be performed. The bypass system shall be of sufficient capacity to handle existing flow plus additional flow that may occur during a rainstorm. The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing system. If pumping is required on a 24-hour basis, engines shall be equipped in a manner to keep noise to a minimum.

2.03 FLOW CONTROL PRECAUTIONS

When flow in a sewer line is plugged, blocked, or bypassed; sufficient precautions must be taken to protect the sewer lines from damage that might result from sewer surcharging. Further, precautions must be taken to ensure that the sewer flow control operations do not cause flooding or damage to public or private property being served by the sewers involved. Any damages to public or private property, and any associated remediation, which are the result of the

contractors flow control operations, shall be the responsibility of the contractor.

END OF SECTION

SECTION 03001

MANHOLE GRADE ADJUSTMENT RINGS

PART 1 – GENERAL

1.01 MANHOLE GRADE ADJUSTMENT RINGS

All grade adjustments of manhole frame and cover assemblies shall be completed utilizing reinforced concrete grade rings or injection molded High Density Polyethylene (HDPE) adjustment rings as manufactured by Ladtech, Inc. or approved equal. Existing manholes shall be adjusted no more than 18" utilizing adjustment rings.

A. Reinforced Concrete Grade Adjustment Rings

1. Precast reinforced concrete grade adjustment rings shall conform to ASTM C478 and shall be free from cracks, voids, and other defects.

2. The adjustment rings shall be tested to assure compliance with impact and loading requirements per AASHTO's Standard Specification for Highway Bridges.

3. Installation shall be according to manufacturer's recommendations and the following procedure:

a. Clean the concrete cone or top slab with a whiskbroom or chisel to assure a flat seating surface free of rocks, gravel, blacktop and protruding concrete, frozen or other debris.

b. Measure the distance from the cone or top slab to the projected finish grade and deduct for the cover frame. Determine the net buildup of rings necessary to come within ¼" of grade with the cover frame in place.

c. Unless specifically noted on the Drawing, determine the best ring height combination to attain necessary adjustment.

d. Use mortar to create a flat sealable surface if the cone or top slab is too badly chipped or damaged to attain a good seal. Apply two strips of approved butyl gasket material to the cone or top slab around the entire circumference, overlapping the ends.

e. Place the first ring down onto the cone or top slab.

f. Apply two strips of approved butyl gasket material to the top of the first grade ring around the entire circumference, overlapping the ends.

g. Place the second ring down onto the first ring.

h. Continue the assembly per steps f and g for each adjustment ring being used. A maximum height of 18" is permitted for adjustment rings.

i. Prior to setting the cover frame in place, apply two strips of approved butyl gasket material to the last rings around the entire circumference, overlapping the ends.

j. Set the cover frame in place, centered on the top ring.

k. Where the manhole is located in pavement, use precast concrete rings in conjunction with HDPE rings to match the roadway cross slope.

l. Where the manhole is located outside of pavement, and raised to a level greater than 6" above grade, use cement to seal and smooth around the outside perimeter of the manhole to provide a smooth finish.

1.02 HIGH DENSITY POLYETHYLENE GRADE ADJUSTMENT RINGS

A. Plastic adjustment rings shall be manufactured from Polyethylene plastic as identified in ASTM D1248 (Standard Specification for Polyethylene Plastic Molding and Extrusion Materials). Material properties shall be tested and qualified for usage per the ASTM Test Methods reference in ASTM D1248. Recycled material meeting the above requirement may be used.

B. Plastic adjustment rings shall be manufactured utilizing the injection molding process as defined by the Society of Plastic Engineers (SPE).

C. The adjustment rings shall be tested to assure compliance with impact and loading requirements per AASHTO's Standard

Specification for Highway Bridges. Adjustment rings shall be tested and accepted for HS-25 loading.

D. Installation shall be according to manufacturer's recommendations and the following procedure:

1. Clean the concrete cone or top slab with a whiskbroom or chisel to assure a flat seating surface free of rocks, gravel, asphalt, protruding concrete, frozen or other debris.

2. Measure the distance from the cone or top slab to the projected finish grade and deduct for the cover frame. Determine the net buildup of rings necessary to come within ¼" of grade with the cover frame in place.

3. Determine the best ring height combination to attain necessary adjustment. Molded slope rings shall be used to match grades of paved surfaces that are not flat. Molded slope rings shall be used to accommodate other grades that are not flat only when directed by the Engineer.

4. Dry stack rings on cone. Index any slope rings as necessary. Place cover frame casting on top of the assembly and verify height and slope match.

5. Mark the entire stack with a vertical line and disassemble.

6. Use mortar to create a flat sealable surface if the cone or top slab is too badly chipped or damaged to attain a good seal. Apply a 3/8" of approved butyl rope to the cone or top slab. (A 1" x 1" butyl material strip should be used if the cone is rough or irregular).

7. Place the first ring down onto the cone or top slab with the male lip into the opening, aligning the vertical line.

8. Apply a 3/8" bead of approved butyl rope on the bottom of the next ring, as close to the male lip as possible around the entire 360° of the ring.

9. Place the second ring down onto the first ring with the male lip interlocking into the center, aligning the vertical line.

10. Continue the assembly per steps 8 and 9 for each adjustment ring being used. A maximum height of 18" is permitted for adjustment rings.

11. Prior to setting the cover frame in place, apply 1 – 1" by 1" inch bead of approved butyl sealant on top of the last ring. Apply the sealant in a location to contact the cover frame the full 360°.

12. Set the cover frame in place, centered on the top ring. Apply sufficient butyl rubber to achieve 10" vacuum test if required.

E. All HDPE adjustment rings shall be covered by a full two year warranty that warrants the adjustment rings for two years from the date of installation against defects in materials. Any defective adjustment rings shall be replaced at no cost to the Owner.

END OF SECTION

SECTION 03110

CONCRETE FORMWORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. This specification section covers the furnishing, installation, and removal of formwork for structural cast-in-place concrete.

B. The formwork shall be constructed to adequately confine the cast-in-place concrete to the lines, grades, and form indicated on the drawings. Forms shall be constructed of materials that produce a smooth uniform appearance on exposed surfaces and require only localized touch-up after removal. The requirements of American Concrete Institute (ACI) 347 shall govern the construction of the formwork.

1.02 RELATED WORK

A. Section 03200 - Concrete Reinforcement.

1.03 QUALITY ASSURANCE

A. The Contractor shall be responsible for the inspection of the formwork and shoring for compliance with the codes and standards and that the formwork is in accordance with the drawings and specifications for dimension and tolerance. The Contractor shall notify the Engineer when the inspection has been completed.

1.04 REFERENCES

Formwork shall comply with the provisions of the Kentucky Building Code and following ACI standards:

A. ACI 117-81, Standard Tolerances for Concrete Construction.

B. ACI 347-89, Recommended Practice for Concrete Formwork.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Form materials shall be stored to protect the future concrete faces from becoming covered with material that will distract the finished concrete surfaces.

B. Combustible materials shall be segregated and stored in an orderly fashion to expedite fire fighting.

PART 2 - PRODUCTS

2.01 FABRICATION

A. Wood forms for exposed surfaces of concrete shall be of plywood or other dressed wood material and shall be free from knots, warps, breaks, or other defects likely to cause irregular surfaces. Prior to installation, the concrete side of formwork shall be cleaned of old concrete, form oil, dust, or other material that would detract from the finished concrete surface. Formwork for concrete surfaces that will be exposed to view shall be fabricated of new material with a minimum of patches or blemishes. Edges of sheets of form material shall closely match in profile, alignment, and texture.

B. Metal forms shall be free from irregularities, dents, sags, or other defects. Edges of panels shall closely match in line and profile and shall be locked together to prevent uneven displacement during concrete placement.

C. Form ties shall be of the snap-off type with ends terminating I in. below the finished concrete surface. Form bolt anchors shall terminate 1 in. below the finished concrete surface.

D. Areas to receive special finishes or form liners shall be specified on the drawings.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Formwork shall be erected to form the concrete accurately to the lines and grades shown on the drawings. Tolerances, preparation of form surfaces, removal of forms, reshoring, and concrete strength at removal shall be in accordance with ACI 301 and ACI 117.

B. Forms shall be designed for loads, lateral pressures, and allowable stresses in accordance with ACI 347.

C. Removal of formwork shall be as directed by the Engineer.

3.02 PROTECTION

The Contractor shall be responsible for the design of formwork, shoring, and safe practice in erecting and removing forms and shoring. The Contractor shall be responsible for the design, erection, and removal of reshoring when formwork is to be removed prior to the concrete obtaining adequate strength for structural safety. The Contractor shall notify the Engineer 24 hours prior to the start of removal of forms from slabs.

END OF SECTION

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. This specification covers the furnishing, fabrication, and installation of reinforcement for cast concrete.

B. The Contractor shall provide and accurately install the reinforcing steel in accordance with the drawings, specifications, and applicable documents. The reinforcing steel shall be clean, free of rust, concrete splatter, form oil, or other material that could interfere with the bond strength.

1.02 RELATED WORK

A. Section 03110 - Concrete Formwork.

1.03 REFERENCES

Reinforcement shall comply with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (2008) and specifications and standards of the American Concrete Institute (ACI), American Society for Testing and Materials (ASTM), and American Welding Society (AWS) as follows:

A. ACI 315-80, Details and Detailing of Concrete Reinforcement.

B. ACI 318-89, Building Code Requirements for Reinforced Concrete.

C. ASTM A-497-89, Welded Deformed Steel Wire Fabric for Concrete Reinforcement.

D. ASTM A-615-89, Deformed and Plain Billet-Steel for Concrete Reinforcement.

E. ASTM A-675-89, Steel Bars, Carbon, Hot Wrought, Special Quality, Mechanical Properties.

F. KDH Section 811.

1.04 SUBMITTALS

The Contractor shall submit certificates of the material to be used, indicating physical properties and chemical analysis. The certificates shall certify compliance with the specification. The Contractor shall also submit reinforcement shop drawings.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Reinforcing materials shall be handled and stored to preclude permanent deformation and exposure to dirt, oil, or other materials that would damage the reinforcing steel or detract from its concrete bonding properties. Dust, dirt, rust, or other material adhering to the reinforcing steel shall be removed prior to installation.

B. The Contractor shall prepare shop fabrication drawings, bar bending detail drawings, bar lists, and placement drawings for approval by the Engineer prior to start of fabrication of the reinforcing. The drawings will show all dimensions, sizes, bends, bar specifications, laps or splices, and other information required to ascertain the fabrication and placement will comply with the drawings and specifications.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Deformed reinforcing steel bars shall be as shown on the drawings and shall be deformed steel conforming to ASTM A-615, Grade 60.

B. Welded deformed steel wire fabric shall be as shown on the drawings and conform to ASTM A-497.

2.02 FABRICATION

A. The reinforcing steel shall be accurately cut and formed to the shapes and dimensions as shown on the approved shop drawings, using the specified materials.

B. Fabrication shall comply with the requirements of ACI 301, ACI 315, and ACI 318.

C. Shop-fabricated bars shall be identified with weather-resistant tags, etc., correlating with the shop drawings to indicate their installed locations.

PART 3 - EXECUTION

3.01 INSPECTION

A. The Contractor shall inspect the location prior to reinforcement installation to ensure all related features that could effect the reinforcement installation are correctly installed.

B. Prior to installation, the Contractor shall inspect the reinforcing steel for compliance with specifications as to type and size.

3.02 INSTALLATION

A. Reinforcing shall be accurately installed to the dimensions given on the design drawings, and as specified in the specifications.

B. All steel reinforcement shall be accurately placed in positions shown and firmly held in position during placement and hardening of concrete. Bar spacings are from center to center of bars unless otherwise noted. Bars shall be tied at all intersections, except where spacing is less than one foot in both directions, then alternate intersections shall be tied.

C. Distances from forms shall be maintained by means of approved supports. The tips of metal chair supports which are in contact with the surface of the concrete shall be plastic coated steel. Plastic coated steel supports are used, there shall be a minimum of 1/8" thickness of the plastic material between the metal tips and the exposed surface of the concrete. The steel placed in reinforced concrete slabs/footings shall also be securely tied down to prevent any possibility of steel rising above the specified elevation during placing, vibrating, and finishing the concrete.

D. The top mat and bottom mat of bars shall be separated by an approved suitable device. The use of pebbles, pieces of broken stone or brick, metal pipe, and wooden blocks shall not be permitted as separators. Reinforcement in any member shall be securely placed and then inspected and approved before the placing of concrete begins. Concrete placed in violation of this provision, may have to be removed and replaced the Contractors expense, if so directed by the Engineer.

3.03 FIELD QUALITY CONTROL

The Contractor shall inspect the installed reinforcing for compliance with the drawings and specifications and shall notify the Engineer prior to concrete placement when the installation inspection is completed and ready for concrete placement.

3.04 ADJUSTING AND CLEANING

A. Immediately prior to concrete placement, the position of the reinforcing shall be adjusted for correct spacing and clearance from forms and earth where forms are not used.

B. The Contractor shall carefully clean the reinforcing of all concrete, dust, loose rust, oil or grease, or any other material that will interfere with the bond of the concrete to the steel.

3.05 PROTECTION

The Contractor shall use good construction practices to handle, store, and install the material, ensuring the adjacent features or formwork is not jeopardized by overloading during stockpiling for placement of reinforcing.

END OF SECTION

SECTION 03600

GROUT

PART 1 - GENERAL

1.01 DESCRIPTION

The work to be performed under this section of the specifications consist of furnishing all materials, labor, and equipment necessary for concrete patching.

1.02 REFERENCES

A. American Society of Testing and Materials (ASTM)

ASTM C531. Test method for linear shrinkage and sufficient of thermal expansion of chemical resistant mortars, grouts, and monolithic surfacings.

ASTM C579. Test method for compressive strength of chemical resistant mortars and monolithic surfacings.

ASTM C827. Standard test method for change in height at early ages of cylindrical specimen from cementious mixtures.

1.03 SUBMITTALS

The Contractor shall submit information showing compliance with this specification as well as Manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide "Five Star Grout" and "Five Star Special Epoxy Grout 150" as manufactured by Five Star Products, Inc., 425 Stillson Road, Fairfield, Connecticut 06430. (203)336-7900 or approved equal.

1. Five Star Grout shall be used for general grouting such as or base plates, repairs, etc. (except will not be used on sludge tanks).

2. Five star special grout 150 to be used with grouting at sludge tanks.

B. Grout shall be mixed with clean, potable water.

PART 3 - EXECUTION

3.01 GENERAL

A. All surfaces shall be free of ice, frost, dirt, grease, oil, curing compounds, paints, impregnations, all loose material, and other foreign matters likely to affect the bond or performance of the material.

B. All loose, unsound, and damaged concrete shall be removed until only sound, clean, roughened concrete is exposed.

C. All roughening procedures should be such that no additional damage or new damage is created. Any new or additional damage shall be repaired at the Contractor's expense.

3.02 CONCRETE

A. The concrete on which the grout will bear should be dry and have attained its design strength before grouting.

B. Do not wet concrete. All surfaces to be in contact with grout should be dry and entirely free of oil, grease, laitance, curing compounds, frost, and other potential bond-preventing substances.

C. Roughen the surfaces by chipping, sand-blasting, or other mechanical means to remove any laitance or weak surface layer.

3.03 BASEPLATES

A. All metal surfaces of equipment bases which are to be in contact with the grout should be thoroughly cleaned to "bare metal" if bond is required.

B. Leveling and alignment of baseplates should be performed according to the recommendation of the equipment manufacturer and/or project specifications. Five Star Grout, a minimum 1 1/2 inch clearance should be provided. For baseplates wider than three feet, provide an additional one inch of clearance for each three feet of width. Grout pours deeper than four inches present the potential for cracking due to excessive internal heat development and subsequent cooling. Deeper pours can be accomplished by pouring in lifts and/or by using reinforcing bars in the epoxy. Embedded rebars act as heat sinks for curing epoxy. Both methods reduce temperature rise. For placements deeper than four inches, the grout manufacturer should be contacted for detailed procedures.

C. Shims, wedges, and blocks which are to be removed should be covered with putty, grease, or similar non-bonding material to prevent the grout from adhering.

3.04 SURFACE DRYNESS

A. All surfaces must be kept completely dry before grouting.

B. Grout Removal. Surfaces from which grout is to be removed after placing should be treated with a paste wax or release agent before placement.

3.05 FORMING

A. GENERAL

1. Forming or other leakproof containment is always required with epoxy grout. The forms require careful attention to prevent any leakage. If forms are not liquid tight, the grout will leak out and leave voids.

2. Forms must be designed to provide a hydraulic head. If additional hydraulic head is required at the point of placement, head boxes may be used.

3. All chamfer edges required in the grouts should be incorporated into the forms because epoxy grout cannot be cut or trimmed after hardening unless a grinder is used.

B. FORM STRENGTH

All forms should be built of materials of adequate strength, securely anchored and shored to withstand liquid head and the forces developed by plunging the grout into place.

C. SEALING AND WAXING FORMS

Caulking, such as glazier's putty, butyl rubber caulking, or duct seal should be used to make all joints liquid tight. This particularly applies to the joint between the form and the concrete. All forms may be lined with polyethylene for easy grout release. Carefully waxing forms with two coats of heavy floor or paste wax, preferably colored, to ensure 100% waxed area is also acceptable.

3.06 AIR RELIEF HOLES

With some baseplate designs, air relief holes are mandatory. Baseplates with a skirt around the perimeter should have relief holes (minimum 1/8" diameter) in each dead corner. If the plate is bissected with stiffening members, then relief holes should be provided at the intersection with the skirt. (See Figure G for minimum required air relief holes).

3.07 FOLLOW DIRECTIONS

A. Grout should be mixed according to the procedures recommended by the manufacturer. Carefully read all mixing information on the packages and the latest literature. If in doubt about the mixing procedures, call the manufacturer.

3.08 PLACING

A. GENERAL

1. Check Temperature Conditions

Determine if ambient temperature will be between 40EF and 90EF at time of grouting. If not, follow manufacturers requirements for cold or hot weather procedures.

2. Working Time

Temperature affects the consistency of epoxy grout and therefore can affect placement time. Check placement temperature of materials to estimate the time available for placing grout.

3. Transporting Grout

Use wheelbarrows or buckets to transport grout to point of placement.

4. Elimination of Voids

Grout placement should proceed in a manner that will assure the filling of all spaces and intimate contact of grouting materials with the surfaces to be grouted. The placement should be rapid and continuous so as to avoid cold joints and voids under the baseplate. All grouting should take place from one side to avoid trapping the air.

When using grout holes or stand pipes, start placing grout in adjacent grout holes or stand pipes only when grout has reached the adjacent hole.

5. Check for Leaks

Forms must be constantly checked for leaks. All leaks must be sealed immediately or voids will develop.

B. Use of a Head Box

When hydraulic head pressure is used to flow grout in place, the level of grout in the head box must never fall below the top of the baseplate, because air will be trapped. The head box should be filled to the maximum height and worked (plunged) down to the top of the baseplate. This procedure is repeated until the grout moves completely under the baseplate, pushing air out in front of it, and rising above the bottom of the baseplate on the far side. (See following photo).

C. Finishing

Epoxy grout cannot be trimmed after set. It must be left at final placement level, with all chamfer strips built into forms. To provide a smooth surface, puddle the grout so all aggregate is covered. Bubbles can be broken by spraying lightly with solvent. After initial stiffening, finish with trowel moistened with low volatility solvent or diesel oil. All further finishing will require grinding after cure period is complete.

D. Curing

1. Follow Instructions.

Grout should be cured in accordance with the manufacturer's specifications and recommendations. Read and follow the directions printed on the packages.

2. Forms

All forms should remain in place overnight.

3. Temperature

The temperature of the baseplate, supporting concrete foundation and grout should be maintained between 50EF and 90EF during grouting and for a minimum of 24 hours thereafter. See grout manufacturer's literature for cure schedules.

4. Moist Curing

Water interferes with proper curing of epoxy grouts. DO NOT MOIST CURE EPOXY GROUT!

END OF SECTION

SECTION 15110

VALVES & VALVE ACTUATORS

PART 1 – GENERAL

1.01 GENERAL – This section of the Specifications covers all valves and valve actuators shown on the Project Drawings.

1.02 SUBMITTALS

A. General – Submit six (6) copies each of the manufacturer's data sheets and operation and maintenance information as described herein to the Engineer.

B. Manufacturer's Data Sheets – Submit manufacturer's data sheets for each of the products specified herein to the Engineer for approval. Highlight or otherwise distinguish that data that applies specifically to the products subject to approval. Provide certification on each submittal stating that the product information has been reviewed and that the product that will be used in the Work will comply with the requirements of the specifications. Provide date and signature with each certification statement.

1.03 PRODUCT HANDLING

A. Delivery and Storage – Materials shall be handled in a manner complying with the recommendations of the manufacturer. Materials shall be stored in an organized manner at a location that will not interfere with the Work. Mechanical and Electrical equipment shall be stored in an area protected from the elements in order to exclude moisture.

B. Protection – Take appropriate measures to protect stored materials from the potential of damage from ongoing activities adjacent to the storage area.

C. Replacement – Replace materials damaged during shipment, handling, or storage prior to installation. Such replacements shall be made at no additional cost to the Owner.

1.04 WARRANTY

A. General – All Work associated with this section shall be covered by the standard one year contract warranty in accordance with requirements of the General Conditions.

B. Equipment – All mechanical and electrical equipment installed as part of the Work shall be covered by a full manufacturer's warranty for a minimum period of one (1) year after the acceptance of the installation by the Engineer.

PART 2 – MATERIALS AND EQUIPMENT

2.01 GATE VALVES

A. Use resilient seated gate valves complying with AWWA C509 with a non-rising stem, double O-ring seal stuffing box and iron body with epoxy coated interior surfaces complying with AWWA C550. Working pressure of 200 psi designed to work equally well with pressure on either side of the gate. Use American Darling Series 2500 or approved other.

B. Provide connections as required for the piping in which they are installed.

2.02 PLUG VALVES

A. Provide eccentric plug valves (16" minimum size) of the non-lubricated eccentric type with resilient faced plugs furnished with flanged (above grade) and mechanical joint (below grade) end connections. Flanged valves shall be faced and drilled to the ANSI 125 lb. Standard.

B. The valve body shall be of ASTM A126 Class B cast iron and shall be furnished with a 1/8" welded overlay seat of not less than 90% pure nickel. Seat area shall be raised with raised surface completely covered with weld to insure that the plug face contacts only nickel. Screwed-in seats shall not be acceptable.

C. The plug shall be of ASTM A126 Class B cast iron and shall have a cylindrical seating surface eccentrically offset from the center of the plug shaft. The interference between the plug face and body seat, with the plug in the closed position, shall be eternally adjustable in the field with the valve in the line under pressure. Plug shall be Chloroprene (CR) or resilient facing suitable for the application.

D. The bearings shall have sleeve type metal bearings and shall be of sintered, oil impregnated permanently lubricated type 316 ASTM A743 Grade CF8M. Non-metallic bearings shall not be acceptable.

E. The shaft seals shall be of the multiple V-ring type and shall be externally adjustable and repackable without removing the actuator or bonnet from the valve under pressure. Valves utilizing O-ring seals or non-adjustable packing shall not be acceptable.

F. Pressure ratings shall be 175 psi and valve shall be given a hydrostatic and seat test with results being certified.

G. All valve components shall conform to Underwriters Laboratories classification in accordance with ANSI / NSF Standard 61.

H. Plug valve shall be PEC Eccentric Plug Valve as manufactured by DeZurik or Engineer approved equal.

2.03 BUTTERFLY VALVES

A. Provide butterfly valves that meet or exceed the latest revision of AWWA Standard C504 for Class 150B butterfly valves and that meet or exceed the requirements of this specification.

B. Butterfly valves shall have a working pressure of 200-psi and shall be tested at and shall be capable of withstanding bi-directional line hydrostatic test pressures up to 225-psi without leaking.

C. All valve components shall conform to Underwriters Laboratories classification in accordance with ANSI/NSF Standard 61.

D. Valve bodies shall be of cast iron per ASTM A126 Class B. Flange end valves shall be of the short body design with 125 lb. flanged ends faced and drilled per ANSI B16.1 standard for cast iron flanges. Mechanical Joint end valves shall meet the requirements of AWWA C111/ANSI 21.11.

E. Discs shall be offset to provide an uninterrupted 360 degree seating edge and shall be cast iron per ASTM A48, Class 40C. The disc seating edge shall be solid 316 stainless steel. Sprayed mating seating surfaces are not acceptable. The disc shall be securely attached to the valve shaft utilizing a field removable/replaceable 316 stainless steel torque screw on sizes 3 - 12" (80 - 300mm) or a tangential pin locked in place with a set screw on sizes 14 - 20" (350 - 500mm).

F. Valve shaft shall be type 304 stainless steel. Valve shaft seals shall be self-compensating V-type packing with a minimum of four sealing rings. One-piece molded shaft seals and o-ring shaft seals are not acceptable.

G. The seat shall be of Buna-N for water, or as required for other services, and shall be molded in and vulcanized to the valve body. The seat shall contain an integral shaft seal protecting the valve bearings and packing from any line debris. Seats vulcanized to cartridge inserts in the valve body and seats on the disc are not acceptable.

H. Valve shaft bearings shall be non-metallic and permanently lubricated.

I. Unless otherwise specified, exterior and interior metallic surfaces of each valve shall be shop painted per the latest revision of AWWA C504. The interior of the body shall have a full rubber lining vulcanized to the valve body. Mechanical Joint valves shall be fully rubber lined to point of pipe insertion. Rubber lining on the flange face and boot style seats are not acceptable.

J. If the actual valve operating conditions are provided within this specification, the valve actuator shall be sized to the specified conditions. If actual operating conditions are not provided within this specification, per AWWA C504, the valve actuator shall be sized to operate the valve at the rated working conditions of the valve. Each valve and valve actuator shall be assembled, adjusted, and tested as a unit per the latest revision of AWWA C504, by the valve manufacturer. Shop leakage tests shall follow the requirements of AWWA C504 except that the test pressure shall be 225 psi (1550 kPa).

K. AWWA C504 Butterfly valves shall be DeZURIK BAW or approved equal.

L. Butterfly valves shall be AWWA Butterfly Valves (BAW) as manufactured by DeZurik or Engineer approved equal

2.04 CHECK VALVES

A. Provide wafer swing check valves with a spring-assisted closure that minimizes the possibility of water hammer.

B. The valve body shall be of cast iron complying with ASTM A48

C. Valve trim shall be 316 stainless steel complying with ASTM A23.

D. For corrosion resistance the valve shall be Electroless-Nickel Plated.

E. Wafer swing check valves shall be Series 501A as manufactured by Cla-Val or Engineer approved equal

2.05 ELECTRIC MOTOR ACTUATORS

A. Basic Actuator – The electric valve actuator shall include the motor, actuator unit gearing, limit switch gearing, limit switches, torque switches, declutch lever, and

manual handwheel as a complete self-contained unit. All actuators shall meet the latest revisions of AWWA specifications C504 and C540.

B. Enclosures – The valve actuator motor and all electrical enclosures shall be NEMA 4 (weatherproof/ watertight) and NEMA 6 temporary submersion (minimum of 3 meters for 48 hours.

C. Motor – The motor shall be specifically designed for valve actuator service and shall be of high starting torque, totally enclosed, non-ventilated construction. Motor insulation shall be a minimum of NEMA Class F, with a maximum continuous temperature rating of 155 degrees C (rise plus ambient) for the duty cycle specified. Optional insulation classes are available if service conditions warrant.

The motor shall be of sufficient size to open or close the valve at the maximum stated torque. The motor shall be capable of operating at plus or minus 10% of the specified voltage. The motor duty rating shall be sufficient for three complete cycles (open-close-open 3 times) without exceeding its temperature rating. Motor bearings shall be of the anti-friction type, and permanently lubricated.

The motor shall be an independent sub-assembly such that the power gearing shall not be an integral part of the motor assembly, to allow for motor or gear changes dictated by system operation requirements. The motor must be capable of being removed in its entirety for repair and testing. The use of a motor cast integral to the actuator body is not permitted.

The motor shall be equipped with internal thermal contacts to protect against motor overload and the motor shall be equipped with 120-volt AC/DC heaters of 10 watt minimum size.

AC motors shall be rated as a minimum for a 15 minute duty cycle

D. Power Gearing – The actuator shall be a multiple reduction unit with power gearing consisting of spur, helical, or bevel gears, and worm gearing. The spur, helical, or bevel gearing and worm shall be of hardened alloy steel, and the worm gear shall be alloy bronze. All gearing shall be accurately cut. Non-metallic, aluminum, compressed powdered metal, and cast gearing shall not be allowed. Anti-friction rolling element bearings shall be used throughout and shall support both ends of all rotating parts.

E. Lubrication – All rotating power train components shall be immersed in grease with provisions for inspection and re-lubrication without disassembly. Lubricants shall be suitable for ambient conditions of minus 20ºF to 150ºF. Adequate seals shall be provided on all shafting. The use of oil as a lubricant is not permitted.

F. Self-Locking Feature – Actuator gearing must be self-locking. The use of non-locking gearing and motor brakes is not permitted. The actuator must keep the valve in position with the motor removed without the need for special considerations.

G. Manual Operation – A metallic handwheel shall be provided for manual operation with an arrow to indicate the open rotation. The handwheel shall not rotate during motor operation. A fused motor shall not prevent manual operation. When in the manual operating mode, the actuator will remain in this mode until the motor is energized, at which time the actuator will automatically return to electric operation. Movement from motor operation to handwheel operation shall be accomplished by a positive padlockable declutch lever which mechanically

disengages the motor and related gearing. It shall be impossible for simultaneous manual and motor operation to occur. Friction type declutch mechanisms are not acceptable. Rim pull on the manual handwheel when the valve is fully seated shall not exceed 80 pounds

H. Position Limit Switches – Position limit switches and the associated counter gearing shall be an integral part of the valve actuator. Limit switch gearing shall be of the intermittent type, made of bronze or stainless steel, grease lubricated, and totally enclosed to prevent dirt and foreign matter from entering the gear train. Switches shall be adjustable, allowing for trip points from fully open to fully closed positions of valve travel. They shall not be subject to breakage or slippage due to over-travel. Limit switches shall be heavy duty, silver plated with wiping action. The actuator shall have 16 contacts, 4 contacts for each of 4 rotors, all of the same design. Contacts shall be convertible from N/O to N/C in the field. Switch design shall permit visual verification of switch position without disassembly.

Limit switches that rely on the counting of electrical pulses, those that must rely on battery backup, or those that are not mechanical in nature are not permitted.

I. Torque Switch – Each valve actuator shall be equipped with a switch that will interrupt the control circuit in both the opening and closing directions when valve torque overload occurs or when valves require torque seating in the closed or open position. Contacts shall be silver plated. The torque switch shall have graduated dials for both open and close directions of travel and each shall be independently adjustable, with a positive means to limit the adjustability so as not to exceed the actuator output torque capability.

J. Control Compartment Heater – The control compartment shall be provided with a 120 volt AC space heater.

K. Electric Motor Controls – The motor controls are to be supplied integral to the actuator this includes a reversing motor starter, control transformer, and all necessary terminal strips. The control transformer shall have fuses on both primary legs, have a secondary leg grounded, and have a fuse on the other secondary leg. Wiring shall be hard wired point to point without any proprietary circuit boards, plug in components, or other equipment. All points for customer wiring shall go directly to terminal strips. The motor controls are to be readily accessible and completely visible with the electrical compartment cover removed. The intent is to make all controls accessible and simple to understand. All control wiring shall either be labeled at each end or color coded (to match wiring diagram).

L. Control Station – The actuator shall be equipped with a local close coupled control station. This station will have a 3 position selector switch (open-run-close), 2 LED indicating lights (open-close), and a 3 position padlockable selector switch (local-off-remote).

M. Modulating Controls – The actuator shall be equipped with a positioning circuit that will position the valve proportionally to a 4 to 20 mA input signal. This device will have adjustments for proportional gain, zero, span, and deadband.

N. Gearing for Quarter-Turn Valves – The use of bolt on worm gear reducers for quarter-turn valves is required. This gearing will meet the AWWA C540 requirements.

O. Vendor Responsibility – In the case that an electric actuator is demonstrated to be sized to small; the vendor shall promptly modify the actuator or replace it with a

larger unit at no cost to the Owner. If the actuator is shipped separate from the valve or if it is removed during construction, a factory trained service technician employed by the actuator manufacturer or one of the actuator's formally recognized service facilities shall perform startup and calibration on the equipment at no cost to the Owner. If the actuator is shipped assembled to the valve it shall be calibrated and tested at the valve manufacturer's facility, the actuator's manufacturer's facility, or one of their formally recognized service facilities. All setup and calibration shall be documented and submitted to the Engineer.

P. Startup – Startup and training by a factory trained service technician employed by the actuator manufacturer or one of their formally recognized facilities will be required at no cost to the Owner.

Q. Actuator – Electric Actuator shall be a Limitorque L120 series with PTA worm gear or Engineer approved equal.

PART 3 – EXECUTION

3.01 INSTALLATION – Install valves and piping in accordance with the manufacturer's recommendations and industry recognized standards. All piping and valves shall be installed plumbed and leveled. Bolts shall be installed to the proper torque.

END OF SECTION

N O T I C E

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
(NATIONWIDE PERMIT & GENERAL WQC AUTHORIZATION)

PROJECT: Lyon County, Item No. 1-307
US 62 Widening Project

The Section 404 & 401 activities for this project have been previously permitted under the authority of the Department of the Army Nationwide Permit No. 14 "Linear Transportation Projects" & Division of Water General Water Quality Certification. In order for these authorizations to be valid, the attached conditions must be followed. The contractor shall post a copy of this Nationwide Permit & General WQC in a conspicuous location at the project site for the duration of construction and comply with the general conditions as required.

To more readily expedite construction, the contractor may elect to alter the design or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the contractor shall obtain **written** permission from the Division of Construction and the Corps of Engineers. A copy of any request to the Corps of Engineers to alter this proposal and subsequent responses shall be forwarded to the Division of Environmental Analysis, DA Permit Coordinator, for office records and for informational purposes.

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

General Certification--Nationwide Permit # 14
Linear Transportation Projects

This General Certification is issued March 19, 2012, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the commonwealth.

Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or 10 are deemed to have certification if they are implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.

For all other operations, the Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 14, namely Linear Transportation Projects, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.

2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.

3. The activity will impact less than 1/2 acre of wetland/marsh.

4. The activity will impact less than 300 linear feet of surface waters of the Commonwealth. Stream realignment greater than 100 feet is not covered under this general water quality certification.

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Linear Transportation Projects
Page 2

5. For a single and complete linear transportation project, the cumulative length of impacts less than 300 linear feet of surface waters within each Hydrologic Unit Code (HUC) 14 watershed will not exceed 500 linear feet.

6. Stream impacts covered under this General Water Quality Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KWQP).

7. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.

8. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.

9. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:

    - Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur (401 KAR 10:031 Section 2 and KRS 224.70-100).
    - Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.
    - Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
    - Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access.
    - To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.

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Linear Transportation Projects
Page 2

- Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
- Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the KDOW shall be notified immediately by calling (800) 928-2380.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

US Army Corps of Engineers

Nationwide Permit
No. 14, Linear Transportation Projects

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States.

a. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States.

b. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

c. This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

d. This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds
1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 31.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Valid from March 19, 2012 through March 18, 2017

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car

bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River

designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must

still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist

of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with

any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____
(Transferee)

_____
(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative

description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments.

The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) that the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

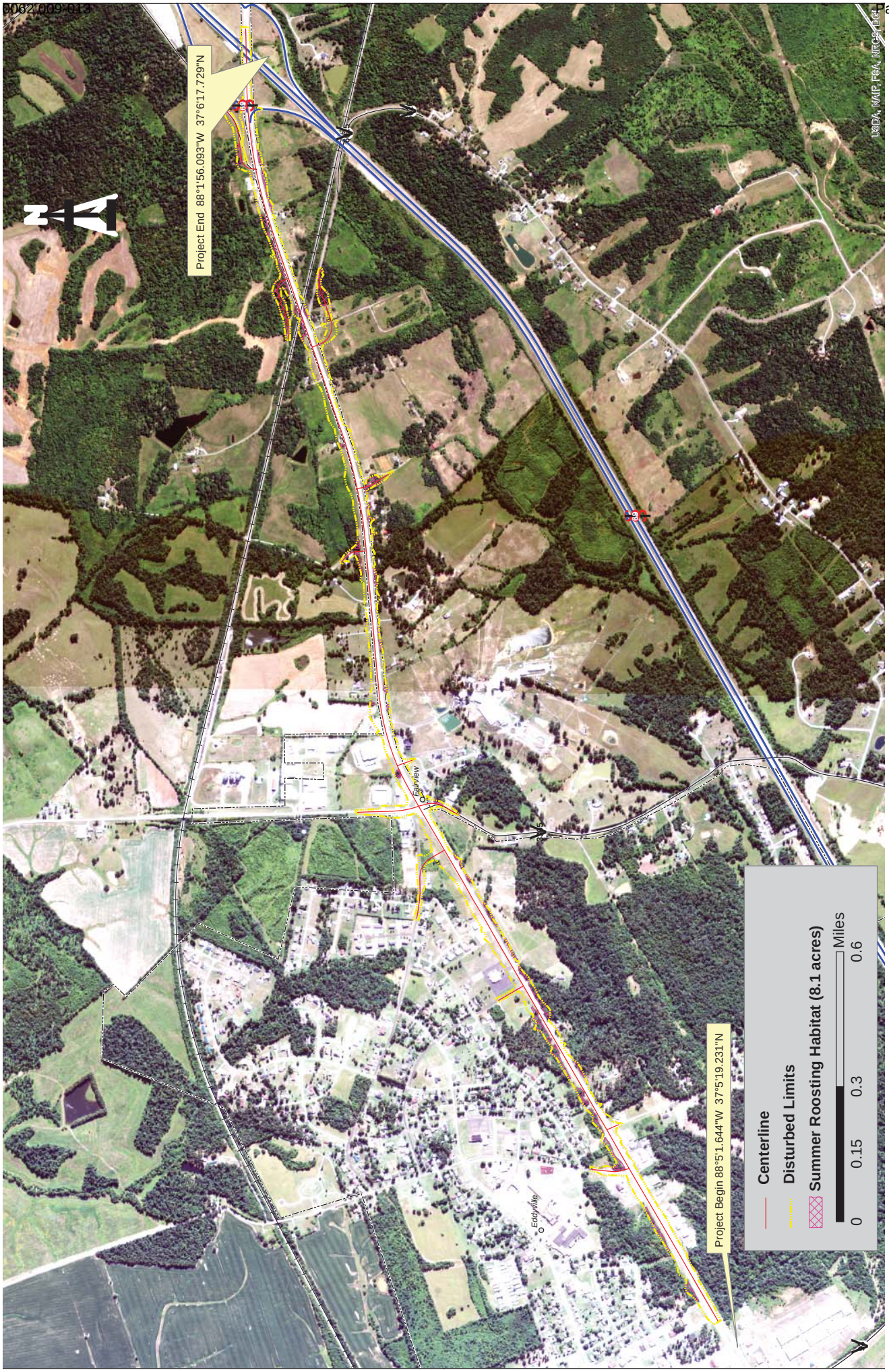
1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.


Project End 88°1'56.093"W 37°6'17.729"N
Project Begin 88°5'1.644"W 37°5'19.231"N
Fairview
Eddyville
Centerline
Disturbed Limits
Summer Roosting Habitat (8.1 acres)
0
0.15
0.3
0.6
Miles
USDA, NAIP, FSA, NRCS, FSA

MYSO Habitat Acreage Cost Calculator for Use of the Programmatic IBCMOA v1.2

USFWS KFO-determined price per acre: $ 3,050.00

Project Number: 1-307.01 **County:** LYON **Road:** US -62

TOTAL PROGRAMMATIC IBCMDA COST (Figure is an estimate. Final cost may vary due to future changes in acreage price.) $ 0.-

Table from September 6th, 2012 Indiana bat Programmatic Agreement	# of Acres (lower constant)	# of Acres (higher constant)	NOV 15 - MAR 31 all habitats unoccupied	Project Cost Per Acreage Type between NOV 15 - MAR 31	# of Acres (lower constant)	# of Acres (higher constant)	APR 1 - AUG 15 swarming unoccupied* potential occupied maternity occupied** non-maternity occupied	Project Cost Per Acreage Type between APR 1 - AUG 15 if using higher constant*	# of Acres (lower constant)	# of Acres (higher constant)	AUG 16 - OCT 14 Swarming occupied potential occupied maternity unoccupied non-maternity unoccupied	Project Cost Per Acreage Type between AUG 16 - OCT 14	# of Acres (lower constant)	# of Acres (higher constant)	OCT 15 - NOV 14 swarming occupied potential unoccupied maternity unoccupied non-maternity unoccupied	Project Cost Per Acreage Type between AUG 16 - OCT 14
Known maternity AND P1 & P2 swarming			2.5	$ -			3.0(4.0)*	$ -			3.5	$ -			3.5	$ -
Known maternity AND P3 & P4 swarming			2.0	$ -			2.5(3.5)*	$ -			3.0	$ -			3.0	$ -
Known non-maternity AND P1 & P2 swarming			2.0	$ -			2.5(3.5)*	$ -			3.0	$ -			3.0	$ -
Known non-maternity AND P3 & P4 swarming			1.5	$ -			2.0(3.0)*	$ -			2.5	$ -			2.5	$ -
P1 & P2 swarming			1.5	$ -			2.0(3.0)*	$ -			2.5	$ -			2.5	$ -
P3 & P4 swarming			1.0	$ -			1.5(2.5)*	$ -			2.0	$ -			2.0	$ -
Known maternity			1.5	$ -			2.0**	$ -			1.5	$ -			1.5	$ -
Known non-maternity			1.0	$ -			1.5	$ -			1.0	$ -			1.0	$ -
Potential			0.0 (0.5)****	$ -			0.5 (1.0)***	$ -			0.5 (1.0)***	$ -	8.10		0.0 (0.5)****	$ -
SUBTOTALS	0.00	0.00		$ -	0.00	0.00		$ -	0.00	0.00		$ -	8.10	0.00		$ -

* Spring emergence occurs close to the hibernaculum entrances in early spring with females emerging in early-to-mid April and males emerging between late April-early May. Swarming habitat within one mile of P1 & P2 hibernaculum entrances and within 0.5 miles of P3 & P4 hibernaculum entrances will be considered occupied between April 1 and May 14. Projects within these areas require project-specific evaluation bu the USFWS and may require additional mitigation (see page 7 in the guidance).

** Projects within known maternity habitat that occur from June 1 through July 31 require project-specific evaluation by USFWS (see page 7 in the guidance)

***Projects that occur entirely within potential areas and are determined to be along existing alignment will mitigate with a multiplier of 0.5 if the impacts occur between April 1 and October 14.

****Projects that occur within potential areas, regardless if they are determined to be existing or new alignment, will not be required to mitigate for impacts if the clearing of habitat occurs between October 15-March 31.

Individual Trees converted to acreage*****

# of trees	Use this acreage

*****NOTE: Individual trees may only be used for projects that contain less than 20 trees which are isolated or widely spaced. Standard mapping requirements still apply.

Comments: KYTC proposes to clear 8.1 acres of potential habitat along an existing highway at an unoccupied time (Oct 15-March 31), thus resulting in no payment. No impact to winter habitat.

The amount listed above has been determined in accordance with the Programmatic Biological Opinion issued by the US Fish and Wildlife Service September 6, 2012, and any subsequent amendments thereto.

ANDREW LOGSDON		August 15, 2013	August 15, 2013
OEA Biologist	Signature	Date	EATS Date:

As Project Manager, I understood that this authorization for use of the programmatic IBCMOA represents an irrotrievable commitment for the referenced project. Furthermore, I acknowledge that funds are available for payment of this expense.

Michael P McCoy	Michael P. McGregor	8/20/13	TOTAL ACRES: 8.10
Project Manager	Signature	Date	

Aerial map showing project footprint, habitat acreage, 1 km buffer & 5 km buffer, and coordinates MUST be attached to this form. Multiple maps may be necessary.

STEVEN L. BESHEAR
GOVERNOR

MARCHETA SPARROW
SECRETARY

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL

THE STATE HISTORIC PRESERVATION OFFICE
300 WASHINGTON STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

LINDY CASEBIER
ACTING EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

April 15, 2013

Mr. David Waldner, P. E., Director
Division of Environmental Analysis
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, KY 40622

Re: A Cultural Historic Survey for the US 62 Widening project in Eddyville, KY
Lyon County, Kentucky
Item No. 1-307.00

Dear Mr. Waldner,

Pursuant to Section 106 of the National Historic Preservation Act of 1966, (16 U.S.C. Sec. 470f) and its implementing regulations found at 86 CFR 800 the Kentucky State Historic Preservation Office received for review and comment the above referenced survey and documentation which is state funded and requires a permit from the US Army Corp of Engineers (USCOE).

We concur with your determination that there are no sites that are eligible for or listed on the National Register of Historic Places present within the jurisdictional area, and therefore there will be no impacts as a result of this undertaking.

If the plans are amended as the project moves forward, our office would like another opportunity to review and comment. If the project design or boundaries change, this office should be consulted to determine the nature and extent of additional documentation that may be needed.

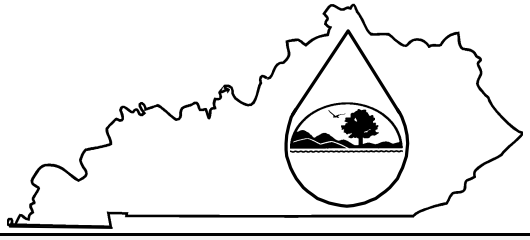
Thank you for coordinating with this office; if you should have any questions, please contact Burcum Keeton of my staff at (502) 564-7005, ext. 147.

Sincerely,

Lindy Casebier
Acting Executive Director and
State Historic Preservation Officer

cc: K. Damron, P. Logsdon, T. Foreman, R.H. Turner, D-1 (B. Beyer), FHWA (A. Goodman)

KPDES FORM NOI-SW



Kentucky Pollutant Discharge Elimination System (KPDES)

Notice of Intent (NOI)
for Storm Water Discharges
Associated with Industrial Activity Under the KPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

I. Facility Operator Information

Name:	KYTC District One	**Phone:**	(270) 898-2431
Address:	5501 Kentucky Dam Road	**Status of Owner/Operator:**	S
City, State, Zip Code:	Paducah, KY 42003		

II. Facility/Site Location Information

Name:	SYP Item # 01-0307.01		
Address:	US 62		
City, State, Zip Code:	Eddyville, KY 42038		
County:	Lyon		
Site Latitude: (degrees/minutes/seconds)	37^05'54	**Site Longitude: (degrees/minutes/seconds)**	88^03'47

III. Site Activity Information

MS4 Operator Name:	n/a						
Receiving Water Body:	Hammond Creek						
Are there existing quantitative data?	**Yes** ☐ **If Yes, submit with this form.** **No** ☒						
SIC or Designated Activity Code Primary	**1611**	**2nd**	**1622**	**3rd**		**4th**	
If this facility is a member of a Group Application, enter Group Application Number:							
If you have other existing KPDES Permits, enter Permit Numbers:							

IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:		**Completion Date:**	
Estimated Area to be disturbed (in acres):			
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	**Yes** ☒ **No** ☐		

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed or Typed Name:	**James E. LeFevre, PE**		
Signature:		**Date:**	

Kentucky Pollutant Discharge Elimination System (KPDES)
Instructions
Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity
To Be Covered Under The KPDES General Permit

WHO MUST FILE A NOTICE OF INTENT (NOI) FORM
Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the **Storm Water Contact, Industrial Section, Kentucky Division of Water at (502) 564-3410.**

WHERE TO FILE NOI FORM
NOIs must be sent to the following address:

Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
Frankfort Office Park
14 Reilly Road
Frankfort, KY 40601

COMPLETING THE FORM
Type or print legibly in the appropriate areas only. If you have any questions regarding the completion of this form call the **Storm Water Contact, Industrial Section, at (502) 564-3410.**

SECTION I - FACILITY OPERATOR INFORMATION
Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility.

F = Federal M = Public (other than federal or state)
S = State P = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION
Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code.

SECTION III - SITE ACTIVITY INFORMATION
If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water.

Indicate whether or not the owner or operator of the facility has existing quantitative data that represent the characteristics and concentration of pollutants in storm water discharges. If data is available submit with this form.

List, in descending order of significance, up to four 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or site identified in Section II of this application.

If the facility listed in Section II has participated in Part 1 of an approved storm water group application and a group number has been assigned, enter the group application number in the space provided.

If there are other KPDES permits presently issued for the facility or site listed in Section II, list the permit numbers.

SECTION IV - ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION ACTIVITIES ONLY
Construction activities must complete Section IV in addition of Sections I through III. Only construction activities need to complete Section IV.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION V - CERTIFICATION
Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer,which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authroity to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.

Kentucky Transportation Cabinet

Highway District 1

And

_____(2), Construction

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

Groundwater protection plan

For Highway Construction Activities

For

US 62 Lane Widening, Eddyville Lyon County, Kentucky

Project: PCN ## -

Project information

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

1. Owner – Kentucky Transportation Cabinet, District 1

2. Resident Engineer: (2)

3. Contractor name: (2)
   Address: (2)

   Phone number: (2)
   Contact: (2)
   Contractors agent responsible for compliance with the KPDES permit requirements (3):

4. Project Control Number (2)

5. Route (Address) US 62

6. Latitude/Longitude (project mid-point) 37^05’54”, 88^03’47”

7. County (project mid-point Lyon

8. Project start date (date work will begin): (2)

9. Projected completion date: (2)

KyTC BMP Plan for Project PCN ## - ####

A. Site description:

1. Nature of Construction Activity (from letting project description): This project is the widening of US 62 to 4 lanes beginning at the end of the existing 4 lanes at Eddyville and continuing to I-69 (formerly Western Kentucky Parkway).

2. Order of major soil disturbing activities (2) and (3)

3. Projected volume of material to be moved: 160,945 cubic yards

4. Estimate of total project area (acres): 93 acres

5. Estimate of area to be disturbed (acres): 40 acres

6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.

7. Data describing existing soil condition: The majority of soil horizons and slopes on this project are subject to erosion.

8. Data describing existing discharge water quality (if any): There is no information for this item.

9. Receiving water name: Hammond Creek

10. TMDLs and Pollutants of Concern in Receiving Waters: No TMDLs were involved on this project.

11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.

12. Potential sources of pollutants:

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

B. Sediment and Erosion Control Measures:

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

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

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

3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:

   - Ø Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.

- Ø At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.
- Ø Clearing and Grubbing – The following BMP's will be considered and used where appropriate.
    - Leaving areas undisturbed when possible.
    - Silt basins to provide silt volume for large areas.
    - Silt Traps Type A for small areas.
    - Silt Traps Type C in front of existing and drop inlets which are to be saved
    - Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
    - Brush and/or other barriers to slow and/or divert runoff.
    - Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
    - Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
    - Non-standard or innovative methods.
- Ø Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
    - Silt Traps Type B in ditches and/or drainways as they are completed
    - Silt Traps Type C in front of pipes after they are placed
    - Channel Lining
    - Erosion Control Blanket
    - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
    - Non-standard or innovative methods
- Ø Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
    - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
    - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
    - Additional Channel Lining and/or Erosion Control Blanket.
    - Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
    - Special BMP's such as Karst Policy

- Ø Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably changes include:
  - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.
  - Permanent Seeding and Protection
  - Placing Sod
  - Planting trees and/or shrubs where they are included in the project

C. Other Control Measures

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

2. Waste Materials

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

3. Hazardous Waste

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

4. Spill Prevention

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

Ø **Good Housekeeping:**

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

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

Ø **Hazardous Products:**

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

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

The following product-specific practices will be followed onsite:

Ø **Petroleum Products:**

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

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum

products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

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

Ø **Fertilizers:**

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

Ø **Paints:**

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

Ø **Concrete Truck Washout:**

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

Ø **Spill Control Practices**

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

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.

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

D. Other State and Local Plans

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

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.

- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.

- Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance.

F. Inspections

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

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

G. Non – Storm Water discharges

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

- Ø Water from water line flushings.

- Ø Water form cleaning concrete trucks and equipment.
- Ø Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Ø Uncontaminated groundwater and rain water (from dewatering during excavation).

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

H. Groundwater Protection Plan (3)

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

- Ø Contractors statement: (3)

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

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

_____ 2. (f) Storing, …, or related handling of hazardous waste, solid waste or special waste, …, in tanks, drums, or other containers, or in piles, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);

_____ 2. (g) …. Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

_____ 2. (j) Storing or related handling of road oils, dust suppressants, …., at a central location;

_____ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

_____ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this does not include bore holes for the purpose of explosive demolition);

Or, check the following only if there are no qualifying activities

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

The contractor is responsible for the preparation of a plan that addresses the

401 KAR 5:037 Section 3. (3) Elements of site specific groundwater protection plan:

(a) General information about this project is covered in the Project information;
(b) Activities that require a groundwater protection plan have been identified above;
(c) Practices that will protect groundwater from pollution are addressed in section C. Other control measures.
(d) Implementation schedule – all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity;
(e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provide to the resident engineer.
(f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections
(g) Certification (see signature page.)

KyTC BMP Plan for Project PCN ## -

Contractor and Resident Engineer Plan certification

The contractor that is responsible for implementing this BMP plan is identified in the Project Information section of this plan.

The following certification applies to all parties that are signatory to this BMP plan:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, this plan complies with the requirements of 401 KAR 5:037. By this certification, the undersigned state that the individuals signing the plan have reviewed the terms of the plan and will implement its provisions as they pertain to ground water protection.

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

Signed _____title_____, _____
Typed or printed name[2] signature

(3) Signed _____title_____, _____
Typed or printed name[1] signature

1. Contractors Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

2. KyTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601 Reference the Project Control Number (PCN) and KPDES number when one has been issued.

Sub-Contractor Certification

The following sub-contractor shall be made aware of the BMP plan and responsible for implementation of BMPs identified in this plan as follows:

Subcontractor

Name:
Address:
Address:

Phone:

The part of BMP plan this subcontractor is responsible to implement is:

I certify under penalty of law that I understand the terms and conditions of the general Kentucky Pollutant Discharge Elimination System permit that authorizes the storm water discharges, the BMP plan that has been developed to manage the quality of water to be discharged as a result of storm events associated with the construction site activity and management of non-storm water pollutant sources identified as part of this certification.

Signed _____title_____, _____
Typed or printed name[1] signature

1. Sub Contractor Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2012* and *Standard Drawings, Edition of 2012 with the 2012 Revision.*

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the September 27, 2013 Letting

Subsection:	108.03 Preconstruction Conference.
Revision:	Replace 8) Staking with the following: 8) Staking (designated by a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	109.07.02 Fuel.
Revision:	Revise item Crushed Aggregate Used for Embankment Stabilization to the following: Crushed Aggregate Used for Stabilization of Unsuitable Materials Used for Embankment Stabilization
Subsection:	110.02 Demobilization.
Revision:	Replace the first part of the first sentence of the second paragraph with the following: Perform all work and operations necessary to accomplish final clean-up as specified in the first paragraph of Subsection 105.12;
Subsection:	112.03.12 Project Traffic Coordinator (PTC).
Revision:	Replace the last paragraph of this subsection with the following: Ensure the designated PTC has sufficient skill and experience to properly perform the task assigned and has successfully completed the qualification courses.
Subsection:	112.04.18 Diversions (By-Pass Detours).
Revision:	Insert the following sentence after the 2nd sentence of this subsection. The Department will not measure temporary drainage structures for payment when the contract documents provide the required drainage opening that must be maintained with the diversion. The temporary drainage structures shall be incidental to the construction of the diversion. If the contract documents fail to provide the required drainage opening needed for the diversion, the cost of the temporary drainage structure will be handled as extra work in accordance with section 109.04.
Subsection:	201.03.01 Contractor Staking.
Revision:	Replace the first paragraph with the following: Perform all necessary surveying under the general supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	201.04.01 Contractor Staking.
Revision:	Replace the last sentence of the paragraph with the following: Complete the general layout of the project under the supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	206.04.01 Embankment-in-Place.
Revision:	Replace the fourth paragraph with the following: The Department will not measure **suitable** excavation included in the original plans that is disposed of for payment and will consider it incidental to Embankment-in-Place.
Subsection:	208.02.01 Cement.
Revision:	Replace paragraph with the following: Select Type I or Type II cement conforming to Section 801. Use the same type cement throughout the work.

Subsection: **Revision:**	208.03.06 Curing and Protection. Replace the fourth paragraph with the following: Do not allow traffic or equipment on the finished surface until the stabilized subgrade has cured for a total of 7-days with an ambient air temperature above 40 degrees Fahrenheit. A curing day consists of a continuous 24-hour period in which the ambient air temperature does not fall below 40 degrees Fahrenheit. Curing days will not be calculated consecutively, but must total seven (7) , 24-hour days with the ambient air temperature remaining at or above 40 degrees Fahrenheit before traffic or equipment will be allowed to traverse the stabilized subgrade. The Department may allow a shortened curing period when the Contractor requests. The Contractor shall give the Department at least 3 day notice of the request for a shortened curing period. The Department will require a minimum of 3 curing days after final compaction. The Contractor shall furnish cores to the treated depth of the roadbed at 500 feet intervals for each lane when a shortened curing time is requested. The Department will test cores using an unconfined compression test. Roadbed cores must achieve a minimum strength requirement of 80 psi.
Subsection: **Revision:**	208.03.06 Curing and Protection. Replace paragraph nine with the following: At no expense to the Department, repair any damage to the subgrade caused by freezing.
Subsection: **Part:** **Number:** **Revision:**	212.03.03 Permanent Seeding and Protection. A) Seed Mixtures for Permanent Seeding. 2) Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 4, 5, 6, and 7. Apply seed mix Type II at a minimum application rate of 100 pounds per acre. If adjacent to a golf course replace the crown vetch with Kentucky 31 Tall Fescue.
Subsection: **Part:** **Number:** **Revision:**	212.03.03 Permanent Seeding and Protection. A) Seed Mixtures for Permanent Seeding. 3) Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 1, 2, 3, 8, 9, 10, 11, and 12. Apply seed mix Type III at a minimum application rate of 100 pounds per acre. If adjacent to crop land or golf course, replace the Sericea Lespedeza with Kentucky 31 Fescue.
Subsection: **Revision:**	213.03.02 Progress Requirements. Replace the last sentence of the third paragraph with the following: Additionally, the Department will apply a penalty equal to the liquidated damages when all aspects of the work are not coordinated in an acceptable manner within 7 calendar days after written notification.
Subsection: **Part:** **Revision:**	213.03.05 Temporary Control Measures. E) Temporary Seeding and Protection. Delete the second sentence of the first paragraph.
Subsection: **Table:** **Revision:**	304.02.01 Physical Properties. Required Geogrid Properties Replace all references to Test Method "GRI-GG2-87" with ASTM D 7737.

Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	B) Sampling.
Revision:	Replace the second sentence with the following: The Department will determine when to obtain the quality control samples using the random-number feature of the mix design submittal and approval spreadsheet. The Department will randomly determine when to obtain the verification samples required in Subsections 402.03.03 and 402.03.04 using the Asphalt Mixture Sample Random Tonnage Generator.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	3) VMA.
Revision:	Add the following paragraph below Number 3) VMA: Retain the AV/VMA specimens and one additional corresponding G_{mm} sample for 5 working days for mixture verification testing by the Department. For Specialty Mixtures, retain a mixture sample for 5 working days for mixture verification testing by the Department. When the Department's test results do not verify that the Contractor's quality control test results are within the acceptable tolerances according to Subsection 402.03.03, retain the samples and specimens from the affected sublot(s) for the duration of the project.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	4) Density.
Revision:	Replace the second sentence of the Option A paragraph with the following: Perform coring by the end of the following work day.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	5) Gradation.
Revision:	Delete the second paragraph.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	H) Unsatisfactory Work.
Number:	1) Based on Lab Data.
Revision:	Replace the second paragraph with the following: When the Engineer determines that safety concerns or other considerations prohibit an immediate shutdown, continue work and the Department will make an evaluation of acceptability according to Subsection 402.03.05.

Subsection: **Revision:**	402.03.03 Verification. Replace the first paragraph with the following: **402.03.03 Mixture Verification.** For volumetric properties, the Department will perform a minimum of one verification test for AC, AV, and VMA according to the corresponding procedures as given in Subsection 402.03.02. The Department will randomly determine when to obtain the verification sample using the Asphalt Mixture Sample Random Tonnage Generator. For specialty mixtures, the Department will perform one AC and one gradation determination per lot according to the corresponding procedures as given in Subsection 402.03.02. However, Department personnel will not perform AC determinations according to KM 64-405. The Contractor will obtain a quality control sample at the same time the Department obtains the mixture verification sample and perform testing according to the procedures given in Subsection 402.03.02. If the Contractor's quality control sample is verified by the Department's test results within the tolerances provided below, the Contractor's sample will serve as the quality control sample for the affected sublot. The Department may perform the mixture verification test on the Contractor's equipment or on the Department's equipment.
Subsection: **Part:** **Revision:**	402.03.03 Verification. A) Evaluation of Sublot(s) Verified by Department. Replace the third sentence of the second paragraph with the following: When the paired *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection: **Part:** **Revision:**	402.03.03 Verification. B) Evaluation of Sublots Not Verified by Department. Replace the third sentence of the first paragraph with the following: When differences between test results are not within the tolerances listed below, the Department will resolve the discrepancy according to Subsection 402.03.05.
Subsection: **Part:** **Revision:**	402.03.03 Verification. B) Evaluation of Sublots Not Verified by Department. Replace the third sentence of the second paragraph with the following: When the *F* -test or *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection: **Part:** **Revision:**	402.03.03 Verification. C) Test Data Patterns. Replace the second sentence with the following: When patterns indicate substantial differences between the verified and non-verified sublots, the Department will perform further comparative testing according to subsection 402.03.05.

Subsection: **Revision:**	402.03 CONSTRUCTION. Add the following subsection: **402.03.04 Testing Equipment and Technician Verification.** For mixtures with a minimum quantity of 20,000 tons and for every 20,000 tons thereafter, the Department will obtain an additional verification sample at random using the Asphalt Mixture Sample Random Tonnage Generator in order to verify the integrity of the Contractor's and Department's laboratory testing equipment and technicians. The Department will obtain a mixture sample of at least 150 lb at the asphalt mixing plant according to KM 64-425 and split it according to AASHTO R 47. The Department will retain one split portion of the sample and provide the other portion to the Contractor. At a later time convenient to both parties, the Department and Contractor will simultaneously reheat the sample to the specified compaction temperature and test the mixture for AV and VMA using separate laboratory equipment according to the corresponding procedures given in Subsection 402.03.02. The Department will evaluate the differences in test results between the two laboratories. When the difference between the results for AV or VMA is not within ± 2.0 percent, the Department will investigate and resolve the discrepancy according to Subsection 402.03.05.
Subsection: **Revision:**	402.03.04 Dispute Resolution. Change the subsection number to 402.03.05.
Subsection: **Part:** **Table:** **Revision:**	402.05 PAYMENT. Lot Pay Adjustment Schedule Compaction Option A Base and Binder Mixtures AC Replace the Deviation from JMF(%) that corresponds to a Pay Value of 0.95 to ±0.6.
Subsection: **Revision:**	403.02.10 Material Transfer Vehicle (MTV). Replace the first sentence with the following: In addition to the equipment specified above, provide a MTV with the following minimum characteristics:
Subsection: **Revision:**	412.02.09 Material Transfer Vehicle (MTV). Replace the paragraph with the following: Provide and utilize a MTV with the minimum characteristics outlined in section 403.02.10.
Subsection: **Revision:**	412.03.07 Placement and Compaction. Replace the first paragraph with the following: Use a MTV when placing SMA mixture in the driving lanes. The MTV is not required on ramps and/or shoulders unless specified in the contract. When the Engineer determines the use of the MTV is not practical for a portion of the project, the Engineer may waive its requirement for that portion of pavement by a letter documenting the waiver.
Subsection: **Revision:**	412.04 MEASUREMENT. Add the following subsection: 412.04.03. Material Transfer Vehicle (MTV). The Department will not measure the MTV for payment and will consider its use incidental to the asphalt mixture.

Subsection: **Part:** **Revision:**	501.03.19 Surface Tolerances and Testing Surface. B) Ride Quality. Add the following to the end of the first paragraph: The Department will specify if the ride quality requirements are Category A or Category B when ride quality is specified in the Contract. Category B ride quality requirements shall apply when the Department fails to classify which ride quality requirement will apply to the Contract.
Subsection: **Revision:**	603.03.06 Cofferdams. Replace the seventh sentence of paragraph one with the following: Submit drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	605.03.04 Tack Welding. Insert the subsection and the following: 605.03.04 Tack Welding. The Department does not allow tack welding.
Subsection: **Part:** **Number:** **Revision:**	606.03.17 Special Requirements for Latex Concrete Overlays. A) Existing Bridges and New Structures. 1) Prewetting and Grout-Bond Coat. Add the following sentence to the last paragraph: Do not apply a grout-bond coat on bridge decks prepared by hydrodemolition.
Subsection: **Revision:**	609.03 Construction. Replace Subsection 609.03.01 with the following: 609.03.01 A) Swinging the Spans. Before placing concrete slabs on steel spans or precast concrete release the temporary erection supports under the bridge and swing the span free on its supports. 609.03.01 B) Lift Loops. Cut all lift loops flush with the top of the precast beam once the beam is placed in the final location and prior to placing steel reinforcement. At locations where lift loops are cut, paint the top of the beam with galvanized or epoxy paint.
Subsection: **Revision:**	611.03.02 Precast Unit Construction. Replace the first sentence of the subsection with the following: Construct units according to ASTM C1577, **replacing Table 1 (Design Requirements for Precast Concrete Box Sections Under Earth, Dead and HL-93 Live Load Conditions) with KY Table 1 (Precast Culvert KYHL-93 Design Table)**, and Section 605 with the following exceptions and additions:
Subsection: **Number:** **Revision:**	613.03.01 Design. 2) Replace "AASHTO Standard Specifications for Highway Bridges" with "AASHTO LRFD Bridge Design Specifications"
Subsection: **Revision:**	615.06.02 Add the following sentence to the end of the subsection. The ends of units shall be normal to walls and centerline except exposed edges shall be beveled ¾ inch.
Subsection: **Revision:**	615.06.03 Placement of Reinforcement in Precast 3-Sided Units. Replace the reference of 6.6 in the section to 615.06.06.
Subsection: **Revision:**	615.06.04 Placement of Reinforcement for Precast Endwalls. Replace the reference of 6.7 in the section to 615.06.07.

Subsection: **Revision:**	615.06.06 Laps, Welds, and Spacing for Precast 3-Sided Units. Replace the subsection with the following: Tension splices in the circumferential reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. The overlap of welded wire fabric shall be measured between the outer most longitudinal wires of each fabric sheet. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. For splices other than tension splices, the overlap shall be a minimum of 12" for welded wire fabric or deformed billet-steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be no less than 2 inches and no more than 4 inches. The spacing center to center of the longitudinal wires shall not be more than 8 inches. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 16 inches.
Subsection: **Revision:**	615.06.07 Laps, Welds, and Spacing for Precast Endwalls. Replace the subsection with the following: Splices in the reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. The spacing center-to-center of the wire fabric sheet shall not be less than 2 inches or more than 8 inches.
Subsection: **Revision:**	615.08.01 Type of Test Specimen. Replace the subsection with the following: Start-up slump, air content, unit weight, and temperature tests will be performed each day on the first batch of concrete. Acceptable start-up results are required for production of the first unit. After the first unit has been established, random acceptance testing is performed daily for each 50 yd^3 (or fraction thereof). In addition to the slump, air content, unit weight, and temperature tests, a minimum of one set of cylinders shall be required each time plastic property testing is performed.
Subsection: **Revision:**	615.08.02 Compression Testing. Delete the second sentence.
Subsection:	615.08.04 Acceptability of Core Tests. Delete the entire subsection.
Subsection: **Revision:**	615.12 Inspection. Add the following sentences to the end of the subsection: Units will arrive at jobsite with the "Kentucky Oval" stamped on the unit which is an indication of acceptable inspection at the production facility. Units shall be inspected upon arrival for any evidence of damage resulting from transport to the jobsite.

Subsection: **Revision:**	716.02.02 Paint. Replace sentence with the following: Conform to Section 821.
Subsection: **Revision:**	716.03 CONSTRUCTION. Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,
Subsection: **Revision:**	716.03.02 Lighting Standard Installation. Replace the second sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.
Subsection: **Part:** **Revision:**	716.03.02 Lighting Standard Installation. A) Conventional Installation. Replace the third sentence with the following: Orient the transformer base so the door is positioned on the side away from on-coming traffic.
Subsection: **Part:** **Number:** **Revision:**	716.03.02 Lighting Standard Installation. A) Conventional Installation. 1) Breakaway Installation and Requirements. Replace the first sentence with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection: **Part:** **Revision:**	716.03.02 Lighting Standard Installation. B) High Mast Installation Replace the first sentence with the following: Install each high mast pole as noted on plans.
Subsection: **Part:** **Number:** **Revision:**	716.03.02 Lighting Standard Installation. B) High Mast Installation 2) Concrete Base Installation Modification of Chart and succeeding paragraphs within this section:

Drilled Shaft Depth Data							
Level Ground		3:1 Ground Slope		2:1 Ground Slope		1.5:1 Ground Slope (2)	
Soil	Rock	Soil	Rock	Soil	Rock	Soil	Rock
17 ft	7 ft	19 ft	7 ft	20 ft	7 ft	(1)	7 ft

Steel Requirements			
Vertical Bars		Ties or Spiral	
Size	Total	Size	Spacing or Pitch
#10	16	#4	12 inch

	(1): Shaft length is 22' for cohesive soil only. For cohesionless soil, contact geotechnical branch for design. (2): Do not construct high mast drilled shafts on ground slopes steeper than 1.5:1 without the approval of the Division of Traffic. If rock is encountered during drilling operations and confirmed by the engineer to be of sound quality, the shaft is only required to be further advanced into the rock by the length of rock socket shown in the table. The total length of the shaft need not be longer than that of soil alone. Both longitudinal rebar length and number of ties or spiral length shall be adjusted accordingly. If a shorter depth is desired for the drilled shaft, the contractor shall provide, for the state's review and approval, a detailed column design with individual site specific soil and rock analysis performed and approved by a Professional Engineer licensed in the Commonwealth of Kentucky. Spiral reinforcement may be substituted for ties. If spiral reinforcement is used, one and one-half closed coils shall be provided at the ends of each spiral unit. Subsurface conditions consisting of very soft clay or very loose saturated sand could result in soil parameters weaker than those assumed. Engineer shall consult with the geotechnical branch if such conditions are encountered. The bottom of the drilled hole shall be firm and thoroughly cleaned so no loose or compressible materials are present at the time of the concrete placement. If the drilled hole contains standing water, the concrete shall be placed using a tremie to displace water. Continuous concrete flow will be required to insure full displacement of any water. The reinforcement and anchor bolts shall be adequately supported in the proper positions so no movement occurs during concrete placement. Welding of anchor bolts to the reinforcing cage is unacceptable, templates shall be used. Exposed portions of the foundation shall be formed to create a smooth finished surface. All forming shall be removed upon completion of foundation construction.
Subsection: **Part:** **Revision:**	716.03.03 Trenching. A) Trenching of Conduit for Highmast Ducted Cables. Add the following after the first sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection: **Part:** **Revision:**	716.03.03 Trenching. B) Trenching of Conduit for Non-Highmast Cables. Add the following after the second sentence: If depths greater than 24 inches are necessary for either situation listed previously, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection: **Revision:**	716.03.10 Junction Boxes. Replace subsection title with the following: Electrical Junction Box.

Subsection: **Revision:**	716.04.07 Pole with Secondary Control Equipment. Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure mounting the cabinet to the pole, backfilling, restoration, any necessary hardware to anchor pole, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breaker, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection: **Revision:**	716.04.08 Lighting Control Equipment. Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure constructing the concrete base, excavation, backfilling, restoration, any necessary anchors, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breakers, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection: **Revision:**	716.04.09 Luminaire. Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection: **Revision:**	716.04.10 Fused Connector Kits. Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection: **Revision:**	716.04.13 Junction Box. Replace the subsection title with the following: Electrical Junction Box Type Various.
Subsection: **Part:** **Revision:**	716.04.13 Junction Box. A) Junction Electrical. Rename A) Junction Electrical to the following: A) Electrical Junction Box.
Subsection: **Revision:**	716.04.14 Trenching and Backfilling. Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.
Subsection: **Revision:**	716.04.18 Remove Lighting. Replace the paragraph with the following: The Department will measure the quantity as a lump sum for the removal of lighting equipment. The Department will not measure the disposal of all equipment and materials off the project by the contractor. The Department also will not measure the transportation of the materials and will consider them incidental to this item of work.

Subsection:	716.04.20 Bore and Jack Conduit.
Revision:	Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.
Subsection:	716.05 PAYMENT.
Revision:	Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following:

Code	Pay Item	Pay Unit
04810	Electrical Junction Box	Each
04811	Electrical Junction Box Type B	Each
20391NS835	Electrical Junction Box Type A	Each
20391NS835	Electrical Junction Box Type C	Each

Subsection:	723.03 CONSTRUCTION.
Revision:	Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,
Subsection:	723.02.02 Paint.
Revision:	Replace sentence with the following: Conform to Section 821.
Subsection:	723.03.02 Poles and Bases Installation.
Revision:	Replace the first sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.
Subsection:	723.03.02 Poles and Bases Installation.
Part:	A) Steel Strain and Mastarm Poles Installation
Revision:	Replace the second paragraph with the following: For concrete base installation, see Section 716.03.02, B), 2), Paragraphs 2-7. Drilled shaft depth shall be based on the soil conditions encountered during drilling and slope condition at the site. Refer to the design chart below:
Subsection:	723.03.02 Poles and Bases Installation.
Part:	B) Pedestal or Pedestal Post Installation.
Revision:	Replace the fourth sentence of the paragraph with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	723.03.03 Trenching.
Part:	A) Under Roadway.
Revision:	Add the following after the second sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain ether required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.

Subsection:	723.03.11 Wiring Installation.
Revision:	Add the following sentence between the fifth and sixth sentences: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection:	723.03.12 Loop Installation.
Revision:	Replace the fifth sentence with the following: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection:	723.04.02 Junction Box.
Revision:	Replace subsection title with the following: Electrical Junction Box Type.
Subsection:	723.04.03 Trenching and Backfilling.
Revision:	Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.
Subsection:	723.04.10 Signal Pedestal.
Revision:	Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, specified conduits, fittings, ground rod, ground wire, backfilling, restoring disturbed areas, or other necessary hardware and will consider them incidental to this item of work.
Subsection:	723.04.15 Loop Saw Slot and Fill.
Revision:	Replace the second sentence with the following: The Department will not measure sawing, cleaning and filling induction loop saw slot, loop sealant, backer rod, and grout and will consider them incidental to this item of work.
Subsection:	723.04.16 Pedestrian Detector.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished, installed and connected to pole/pedestal. The Department will not measure installing R10-3e (with arrow) sign, furnishing and installing mounting hardware for sign and will consider them incidental to this item of work.
Subsection:	723.04.18 Signal Controller- Type 170.
Revision:	Replace the second sentence with the following: The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure furnishing and connecting the induction of loop amplifiers, pedestrian isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.

Subsection: **Revision:**	723.04.20 Install Signal Controller - Type 170. Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed. The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, and excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure connecting the induction loop amplifiers, pedestrian, isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.22 Remove Signal Equipment. Replace the paragraph with the following: The Department will measure the quantity as a lump sum removal of signal equipment. The Department will not measure the return of control equipment and signal heads to the Department of Highways as directed by the District Traffic Engineer. The Department also will not measure the transportation of materials of the disposal of all other equipment and materials off the project by the contractor and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.28 Install Pedestrian Detector Audible. Replace the second sentence with the following: The Department will not measure installing sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection: **Revision:**	723.04.29 Audible Pedestrian Detector. Replace the second sentence with the following: The Department will not measure furnishing and installing the sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection: **Revision:**	723.04.30 Bore and Jack Conduit. Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.
Subsection: **Revision:**	723.04.31 Install Pedestrian Detector. Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed and connected to pole/pedestal. The Department will not measure installing sign R 10-3e (with arrow) and will consider it incidental to this item of work.
Subsection: **Revision:**	723.04.32 Install Mast Arm Pole. Replace the second sentence with the following: The Department will not measure arms, signal mounting brackets, anchor bolts, or any other necessary hardware and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.33 Pedestal Post. Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, conduit, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

Subsection: **Revision:**	723.04.36 Traffic Signal Pole Base. Replace the second sentence with the following: The Department will not measure excavation, reinforcing steel, anchor bolts, specified conduits, ground rods, ground wires, backfilling, or restoration and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.37 Install Signal Pedestal. Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.38 Install Pedestal Post. Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.
Subsection: **Revision:**	723.05 PAYMENT. Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following: Code — Pay Item — Pay Unit 04810 — Electrical Junction Box — Each 04811 — Electrical Junction Box Type B — Each 20391NS835 — Electrical Junction Box Type A — Each 20391NS835 — Electrical Junction Box Type C — Each
Subsection: **Revision:**	813.04 Gray Iron Castings. Replace the reference to "AASHTO M105" with "ASTM A48".
Subsection: **Number:** **Revision:**	813.09.02 High Strength Steel Bolts, Nuts, and Washers. A) Bolts. Delete first paragraph and "Hardness Number" Table. Replace with the following: A) Bolts. Conform to ASTM A325 (AASHTO M164) or ASTM A490 (AASHTO 253) as applicable.
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Third paragraph, replace the reference to "AWPA C14" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Replace the first sentence of the fourth paragraph with the following: Use any of the species of wood for round or square posts covered under AWPA U1.
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Fourth paragraph, replace the reference to "AWPA C2" with "AWPA U1, Section B, Paragraph 4.1".
Subsection: **Revision:**	814.04.02 Timber Guardrail Posts. Delete the second sentence of the fourth paragraph.
Subsection: **Revision:**	816.07.02 Wood Posts and Braces. First paragraph, replace the reference to "AWPA C5" with "AWPA U1, Section B, Paragraph 4.1".

Subsection: **Revision:**	816.07.02 Wood Posts and Braces. Delete the second sentence of the first paragraph.
Subsection: **Revision:**	818.07 Preservative Treatment. First paragraph, replace all references to "AWPA C14" with "AWPA U1, Section A".
Subsection: **Revision:**	834.14 LIGHTING POLES. Replace the first sentence with the following: Lighting pole design shall be in accordance with loading and allowable stress requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection: **Revision:**	834.14.03 High Mast Poles. *Remove the second and fourth sentence from the first paragraph. *Replace the third paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky. *Replace paragraph six with the following: Provide a pole section that conforms to ASTM A 595 grade A with a minimum yield strength of 55 KSI or ASTM A 572 with a minimum yield strength of 55 KSI. Use tubes that are round or 16 sided with a four inch corner radius, have a constant linear taper of .144 in/ft and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Provide pole sections that are telescopically slip fit assembled in the field to facilitate inspection of interior surface welds and the protective coating. The minimum length of the telescopic slip splices shall be 1.5 times the inside diameter of the exposed end of the female section. Use longitudinal seam welds as commended in Section 5.15 of the AASHTO 2013 Specifications. The thickness of the transverse base shall not be less than 2 inches. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration groove weld with backup bar. The handhole cover shall be removable from the handhole frame. One the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM A 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7-guage stainless steel to provide adjustability to insure weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube of the pole but needs to be at least 15 inches. The handhole frame width shall be 0.4 times the diameter of the bottom tube. Provide products that are hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A 153 (hardware items).
Subsection: **Revision:**	834.16 ANCHOR BOLTS. Insert the following sentence at the beginning of the paragraph: The anchor bolt design shall follow the NCHRP Report 494 Section 2.4 and NCHRP 469 Appendix A Specifications.

Subsection: **Revision:**	834.17.01 Conventional. Add the following sentence after the second sentence: Provide a waterproof sticker mounted on the bottom of the housing that is legible from the ground and indicates the wattage of the fixture by providing the fist to numbers of the wattage.
Subsection: **Revision:**	834.21.01 Waterproof Enclosures. *Add the following sentence in the second paragraph in the thirteenth sentence: Provide a cabinet door with a louvered air vent, Filter-retaining brackets and an easy clean metal filter. *Replace sentence sixteen with the following: Use a 120-volt fixture and utilize a compact fluorescent or L.E.D. bulb (equivalent to 60 watt minimum).
Subsection: **Revision:**	835.07 Traffic Poles. Replace the first sentence of the first paragraph with the following: Pole diameter and wall thickness shall be calculated in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection: **Revision:**	835.07 Traffic Poles. *Replace the first sentence of the fourth paragraph with the following: Ensure transverse plats have a thickness ≥ 2 inches. *Add the following sentence to the end of the fourth paragraph: The bottom pole diameter shall not be less than 16.25 inches.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the second sentence of the fifth paragraph with the following: For anchor bolt design, pole forces shall be positioned in such a manner to maximize the force on any individual anchor bolt regardless of the actual anchor bolt orientation with the pole.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the first and second sentence of the sixth paragraph with the following: The pole handhole shall be 25 inches by 6.5 inches. The handhole cover shall be removable from the handhole frame. On the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7 gauge stainless steel to provide adjustability to insure a weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube but needs to be at least 12 inches.
Subsection: **Revision:**	835.07 Traffic Poles. *Replace the first sentence of the last paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky. *Replace the third sentence of the last paragraph with the following: All tables referenced in 835.07 are found in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.

Subsection: **Revision:**	835.07.01 Steel Strain Poles. Replace the second sentence of the second paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	835.07.01 Steel Strain Poles. Replace number 7. after the second paragraph with the following: 7. Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection: **Revision:**	835.07.02 Mast Arm Poles. Replace the second sentence of the fourth paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	835.07.02 Mast Arm Poles. Replace number 7) after the fourth paragraph with the following: 7) Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection: **Revision:**	835.07.03 ANCHORS. Add the following to the end of the paragraph: There shall be two steel templates (one can be used for the headed part of the anchor bolt when designed in this manner) provided per pole. Templates shall be contained within a 26.5 inch diameter. All templates shall be fully galvanized (ASTM A 153).
Subsection: **Revision:**	835.16.05 Optical Units. Replace the 3rd paragraph with the following: The list of certified products can be found on the following website: http://www.intertek.com.
Subsection: **Revision:**	835.19.01 Pedestrian Detector Body. Replace the first sentence with the following: Provide a four holed pole mounted aluminum rectangular housing that is a compatible with the pedestrian detector.

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SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

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

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

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

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12) Allow an on-off flashing sequence at an adjustable rate.
13) Provide a sight to aim the message.
14) Provide a LED display color of approximately 590 nm amber.
15) Provide a controller that is password protected.
16) Provide a security device that prevents unauthorized individuals from accessing the controller.
17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

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

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

2.3 Power.

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

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

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

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be

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the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

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

Code	Pay Item	Pay Unit
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

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SPECIAL NOTE FOR ROADBED STABILIZATION AT BRIDGE ENDS

This Special Note will apply where indicated on the plans or in the proposal. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. Due to the wet and yielding embankments commonly encountered at bridge ends, undercut the existing roadbed within the limits the Contract specifies and backfill.

2.0 MATERIALS.

2.1 Geotextile Fabric. Furnish Type III fabric conforming to Section 843.

3.0 CONSTRUCTION. After removing the existing pavement and base, undercut the existing roadbed under the traffic lanes and shoulders as the Engineer directs. The minimum undercut shall be one foot, except undercut depth may be reduced where rock embankment constructed principally of limestone is encountered. Place geotextile fabric in the bottom and against the sides and ends of the undercut. The Department will not require a minimum lap between adjacent sheets of geotextile fabric for the longitudinal joint under the pavement centerline. Backfill the undercut with one or more of the following materials;

1) Crushed limestone size No. 1, 2, 23, or 57; or
2) Layered composition of several limestone sizes, with larger sizes on the bottom.

Use Dense Graded Aggregate (DGA), Crushed Stone Base (CSB), or Stabilized Aggregate Base (SAB) in the top 4 inches, and only in the top 4 inches, of the backfill.

Place geotextile fabric between the coarse backfill material and the 4-inch upper layer.

Compact the backfill material by "walking down" with equipment, or other methods the Engineer approves. See attached drawing for details of backfill placement and drainage.

Waste all removed materials, not used for purposes the Contract or Engineer specifies or permits, off the right-of-way at no expense to the Department.

4.0 MEASUREMENT.

4.1 Removing Pavement. The Department will measure the quantity in square yards. The Department will consider the pavement to include existing pavement, existing asphalt patching, and existing DGA base.

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4.2 Roadway Excavation. The Department will measure the quantity in cubic yards.

4.3 Backfilling Undercut. The Department will measure the quantity in cubic yards. The Department will not measure coarse aggregate for payment and will consider it incidental to this item of work.

4.4 Perforated Pipe. The Department will measure the quantity in linear feet.

4.5 Non-Perforated Pipe. The Department will measure the quantity in linear feet.

4.6 Geotextile Fabric, Type III. The Department will measure the quantity in square yards.

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

Code	Pay Item	Pay Unit
02091	Removing Pavement	Square Yard
01000	Perforated Pipe - 4 inches	Linear Foot
01010	Non-Perforated Pipe, 4 inches	Linear Foot
02235	Backfilling Undercut	Cubic Yard
02598	Fabric - Geotextile Type III	Square Yard

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

June 15, 2012

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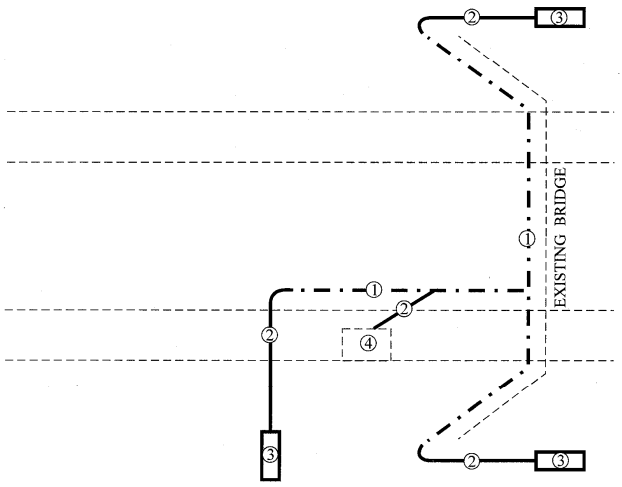
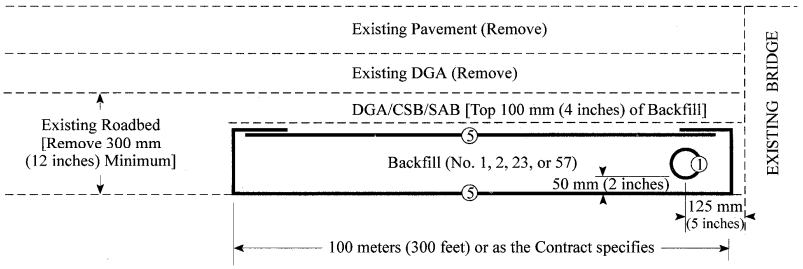
BRIDGE END DRAINAGE AND STABILIZATION
(DETAILS)





NOTES

Contrary to Section 705 of the Standard Specifications, use only coarse aggregate for trench backfill.

Slope all pipe to drain to the outside. Provide a 1:24 (1/2":1') or greater slope for the outlet pipe.

The Department may require additional transverse drains within the stabilization area.

LEGEND

① 100-mm (4-inch) Perforated Pipe
② 100-mm (4-inch) Non-perforated Pipe
③ Perforated Pipe Headwall
④ Existing Box Inlet
⑤ Geotextile Fabric, Type III

11D

SPECIAL NOTE FOR ROCK BLASTING

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. This work consists of fracturing rock and constructing stable final rock cut faces using presplit blasting and production blasting techniques.

2.0 MATERIALS. Deliver, store, and use explosives according to the manufacturer's recommendations and applicable laws. Do not use explosives outside their recommended use date. Verify date of manufacture and provide copies of the technical data sheets (TDS) and material safety data sheets (MSDS) to the Engineer. Explosives and initiating devices include, but are not necessarily limited to, dynamite and other high explosives, slurries, water gels, emulsions, blasting agents, initiating explosives, detonators, blasting caps, and detonating cord.

3.0 CONSTRUCTION. Furnish copies or other proof of all-applicable permits and licenses. Comply with Federal, State, and local regulations on the purchase, transportation, storage, and use of explosive material. Regulations include but are not limited to the following:

1) KRS 351.310 through 351.9901.
2) 805 KAR 4:005 through 4:165
3) Applicable rules and regulations issued by the Office of Mine Safety and Licensing.
4) Safety and health. OSHA, 29 CFR Part 1926, Subpart U.
5) Storage, security, and accountability. Bureau of Alcohol, Tobacco, and Firearms (BATF), 27 CFR Part 181.
6) Shipment. DOT, 49 CFR Parts 171-179, 390-397.

3.1 Blaster-in-Charge. Designate in writing a blaster-in-charge and any proposed alternates for the position. Submit documentation showing the blaster-in-charge, and alternates, have a valid Kentucky blaster's license. Ensure the blaster-in-charge or approved alternate is present at all times during blasting operations.

3.2 **Blasting Plans.** Blasting plans and reports are for quality control and record keeping purposes. Blasting reports are to be signed by the blaster-in-charge or the alternate blaster-in-charge. The general review and acceptance of blasting plans does not relieve the Contractor of the responsibility whatsoever for conformance to regulations or for obtaining the required results. All blasting plans shall be submitted to the Engineer. The Engineer will be responsible for submitting the plan to the Central Office Division of Construction and the Division of Mine Reclamation and Enforcement, Explosives and Blasting Branch at the following address: 2 Hudson Hollow, Frankfort, Kentucky, 40601.

A) General Blasting Plan. Submit a general blasting plan for acceptance at least 15 working days before drilling operations begin. Include, as a minimum, the following safety and procedural details:

1) Working procedures and safety precautions for storing, transporting, handling, detonating explosives. Include direction on pre and post blast audible procedures, methods of addressing misfires, and methods of addressing inclement weather, including lightning.
2) Proposed product selection for both dry and wet holes. Furnish Manufacturer's TDS and MSDS for all explosives, primers, initiators, and other blasting devices.
3) Proposed initiation and delay methods.
4) Proposed format for providing all the required information for the site specific blasting shot reports.

B) Preblast Meeting. Prior to drilling operations, conduct a preblast meeting to discuss safety and traffic control issues and any site specific conditions that will need to be addressed. Ensure, at a minimum, that the Engineer or lead inspector, Superintendent, blaster-in-charge, and all personnel involved in the blasting operation are present. Site specific conditions include blast techniques; communication procedures; contingency plans and equipment for dealing with errant blast material. The conditions of the General Blasting plan will be discussed at this meeting. Record all revisions and additions made to the blasting plan and obtain written concurrence by the blaster-in-charge. Provide a copy of the signed blast plan to the Engineer along with the sign in sheet from the preblast meeting.

3.3 Preblast Condition Survey and Vibration Monitoring and Control. Before blasting, arrange for a preblast condition survey of nearby buildings, structures, or utilities, within 500 feet of the blast or that could be at risk from blasting damage. Provide the Engineer a listing of all properties surveyed and any owners denying entry or failing to respond. Notify the Engineer and occupants of buildings at risk at least 24 hours before blasting.

Limit ground vibrations and airblast to levels that will not exceed limits of 805 KAR 4:005 through 4:165. More restrictive levels may be specified in the Contract.

Size all blast designs based on vibration, distance to nearest building or utility, blast site geometry, atmospheric conditions and other factors. Ground vibrations are to be controlled according to the blasting standards and scaled distance formulas in 805 KAR 4:020 or by the use of seismographs as allowed in 805 KAR 4:030. The Department will require seismographs at the nearest allowable location to the protected site when blasting occurs within 500 feet of buildings, structures, or utilities.

3.4 Blasting. Drill and blast at the designated slope lines according to the blasting plan. Perform presplitting to obtain smooth faces in the rock and shale formations. Perform the presplitting before blasting and excavating the interior portion of the specified cross section at any location. The Department may allow blasting for fall benches and haul roads prior to presplitting when blasting is a sufficient distance from the final slope and results are satisfactory to the Engineer. Use the types of explosives and blasting accessories necessary to obtain the required results.

Free blast holes of obstructions for their entire depth. Place charges without caving the blast hole walls. Stem the upper portion of all blast holes with dry sand or other granular material passing the 3/8-inch sieve. Dry drill cuttings are acceptable for stemming when blasts are more than 800 feet from the nearest dwelling.

Stop traffic during blasting operations when blasting near any road and ensure traffic does not pass through the Danger Zone. The blaster-in-charge will define the Danger Zone prior to each blast. Ensure traffic is stopped outside the Danger Zone, and in no case within 800 feet of the blast location.

Following a blast, stop work in the entire blast area, and check for misfires before allowing worker to return to excavate the rock.

Remove or stabilize all cut face rock that is loose, hanging, or potentially dangerous. Leave minor irregularities or surface variations in place if they do not create a hazard. Drill the next lift only after the cleanup work and stabilization work is complete.

When blasting operations cause fracturing of the final rock face, repair or stabilize it in an approved manner at no cost to the Department.

Halt blasting operations in areas where any of the following occur:

1) Slopes are unstable;
2) Slopes exceed tolerances or overhangs are created;
3) Backslope damage occurs;
4) Safety of the public is jeopardized;
5) Property or natural features are endangered;
6) Fly rock is generated; or
7) Excessive ground or airblast vibrations occur in an area where damage to buildings, structures, or utilities is possible.
8) The Engineer determines that materials have become unsuitable for blasting

Blasting operations may continue at a reasonable distance from the problem area or in areas where the problems do not exist. Make the necessary modifications to the blasting operations and perform a test blast to demonstrate resolution of the problem.

A) Drill Logs. Maintain a layout drawing designating hole numbers with corresponding drill logs and provide a copy of this information to the blaster prior to loading the hole. Ensure the individual hole logs completed by the driller(s) show their name; date drilled; total depth drilled; and depths and descriptions of significant conditions encountered during drilling that may affect loading such as water, voids, changes in rock type.

B) Presplitting. Conduct presplitting operations in conformance with Subsection 204.03.04 of the Standard Specifications for Road and Bridge Construction.

3.5 Shot Report. Maintain all shot reports on site for review by the Department. Within one day after a blast, complete a shot report according to the record keeping requirements of 805 KAR 4:050. Include all results from airblast and seismograph monitoring.

3.6 Unacceptable Blasting. When unacceptable blasting occurs, the Department will halt all blasting operations. Blasting will not resume until the Department completes its investigation and all concerns are addressed. A blast is unacceptable when it results in fragmentation beyond the final rock face, fly rock, excessive vibration or airblast, overbreak, damage to the final rock face or overhang. Assume the cost for all resulting damages to private and public property and hold the Department harmless.

11D

When an errant blast or fly rock causes damage to or blocks a road or conveyance adjacent to the roadway, remove all debris from the roadway as quickly as practicable and perform any necessary repairs. Additionally, when specified in the Contract, the Department will apply a penalty.

Report all blasting accidents to the Division of Mine Reclamation and Enforcement, Explosives and Blasting Branch at 502-564-2340.

4.0 MEASUREMENT AND PAYMENT. The Department will not measure this work for payment and will consider all items contained in this note to be incidental to either Roadway Excavation or Embankment-in-Place, as applicable. However, if the Engineer directs in writing slope changes, then the Department will pay for the second presplitting operation as Extra Work.

The Department will measure for payment material lying outside the typical section due to seams, broken formations, or earth pockets, including any earth overburden removed with this material, only when the work is performed under authorized adjustments.

The Department will not measure for payment any extra material excavated because of the drill holes being offset outside the designated slope lines.

The Department will not measure for payment any material necessary to be removed due to the inefficient or faulty blasting practices.

June 15, 2012

11G

SPECIAL NOTE FOR ACCEPTANCE OF DENSITY OF LONGITUDINAL JOINTS IN ASPHALT SURFACE PAVEMENTS

This Special Note will apply when indicated on the plans or in the proposal. All applicable portions of the Department's 2012 Standard Specifications for Road and Bridge Construction apply unless specifically modified herein. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

1. DESCRIPTION. This note specifies an increased level of compaction for density acceptance testing required for the longitudinal joint of asphalt surface mixtures compacted under Option A requirements. Due to the inherent difficulty of compacting longitudinal joints, conventional methods of compaction may not be adequate to achieve the desired level of density.

2. MATERIALS AND EQUIPMENT. Reserved.

3. CONSTRUCTION. Reserved.

4. MEASUREMENT. Reserved.

5. PAYMENT.

5.1 Lot Pay Adjustment. Contrary to Subsection 402.05.02, the Department will use the following Lot Pay Adjustment Schedule to assign pay values for Joint Density within each sublot.

JOINT DENSITY	
Pay Value	Test Result (%)
1.05	92.0-96.0
1.00	90.0-91.9 or 96.1-96.5
0.95	89.0-89.9
0.90	88.0-88.9 or 96.6-97.0
0.75	< 88.0 or > 97.0

SPECIAL NOTE FOR BARCODE LABEL ON PERMANENT SIGNS

1.0 DESCRIPTION. Install barcode label on sign as specified in the Contract. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

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

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

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

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

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

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

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

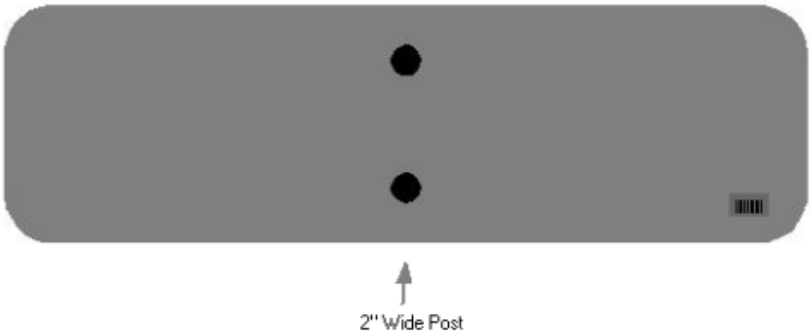
The installation of the permanent sign will be measured in accordance to Section 715.

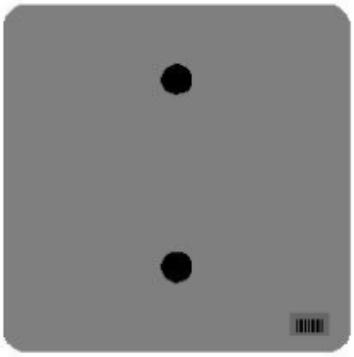
5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
24584EC	Barcode Sign Inventory	Each

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

One Sign Post





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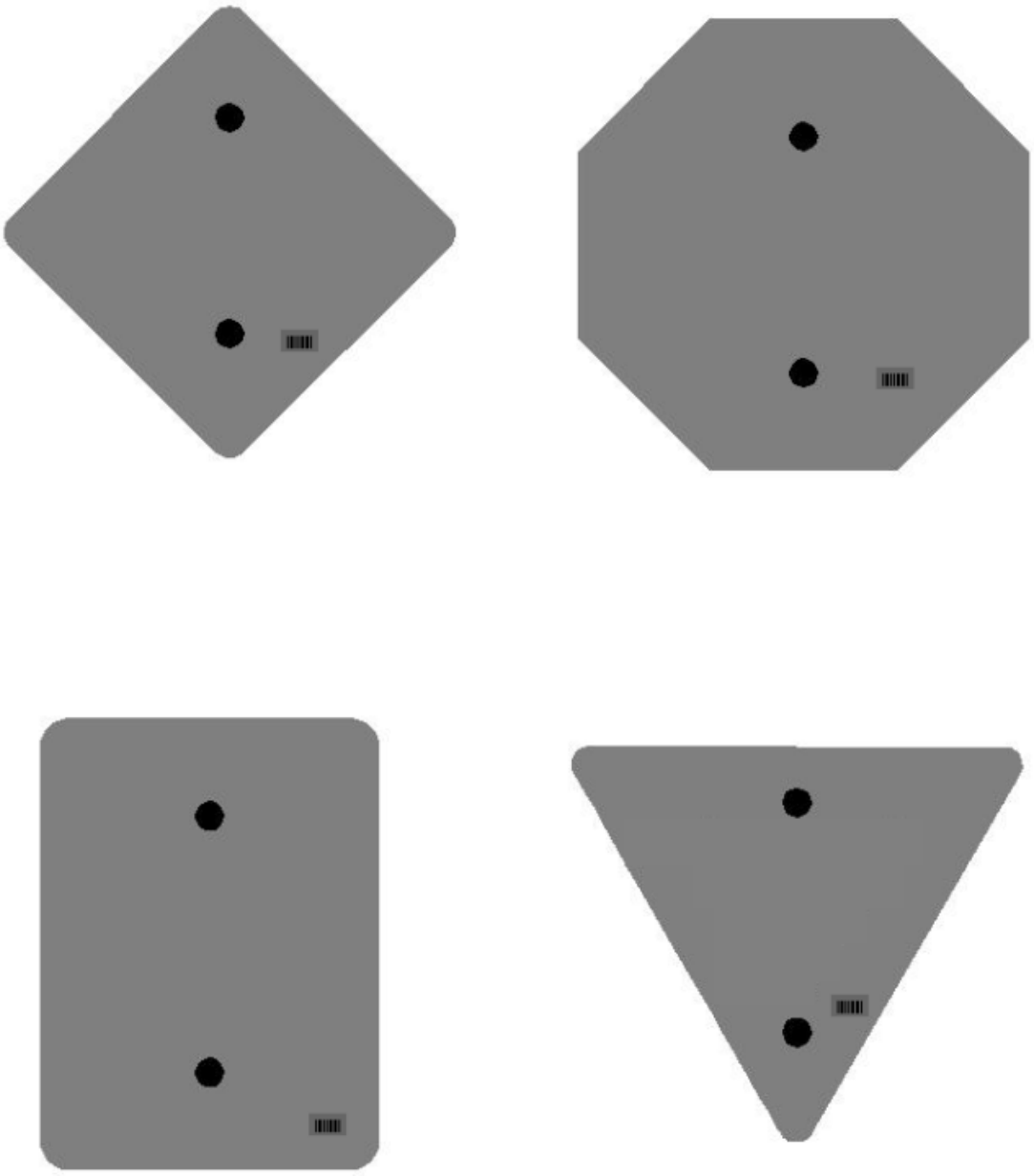

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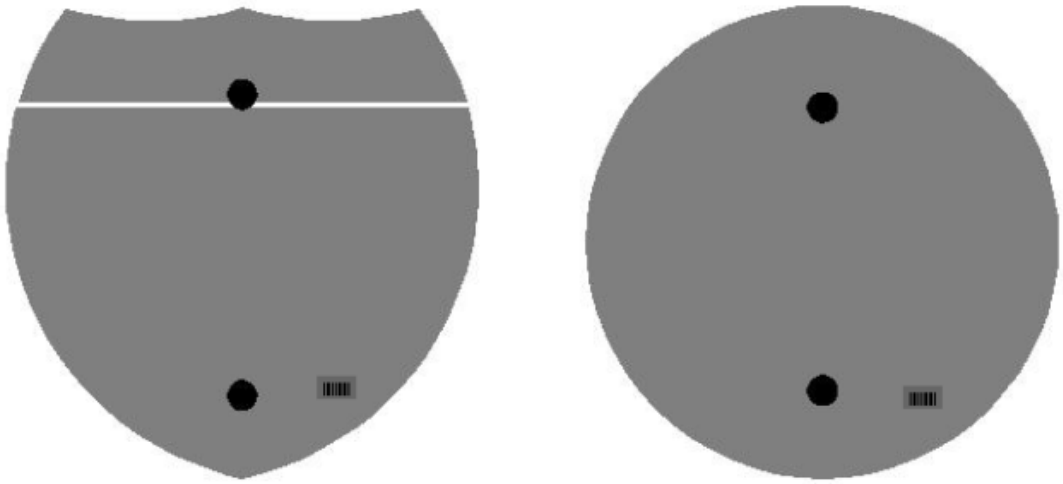
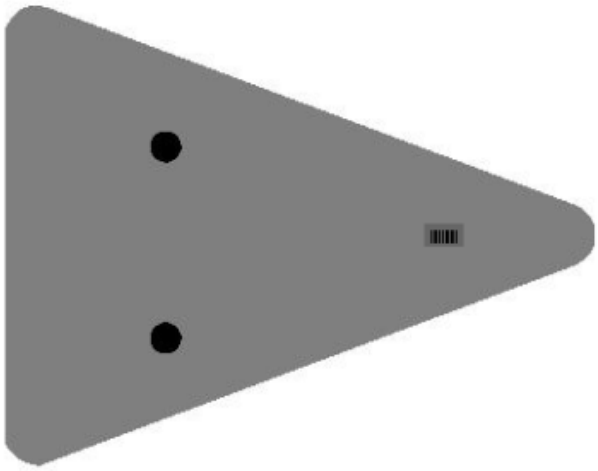
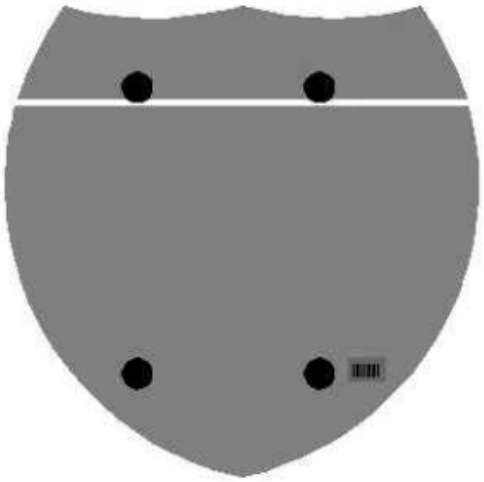
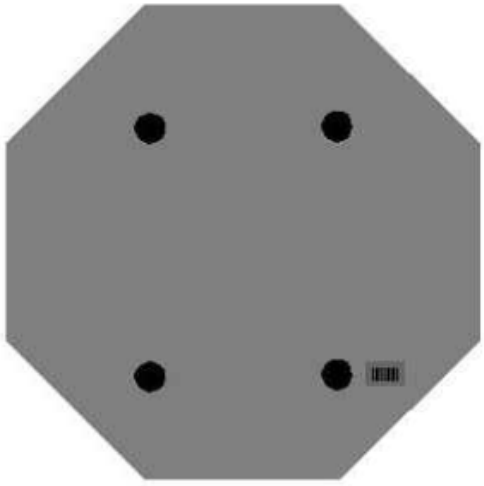




Double Sign Post

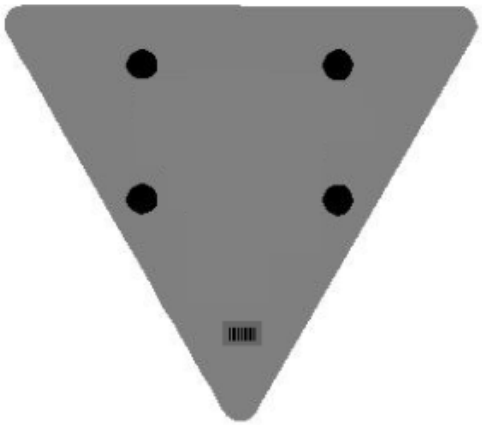


Interstate
Shield



48" Stop

2 Post Signs



SPECIAL PROVISION FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES

This Special Provision will apply when indicated on the plans or in the proposal. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. Construct a soil, granular, or rock embankment with granular or cohesive pile core and place structure granular backfill, as the Plans require. Construct the embankment according to the requirements of this Special Provision, the Plans, Standard Drawing RGX 100 and 105, and the 2012 Standard Specifications.

2.0 MATERIALS.

2.1 Granular Embankment. Conform to Subsection 805.10. When Granular Embankment materials are erodible or unstable according to Subsection 805.03.04, use the Special Construction Methods found in 3.2 of the Special Provision.

2.2 Rock Embankment. Provide durable rock from roadway excavation that consists principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.

2.3 Granular Pile Core. Select a gradation of durable rock to facilitate pile driving that conforms to Subsection 805.11. If granular pile core material hinders pile driving operations, take appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

2.4 Cohesive Pile Core. Conform to Section 206 of the Standard Specifications and use soil with at least 50 percent passing a No. 4 sieve having a minimum Plasticity Index (PI) of 10. In addition, keep the cohesive pile core free of boulders, larger than 6 inches in any dimension, or any other obstructions, which would interfere with drilling operations. If cohesive pile core material interferes with drilling operations, take appropriate means necessary to maintain excavation stability, at no expense to the Department.

2.5 Structure Granular Backfill. Conform to Subsection 805.11

2.6 Geotextile Fabric. Conform to Type I or Type IV in Section 214 and 843 as required in the plans.

3.0 CONSTRUCTION.

3.1 General. Construct roadway embankments at end bents according to Section 206 and in accordance with the Special Provision, the Plans, and Standard Drawings for the full embankment section. In some instances, granular or rock embankment will be required for embankment construction for stability purposes, but this special provision does not prevent the use of soil when appropriate. Refer to the plans for specific details regarding material requirements for embankment construction.

Place and compact granular or cohesive pile core, soil, granular or rock embankment, and structure granular backfill according to the applicable density requirements for the project. When constructing granular or rock embankments, use granular pile core for driven pile foundations and use cohesive pile core for pre-drilled pile or drilled shaft foundations. Place geotextile fabric, Type IV between cohesive pile core and structure

granular backfill and granular or rock embankment.

When granular or rock embankment is required for embankment construction, conform to the general requirements of Subsection 206.03.02 B). In addition, place the material in no greater than 2-foot lifts and compact with a vibrating smooth wheel roller capable of producing a minimum centrifugal force of 15 tons. Apply these requirements to the full width of the embankment for a distance of half the embankment height or 50 feet, whichever is greater, as shown on Standard Drawing RGX-105.

When using granular pile core, install 8-inch perforated underdrain pipe at or near the elevation of the original ground in the approximate locations depicted on the standard drawing, and as the Engineer directs, to ensure positive drainage of the embankment. Wrap the perforated pipe with a fabric of a type recommended by the pipe manufacturer.

After constructing the embankment, excavate for the end bent cap, drive piling or install shafts, place the mortar bed, construct the end bent, and complete the embankment to finish grade according to the construction sequence shown on the Plans or Standard Drawings and as specified hereinafter.

Certain projects may require widening of existing embankments and the removal of substructures. Construct embankment according to the plans. Substructure removal shall be completed according to the plans and Section 203. Excavation may be required at the existing embankment in order to place the structure granular backfill as shown in the Standard Drawings.

After piles are driven or shafts installed (see design drawings), slope the bottom of the excavation towards the ends of the trench as noted on the plans for drainage. Using a separate pour, place concrete mortar, or any class concrete, to provide a base for forming and placing the cap. Place side forms for the end bent after the mortar has set sufficiently to support workmen and forms without being disturbed.

Install 4-inch perforated pipe in accordance with the plans and Standard Drawings. In the event slope protection extends above the elevation of the perforated pipe, extend the pipe through the slope protection.

After placing the end bent cap and removing adjacent forms, fill the excavation with structure granular backfill material to the level of the berm prior to placing beams for the bridge. For soil embankments, place Type IV geotextile fabric between embankment material and structure granular backfill. After completing the end bent backwall, or after completing the span end wall, place the structure granular backfill to subgrade elevation. If the original excavation is enlarged, fill the entire volume with compacted structure granular backfill at no expense to the Department. Do not place backfill before removing adjacent form work. Place structure granular backfill material in trench ditches at the ends of the excavation. Place Geotextile Fabric, Type IV over the surface of structure granular backfill prior to placing aggregate base course.

Tamp the backfill with hand tampers, pneumatic tampers, or other means the Engineer approves. Thoroughly compact the backfill under the overhanging portions of the structure to ensure that the backfill is in intimate contact with the sides of the structure.

Do not apply seeding, sodding, or other vegetation to the exposed granular embankment.

3.2 Special Construction Methods. Erodible or unstable materials may erode even when protected by riprap or channel lining; use the special construction method described below when using these materials.

Use fine aggregates or friable sandstone granular embankment at “dry land” structures only. Do not use them at stream crossings or locations subject to flood waters.

For erodible or unstable materials having 50 percent or more passing the No. 4 sieve, protect with geotextile fabric. Extend the fabric from the original ground to the top of slope over the entire area of the embankment slopes on each side of, and in front of, the

end bent. Cover the fabric with at least 12 inches of non-erodible material.

For erodible or unstable materials having less than 50 percent passing a No. 4 sieve, cover with at least 12 inches of non-erodible material.

Where erodible or unstable granular embankment will be protected by riprap or channel lining, place geotextile fabric between the embankment and the specified slope protection.

4.0 MEASUREMENT.

4.1 Granular Embankment. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment any Granular Embankment that is not called for in the plans.

The Department will not measure for payment any special construction caused by using erodible or unstable materials and will consider it incidental to the Granular Embankment regardless of whether the erodible or unstable material was specified or permitted.

4.2 Rock Embankment. The Department will not measure for payment any rock embankment and will consider it incidental to roadway excavation or embankment in place, as applicable. Rock embankments will be constructed using granular embankment on projects where there is no available rock present within the excavation limits of the project.

4.3 Granular Pile Core. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment furnishing and placing 8-inch perforated underdrain pipe and will consider it incidental to the Granular pile core. The Department will not measure for payment any granular pile core that is necessary because the contractor elects to use granular or rock embankment when it is not specified in the plans.

4.4 Cohesive Pile Core. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204.

4.5 Structure Granular Backfill. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure any additional material required for backfill outside the limits shown on the Plans and Standard Drawings for payment and will consider it incidental to the work.

The Department will not measure structure excavation at the end bent or an existing embankment for payment and will consider it incidental to Structure Granular Backfill.

The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Structure Granular Backfill.

4.6 Geotextile Fabric. The Department will measure the quantities as specified in Section 214. The Department will not measure the quantity of fabric used for separating granular or rock embankment and cohesive pile core and will consider it incidental to cohesive pile core.

4.7 End Bent. The Department will measure the quantities according to the

Contract. The Department will not measure furnishing and placing the 2-inch mortar or concrete bed for payment and will consider it incidental to the end bent construction.

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

Code	Pay Item	Pay Unit
02223	Granular Embankment	Cubic Yards
20209EP69	Granular Pile Core	Cubic Yards
20210EP69	Cohesive Pile Core	Cubic Yards
02231	Structure Granular Backfill	Cubic Yards
02596, 02599	Geotextile Fabric, Type	See Section 214

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

June 15, 2012

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

LABOR AND WAGE REQUIREMENTS
APPLICABLE TO OTHER THAN FEDERAL-AID SYSTEM PROJECTS

I. APPLICATION

1. These contract provisions shall apply to all work performed on the contract by the contractor with his own organization and with the assistance of workmen under his immediate superintendence and to all work performed on the contract by piecework, station work or by subcontract. The contractor's organization shall be construed to include only workmen employed and paid directly by the contractor and equipment owned or rented by him, with or without operators.

2. The contractor shall insert in each of his subcontracts all of the stipulations contained in these Required Provisions and such other stipulations as may be required.

3. A breach of any of the stipulations contained in these Required Provisions may be grounds for termination of the contract.

II. NONDISCRIMINATION OF EMPLOYEES

AN ACT OF THE KENTUCKY
GENERAL ASSEMBLY TO PREVENT
DISCRIMINATION IN EMPLOYMENT
KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy). The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, disability or age (between forty and seventy), except that such notice or advertisement may indicate a preference, limitation, or specification based on religion, or national origin when religion, or national origin is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age (between forty and seventy), in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

III. PAYMENT OF PREDETERMINED MINIMUM WAGES

1. These special provisions are supplemented elsewhere in the contract by special provisions which set forth certain predetermined minimum wage rates. The contractor shall pay not less than those rates.

2. The minimum wage determination schedule shall be posted by the contractor, in a manner prescribed by the Department of Highways, at the site of the work in prominent places where it can be easily seen by the workers.

IV. STATEMENTS AND PAYROLLS

1. All contractors and subcontractors affected by the terms of KRS 337.505 to 337.550 shall keep full and accurate payroll records covering all disbursements of wages to their employees to whom they are required to pay not less than the prevailing rate of wages. Payrolls and basic records relating thereto will be maintained during the course of the work and preserved for a period of one (1) year from the date of completion of this contract.

2. The payroll records shall contain the name, address and social security number of each employee, his correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid.

3. The contractor shall make his daily records available at the project site for inspection by the State Department of Highways contracting office or his authorized representative.

Periodic investigations shall be conducted as required to assure compliance with the labor provisions of the contract. Interrogation of employees and officials of the contractor shall be permitted during working hours.

Aggrieved workers, Highway Managers, Assistant District Engineers, Resident Engineers and Project Engineers shall report all complaints and violations to the Division of Contract Procurement.

The contractor shall be notified in writing of apparent violations. The contractor may correct the reported violations and notify the Department of Highways of the action taken or may request an informal hearing. The request for hearing shall be in writing within ten (10) days after receipt of the notice of the reported violation. The contractor may submit

records and information which will aid in determining the true facts relating to the reported violations.

Any person or organization aggrieved by the action taken or the findings established as a result of an informal hearing by the Division of Contract Procurement may request a formal hearing.

4. The wages of labor shall be paid in legal tender of the United States, except that this condition will be considered satisfied if payment is made by a negotiable check, on a solvent bank, which may be cashed readily by the employee in the local community for the full amount, without discount or collection charges of any kind. Where checks are used for payments, the contractor shall make all necessary arrangements for them to be cashed and shall give information regarding such arrangements.

5. No fee of any kind shall be asked or accepted by the contractor or any of his agents from any person as a condition of employment on the project.

6. No laborers shall be charged for any tools used in performing their respective duties except for reasonably avoidable loss or damage thereto.

7. Every employee on the work covered by this contract shall be permitted to lodge, board, and trade where and with whom he elects and neither the contractor nor his agents, nor his employees shall directly or indirectly require as a condition of employment that an employee shall lodge, board or trade at a particular place or with a particular person.

8. Every employee on the project covered by this contract shall be an employee of either the prime contractor or an approved subcontractor.

9. No charge shall be made for any transportation furnished by the contractor or his agents to any person employed on the work.

10. No individual shall be employed as a laborer or mechanic on this contract except on a wage basis, but this shall not be construed to prohibit the rental of teams, trucks or other equipment from individuals.

No Covered employee may be employed on the work except in accordance with the classification set forth in the schedule mentioned above; provided, however, that in the event additional classifications are required, application shall be made by the contractor to the Department of Highways and (1) the Department shall request appropriate classifications and rates from the proper agency, or (2) if there is urgent need for additional classification to avoid undue delay in the work, the contractor may employ such workmen at rates deemed comparable to rates established for similar classifications provided he has made written application through the Department of Highways, addressed to the proper agency, for the supplemental rates. The contractor shall retroactively adjust, upon receipt of the supplemental rates schedule, the wages of any employee paid less than the established rate and may adjust the wages of any employee overpaid.

11. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any work-week in which he is employed on such work, to work in excess of eight hours in any calendar day or in excess of forty hours in such work-week unless such laborer or mechanic receives compensation at a rate not less than one and one half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such work-week. 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. This agreement shall be in writing and shall be executed prior to the employee working in excess of eight (8) hours, but not more than ten (10) hours, in any one (1) calendar day.

12. Payments to the contractor may be suspended or withheld due to failure of the contractor to pay any laborer or mechanic employed or working on the site of the work, all or part of the wages required under the terms of the contract. The Department may suspend or withhold payments only after the contractor has been given written notice of the alleged violation and the contractor has failed to comply with the wage determination of the Department of Highways.

13. Contractors and subcontractors shall comply with the sections of Kentucky Revised Statutes, Chapter 337 relating to contracts for Public Works.

Revised 2-16-95

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

> KRS 11A.040 (6) provides:
>
> No present or former public servant shall, within six (6) months of following termination of his office or employment, accept employment, compensation or other economic benefit from any person or business that contracts or does business with the state in matters in which he was directly involved during his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved in state government. This subsection shall not prohibit the performance of ministerial functions, including, but not limited to, filing tax returns, filing applications for permits or licenses, or filing incorporation papers.
>
> KRS 11A.040 (8) states:
>
> A former public servant shall not represent a person in a matter before a state agency in which the former public servant was directly involved, for a period of one (1) year after the latter of:
> a) The date of leaving office or termination of employment; or
> b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, Room 136, Capitol Building, 700 Capitol Avenue, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Kentucky Equal Employment Opportunity Act of 1978

The requirements of the Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) shall apply to this Contract. The apparent low Bidder will be required to submit EEO forms to the Division of Construction Procurement, which will then forward to the Finance and Administration Cabinet for review and approval. No award will become effective until all forms are submitted and EEO/CC has certified compliance. The required EEO forms are as follows:

- EEO-1: Employer Information Report
- Affidavit of Intent to Comply
- Employee Data Sheet
- Subcontractor Report

These forms are available on the Finance and Administration's web page under ***Vendor Information, Standard Attachments and General Terms*** at the following address: **https://www.eProcurement.ky.gov**.

Bidders currently certified as being in compliance by the Finance and Administration Cabinet may submit a copy of their approval letter in lieu of the referenced EEO forms.

For questions or assistance please contact the Finance and Administration Cabinet by email at **finance.contractcompliance@ky.gov** or by phone at 502-564-2874.

General Decision Number: KY130102 08/09/2013 KY102

Superseded General Decision Number: KY20120127

State: Kentucky

Construction Type: Highway

Counties: Allen, Ballard, Butler, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Edmonson, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Logan, Lyon, Marshall, McCracken, McLean, Muhlenberg, Ohio, Simpson, Todd, Trigg, Union, Warren and Webster 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).

Modification Number	Publication Date
0	01/04/2013
1	02/01/2013
2	04/05/2013
3	04/26/2013
4	05/03/2013
5	05/31/2013
6	06/07/2013
7	06/14/2013
8	06/21/2013
9	06/28/2013
10	07/05/2013
11	07/26/2013
12	08/09/2013

BRIN0004-002 06/01/2011

BALLARD, BUTLER, CALDWELL, CARLISLE, CRITTENDEN, DAVIESS, EDMONSON, FULTON, GRAVES, HANCOCK, HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN, MCLEAN, MUHLENBERG, OHIO, UNION, and WEBSTER COUNTIES

	Rates	Fringes
BRICKLAYER		
Ballard, Caldwell, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, Marshall, and McCracken Counties	$ 24.11	10.30
Butler, Edmonson, Hopkins, Muhlenberg, and Ohio Counties	$ 24.61	10.22
Daviess, Hancock, Henderson, McLean, Union,		

and Webster Counties.....$ 28.47 12.78

BRTN0004-005 05/01/2009

ALLEN, CALLOWAY, CHRISTIAN, LOGAN, SIMPSON, TODD, TRIGG, and WARREN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 24.52	1.83

CARP0357-002 04/01/2013

	Rates	Fringes
CARPENTER	$ 26.90	14.42
Diver	$ 40.73	14.42
PILEDRIVERMAN	$ 27.15	14.42

ELEC0369-006 05/29/2013

BUTLER, EDMONSON, LOGAN, TODD & WARREN COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 29.48	14.37

ELEC0429-001 02/01/2010

ALLEN & SIMPSON COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 21.85	10.35

ELEC0816-002 06/01/2013

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON (Except a 5 mile radius of City Hall in Fulton), GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 30.40	25.5%+5.60

Cable spicers receive $.25 per hour additional.

ELEC1701-003 06/01/2013

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO, UNION & WEBSTER COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 30.03	13.72

Cable spicers receive $.25 per hour additional.

ELEC1925-002 06/01/2012

FULTON COUNTY (Up to a 5 mile radius of City Hall in Fulton):

	Rates	Fringes
CABLE SPLICER	$ 25.00	10.27
ELECTRICIAN	$ 25.00	10.43

ENGI0181-017 07/01/2013

	Rates	Fringes
Operating Engineer:		
GROUP 1	$ 28.00	13.90
GROUP 2	$ 25.45	13.90
GROUP 3	$ 25.85	13.90
GROUP 4	$ 25.17	13.90

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Cherry Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loaders; Grade-All; Gurries; Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Conrete Pump; Skid Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points;& Whirley Oiler

GROUP 3 -All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling equals or exceeds 150 ft. - $1.00 above Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10% ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

IRON0070-005 06/01/2013

BUTLER COUNTY (Eastern eighth, including the Townships of Decker, Lee & Tilford);
EDMONSON COUNTY (Northern three-fourths, including the Townships of Asphalt, Bee Spring, Brownsville, Grassland, Huff, Kyrock, Lindseyville, Mammoth Cave, Ollie, Prosperity, Rhoda, Sunfish & Sweden)

	Rates	Fringes
Ironworkers: Structural; Ornamental; Reinforcing; Precast Concrete Erectors	$ 26.47	19.30

IRON0103-004 04/01/2013

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, OHIO, UNION & WEBSTER COUNTIES
BUTLER COUNTY (Townships of Aberdeen, Bancock, Casey, Dexterville, Dunbar, Elfie, Gilstrap, Huntsville, Logansport, Monford, Morgantown, Provo, Rochester, South Hill & Welchs Creek);
CALDWELL COUNTY (Northeastern third, including the Township of Creswell);
CHRISTIAN COUNTY (Northern third, including the Townships of Apex, Crofton, Kelly, Mannington & Wynns);
CRITTENDEN COUNTY (Northeastern half, including the Townships of Grove, Mattoon, Repton, Shady Grove & Tribune);
MUHLENBERG COUNTY (Townships of Bavier, Beech Creek Junction, Benton, Brennen, Browder, Central City, Cleaton, Depoy, Drakesboro, Eunis, Graham, Hillside, Luzerne, Lynn City, Martwick, McNary, Millport, Moorman, Nelson, Paradise, Powderly, South Carrollton, Tarina & Weir)

	Rates	Fringes
Ironworkers:	$ 27.82	16.555

IRON0492-003 05/01/2012

ALLEN, LOGAN, SIMPSON, TODD & WARREN COUNTIES
BUTLER COUNTY (Southern third, including the Townships of Boston, Berrys Lick, Dimple, Jetson, Quality, Sharer, Sugar Grove & Woodbury);
CHRISTIAN COUNTY (Eastern two-thirds, including the Townships of Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
EDMONSON COUNTY (Southern fourth, including the Townships of Chalybeate & Rocky Hill);
MUHLENBERG COUNTY (Southern eighth, including the Townships of Dunnior, Penrod & Rosewood)

	Rates	Fringes
Ironworkers:	$ 23.00	10.70

IRON0782-006 05/01/2013

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES
CALDWELL COUNTY (Southwestern two-thirds, including the Townships of Cedar Bluff, Cider, Claxton, Cobb, Crowtown, Dulaney, Farmersville, Fredonia, McGowan, Otter Pond & Princeton);
CHRISTIAN COUNTY (Western third, Excluding the Townships of Apex, Crofton, Kelly, Mannington, Wynns, Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
CRITTENDEN COUNTY (Southwestern half, including the Townships of Crayne, Dycusburg, Frances, Marion, Mexico, Midway, Sheridan & Told)

	Rates	Fringes
Ironworkers:		
Projects with a total contract cost of $20,000,000.00 or above	$ 26.46	19.91
All Other Work	$ 24.95	18.65

LABO0189-005 07/01/2013

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL & MCCRACKEN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 20.95	12.01
GROUP 2	$ 21.20	12.01
GROUP 3	$ 21.25	12.01

GROUP 4.....$ 21.85 12.01

LABORER 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; Blaster; 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 Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0189-006 07/01/2013

ALLEN, BUTLER, CALDWELL, CHRISTIAN, DAVIESS, EDMONSON, HANCOCK, HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, SIMPSON, TODD, TRIGG & WARREN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 21.96	11.00
GROUP 2	$ 22.21	11.00
GROUP 3	$ 22.26	11.00
GROUP 4	$ 22.86	11.00

LABORER 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; Blaster; 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 Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0561-001 07/01/2013

CRITTENDEN, HENDERSON, UNION & WEBSTER COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 21.11	12.25
GROUP 2	$ 21.36	12.25
GROUP 3	$ 21.41	12.25
GROUP 4	$ 22.01	12.25

LABORER 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; Blaster; 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 Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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PAIN0032-002 05/01/2013

BALLARD COUNTY

	Rates	Fringes
Painters:		
Bridges	$ 30.56	15.18
All Other Work	$ 28.26	15.18

Spray, Blast, Steam, High & Hazardous (Including Lead Abatement) and All Epoxy - $1.00 Premium

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PAIN0118-003 05/01/2010

EDMONSON COUNTY:

	Rates	Fringes
Painters:		
Brush & Roller	$ 18.50	10.30
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning	$ 19.50	10.30

PAIN0156-006 04/01/2010

DAVIESS, HANCOCK, HENDERSON, MCLEAN, OHIO, UNION & WEBSTER COUNTIES

	Rates	Fringes
Painters:		
BRIDGES		
GROUP 1	$ 25.60	10.05
GROUP 2	$ 25.85	10.05
GROUP 3	$ 26.60	10.05
GROUP 4	$ 27.60	10.05
ALL OTHER WORK:		
GROUP 1	$ 25.60	11.30
GROUP 2	$ 25.85	11.30
GROUP 3	$ 26.60	11.30
GROUP 4	$ 27.60	11.30

PAINTER CLASSIFICATIONS

GROUP 1 - Brush & Roller

GROUP 2 - Plasterers

GROUP 3 - Spray; Sandblast; Power Tools; Waterblast; Steamcleaning; Brush & Roller of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

GROUP 4 - Spray of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

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PAIN0456-003 07/01/2011

ALLEN, BUTLER, LOGAN, MUHLENBERG, SIMPSON, TODD & WARREN COUNTIES:

	Rates	Fringes
Painters:		
BRIDGES		
Brush & Roller	$ 22.55	9.65
Spray; Sandblast; Power Tools; Waterblast & Steam Cleaning	$ 23.55	9.65
ALL OTHER WORK		
Brush & Roller	$ 17.55	9.65
Spray; Sandblast; Power Tools; Waterblast & Steam Cleaning	$ 18.55	9.65

ALL OTHER WORK - HIGH TIME PAY
Over 35 feet (up to 100 feet) - $1.00 above base wage
100 feet and over - $2.00 above base wage

DURING SPRAY PAINTING AND SANDBLASTING OPERATIONS, POT TENDERS SHALL RECEIVE THE SAME WAGE RATES AS THE SPRAY PAINTER OR NOZZLE OPERATOR

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* PAIN0500-002 07/01/2013

CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
Painters:		
Bridges	$ 25.80	11.95
All Other Work	$ 19.55	11.95

Waterblasting units with 3500 PSI and above - $.50 premium
Spraypainting and all abrasive blasting - $1.00 premium
Work 40 ft. and above ground level - $1.00 premium

PLUM0184-002 07/01/2013

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN and TRIGG COUNTIES

	Rates	Fringes
Plumber; Steamfitter	$ 33.11	14.83

PLUM0502-004 08/01/2012

ALLEN, BUTLER, EDMONSON, SIMPSON & WARREN

	Rates	Fringes
Plumber; Steamfitter	$ 32.00	16.17

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* PLUM0633-002 08/01/2013

DAVIESS, HANCOCK, HENDERSON, HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, TODD, UNION & WEBSTER COUNTIES:

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 29.87	14.25

TEAM0089-003 03/31/2013

ALLEN, BUTLER, EDMONSON, LOGAN, SIMPSON & WARREN COUNTIES

	Rates	Fringes
Truck drivers:		
Zone 1:		
Group 1	$ 19.38	16.85
Group 2	$ 19.56	16.85
Group 3	$ 19.64	16.85
Group 4	$ 19.66	16.85

GROUP 1 - Greaser; Tire Changer

GROUP 2 - Truck Mechanic; Single Axle Dump; Flat Bed; All Terrain Vehicles when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors

GROUP 3 - Mixer All Types

GROUP 4 - Winch and A-Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker; Euclid and Other Heavy Earth Moving Equipment; Low Boy; Articulator Cat; Five Axle Vehicle

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TEAM0215-003 03/31/2013

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO & WEBSTER COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 20.93	16.85
Group 2	$ 21.16	16.85
Group 3	$ 21.23	16.85
Group 4	$ 21.24	16.85

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors; Mixer All Types

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; 5 Axle Vehicle; Winch and A- Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker

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TEAM0236-001 03/31/2013

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN,TODD & TRIGG COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 19.38	16.85
Group 2	$ 19.56	16.85
Group 3	$ 19.56	16.85

Group 4.....$ 19.66 16.85
Group 5.....$ 19.64 16.85

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Drivers of Distributors

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; Five Axle Vehicle; Winch and A-Frame when used in transporting materials; Ross Carrier

GROUP 5: Mixer All Types

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

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

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

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any

changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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

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

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

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END OF GENERAL DECISION

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

These rates are listed pursuant to the Kentucky Determination No. CR-13-I-HWY dated April 15, 2013.

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.

Ryan Griffith, Acting Director
Division of Construction Procurement
Frankfort, Kentucky 40622

PART IV

INSURANCE

INSURANCE

The Contractor shall procure and maintain the following insurance in addition to the insurance required by law:

1) Commercial General Liability-Occurrence form – not less than $2,000,000 General aggregate, $2,000,000 Products & Completed Aggregate, $1,000,000 Personal & Advertising, $1,000,000 each occurrence.

2) Automobile Liability- $1,000,000 per accident

3) Employers Liability:

   a) $100,000 Each Accident Bodily Injury
   b) $500,000 Policy limit Bodily Injury by Disease
   c) $100,000 Each Employee Bodily Injury by Disease

4) The insurance required above must be evidenced by a Certificate of Insurance and this Certificate of Insurance must contain one of the following statements:
   a) "policy contains no deductible clauses."
   b) "policy contains _____ (amount) deductible property damage clause but company will pay claim and collect the deductible from the insured."

5) KENTUCKY WORKMEN'S COMPENSATION INSURANCE. The contractor shall furnish evidence of coverage of all his employees or give evidence of self-insurance by submitting a copy of a certificate issued by the Workmen's Compensation Board.

The cost of insurance is incidental to all contract items. All subcontractors must meet the same minimum insurance requirements.

PART V

BID ITEMS

131209

PROPOSAL BID ITEMS

Report Date 9/3/13

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0010	00001		DGA BASE	62,931.00	TON		$	
0020	00018		DRAINAGE BLANKET-TYPE II-ASPH	18,861.00	TON		$	
0030	00100		ASPHALT SEAL AGGREGATE	360.00	TON		$	
0040	00103		ASPHALT SEAL COAT	44.00	TON		$	
0050	00190		LEVELING & WEDGING PG64-22	570.00	TON		$	
0060	00212		CL2 ASPH BASE 1.00D PG64-22	6,945.00	TON		$	
0070	00214		CL3 ASPH BASE 1.00D PG64-22	47,130.00	TON		$	
0080	00309		CL2 ASPH SURF 0.50D PG64-22	3,155.00	TON		$	
0090	00324		CL3 ASPH SURF 0.50B PG64-22	9,160.00	TON		$	
0100	02081		JPC PAVEMENT-8 IN SHLD	84.00	SQYD		$	
0110	02223		GRANULAR EMBANKMENT	350.00	CUYD		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0120	00078		CRUSHED AGGREGATE SIZE NO 2	53.00	TON		$	
0130	01310		REMOVE PIPE	42.00	LF		$	
0140	01791		ADJUST MANHOLE FRAME TO GRADE	2.00	EACH		$	
0150	01845		ISLAND INTEGRAL CURB	50.00	LF		$	
0160	01986		DELINEATOR FOR BARRIER WALL-B/Y	6.00	EACH		$	
0170	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	48.00	EACH		$	
0180	02014		BARRICADE-TYPE III	50.00	EACH		$	
0190	02091		REMOVE PAVEMENT	2,380.00	SQYD		$	
0200	02200		ROADWAY EXCAVATION	160,945.00	CUYD		$	
0210	02242		WATER	15.00	MGAL		$	
0220	02262		FENCE-WOVEN WIRE TYPE 1	968.00	LF		$	
0230	02265		REMOVE FENCE	966.00	LF		$	
0240	02351		GUARDRAIL-STEEL W BEAM-S FACE	4,737.50	LF		$	
0250	02360		GUARDRAIL TERMINAL SECTION NO 1	9.00	EACH		$	
0260	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	4.00	EACH		$	
0270	02367		GUARDRAIL END TREATMENT TYPE 1	8.00	EACH		$	
0280	02381		REMOVE GUARDRAIL	6,334.00	LF		$	
0290	02391		GUARDRAIL END TREATMENT TYPE 4A	6.00	EACH		$	
0300	02404		SEPTIC TANK TREATMENT	2.00	EACH		$	
0310	02429		RIGHT-OF-WAY MONUMENT TYPE 1	206.00	EACH		$	
0320	02432		WITNESS POST	3.00	EACH		$	
0330	02483		CHANNEL LINING CLASS II	9,194.00	TON		$	
0340	02484		CHANNEL LINING CLASS III	2,088.00	TON		$	
0350	02545		CLEARING AND GRUBBINGAPPROXIMATELY 93 ACRES.	1.00	LS		$	
0360	02585		EDGE KEY	410.00	LF		$	
0370	02598		FABRIC-GEOTEXTILE TYPE III	520.00	SQYD		$	
0380	02599		FABRIC-GEOTEXTILE TYPE IV	5,500.00	SQYD		$	
0390	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
0400	02653		LANE CLOSURE	2.00	EACH		$	

PROPOSAL BID ITEMS

131209

Report Date 9/3/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0410	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0420	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		$	
0430	02677		ASPHALT PAVE MILLING & TEXTURING	2,780.00	TON		$	
0440	02690		SAFELOADING	24.00	CUYD		$	
0450	02696		SHOULDER RUMBLE STRIPS-SAWED	31,000.00	LF		$	
0460	02701		TEMP SILT FENCE	270.00	LF		$	
0470	02704		SILT TRAP TYPE B	27.00	EACH		$	
0480	02705		SILT TRAP TYPE C	168.00	EACH		$	
0490	02707		CLEAN SILT TRAP TYPE B	27.00	EACH		$	
0500	02708		CLEAN SILT TRAP TYPE C	168.00	EACH		$	
0510	02709		CLEAN TEMP SILT FENCE	270.00	LF		$	
0520	02726		STAKING	1.00	LS		$	
0530	02731		REMOVE STRUCTURE	1.00	LS		$	
0540	02775		ARROW PANEL	2.00	EACH		$	
0550	03171		CONCRETE BARRIER WALL TYPE 9T	520.00	LF		$	
0560	04953		TEMP RELOCATION OF SIGNAL HEAD	4.00	EACH		$	
0570	05950		EROSION CONTROL BLANKET	34,688.00	SQYD		$	
0580	05952		TEMP MULCH	642.00	SQYD		$	
0590	05953		TEMP SEEDING AND PROTECTION	642.00	SQYD		$	
0600	05966		TOPDRESSING FERTILIZER	3.00	TON		$	
0610	05985		SEEDING AND PROTECTION	130,286.00	SQYD		$	
0620	05989		SPECIAL SEEDING CROWN VETCH	17,947.00	SQYD		$	
0630	05990		SODDING	9,000.00	SQYD		$	
0640	06510		PAVE STRIPING-TEMP PAINT-4 IN	85,572.00	LF		$	
0650	06514		PAVE STRIPING-PERM PAINT-4 INYELLOW	39,532.00	LF		$	
0660	06514		PAVE STRIPING-PERM PAINT-4 INWHITE	48,963.00	LF		$	
0670	06517		PAVE STRIPING-PERM PAINT-12 IN	502.00	LF		$	
0680	06550		PAVE STRIPING-TEMP REM TAPE-W	3,925.00	LF		$	
0690	06551		PAVE STRIPING-TEMP REM TAPE-Y	6,860.00	LF		$	
0700	06568		PAVE MARKING-THERMO STOP BAR-24IN	329.00	LF		$	
0710	06569		PAVE MARKING-THERMO CROSS-HATCH	16,708.00	SQFT		$	
0720	06570		PAVE MARKING-PAINT CROSS-HATCH	2,071.00	SQFT		$	
0730	06574		PAVE MARKING-THERMO CURV ARROW	30.00	EACH		$	
0740	06575		PAVE MARKING-THERMO COMB ARROW	1.00	EACH		$	
0750	06576		PAVE MARKING-THERMO ONLY	4.00	EACH		$	
0760	06586		PAVEMENT MARKER TY IVA-MY TEMP	18.00	EACH		$	
0770	06588		PAVEMENT MARKER TY IVA-BY TEMP	277.00	EACH		$	
0780	06589		PAVEMENT MARKER TYPE V-MW	353.00	EACH		$	
0790	06591		PAVEMENT MARKER TYPE V-BY	655.00	EACH		$	
0800	08100		CONCRETE-CLASS A	95.00	CUYD		$	
0810	08150		STEEL REINFORCEMENT	3,678.00	LB		$	
0820	08903		CRASH CUSHION TY VI CLASS BT TL3	2.00	EACH		$	
0830	10020NS		FUEL ADJUSTMENT	173,472.00	DOLL	$1.00	$	$173,472.00
0840	10030NS		ASPHALT ADJUSTMENT	251,856.00	DOLL	$1.00	$	$251,856.00
0850	23131ER701		PIPELINE VIDEO INSPECTION	3,678.00	LF		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT

PROPOSAL BID ITEMS

131209

Report Date 9/3/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0860	00440		ENTRANCE PIPE-15 IN	2,077.00	LF		$	
0870	00441		ENTRANCE PIPE-18 IN	859.00	LF		$	
0880	00445		ENTRANCE PIPE-30 IN15" CMP 16 GAGE	59.00	LF		$	
0890	00461		CULVERT PIPE-15 IN	64.00	LF		$	
0900	00462		CULVERT PIPE-18 IN	1,444.00	LF		$	
0910	00464		CULVERT PIPE-24 IN	464.00	LF		$	
0920	00468		CULVERT PIPE-36 IN	208.00	LF		$	
0930	01000		PERFORATED PIPE-4 IN	13,338.00	LF		$	
0940	01001		PERFORATED PIPE-6 IN	13,850.00	LF		$	
0950	01002		PERFORATED PIPE-8 IN	74.00	LF		$	
0960	01010		NON-PERFORATED PIPE-4 IN	977.00	LF		$	
0970	01011		NON-PERFORATED PIPE-6 IN	860.00	LF		$	
0980	01012		NON-PERFORATED PIPE-8 IN	10.00	LF		$	
0990	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS		$	
1000	01020		PERF PIPE HEADWALL TY 1-4 IN	2.00	EACH		$	
1010	01025		PERF PIPE HEADWALL TY 2-6 IN	9.00	EACH		$	
1020	01028		PERF PIPE HEADWALL TY 3-4 IN	23.00	EACH		$	
1030	01029		PERF PIPE HEADWALL TY 3-6 IN	1.00	EACH		$	
1040	01030		PERF PIPE HEADWALL TY 3-8 IN	5.00	EACH		$	
1050	01032		PERF PIPE HEADWALL TY 4-4 IN	12.00	EACH		$	
1060	01033		PERF PIPE HEADWALL TY 4-6 IN	1.00	EACH		$	
1070	01212		PIPE CULVERT HEADWALL-36 IN	2.00	EACH		$	
1080	01370		METAL END SECTION TY 1-15 IN	26.00	EACH		$	
1090	01371		METAL END SECTION TY 1-18 IN	4.00	EACH		$	
1100	01391		METAL END SECTION TY 3-18 IN	15.00	EACH		$	
1110	01393		METAL END SECTION TY 3-24 IN	1.00	EACH		$	
1120	01411		METAL END SECTION TY 4-18 IN	3.00	EACH		$	
1130	01413		METAL END SECTION TY 4-24 IN	3.00	EACH		$	
1140	01480		CURB BOX INLET TYPE B	2.00	EACH		$	
1150	01490		DROP BOX INLET TYPE 1	5.00	EACH		$	
1160	01642		JUNCTION BOX-18 IN	1.00	EACH		$	

Section: 0004 - BRIDGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1170	02231		STRUCTURE GRANULAR BACKFILL	595.00	CUYD		$	
1180	02403		REMOVE CONCRETE MASONRY	11.90	CUYD		$	
1190	02998		MASONRY COATING	825.00	SQYD		$	
1200	03299		ARMORED EDGE FOR CONCRETE	308.80	LF		$	
1210	08001		STRUCTURE EXCAVATION-COMMON	3,965.20	CUYD		$	
1220	08002		STRUCTURE EXCAV-SOLID ROCK	108.00	CUYD		$	
1230	08003		FOUNDATION PREPARATIONCULVERT 27022	1.00	LS		$	
1240	08019		CYCLOPEAN STONE RIP RAP	1,531.00	TON		$	
1250	08033		TEST PILES	92.00	LF		$	
1260	08046		PILES-STEEL HP12X53	1,248.00	LF		$	
1270	08094		PILE POINTS-12 IN	42.00	EACH		$	
1280	08100		CONCRETE-CLASS A	692.80	CUYD		$	
1290	08104		CONCRETE-CLASS AA	784.70	CUYD		$	

131209

PROPOSAL BID ITEMS

Report Date 9/3/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1300	08150		STEEL REINFORCEMENT	69,415.00	LB		$	
1310	08151		STEEL REINFORCEMENT-EPOXY COATED	225,321.00	LB		$	
1320	08500		APPROACH SLAB	455.60	SQYD		$	
1330	08713		BRIDGE CHAIN LINK FENCE-9 FT	216.00	LF		$	
1340	21532ED		RAIL SYSTEM TYPE III	500.00	LF		$	
1350	23981EC		PPC I-BEAM TYPE HN42-49	2,174.00	LF		$	

Section: 0005 - UTILITY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1360	00003		CRUSHED STONE BASECOMPACTED SELECT FILL	1,920.00	TON		$	
1370	01069		STEEL ENCASEMENT PIPE-12 INBORE & JACK	840.00	LF		$	
1380	01069		STEEL ENCASEMENT PIPE-12 INOPEN CUT	190.00	LF		$	
1390	01073		STEEL ENCASEMENT PIPE-16 IN	170.00	LF		$	
1400	01076		STEEL ENCASEMENT PIPE-20 IN	100.00	LF		$	
1410	02220		FLOWABLE FILL	100.00	CUYD		$	
1420	02483		CHANNEL LINING CLASS II	30.00	TON		$	
1430	02555		CONCRETE-CLASS B	103.00	CUYD		$	
1440	03360		COPPER PIPE-3/4 IN	265.00	LF		$	
1450	03361		COPPER PIPE-1 INBORE	875.00	LF		$	
1460	03361		COPPER PIPE-1 INTRENCH	120.00	LF		$	
1470	03363		COPPER PIPE-2 IN	30.00	LF		$	
1480	03383		PVC PIPE-4 IN	100.00	LF		$	
1490	03391		PVC PIPE-12 IN	330.00	LF		$	
1500	03423		REMOVE METER	11.00	EACH		$	
1510	03434		REMOVE FIRE HYDRANT	5.00	EACH		$	
1520	03438		RECONNECT TO MAIN	1.00	EACH		$	
1530	03538		BEND 11.25 DEG 6 IN	4.00	EACH		$	
1540	03541		BEND 11.25 DEG 12 IN	1.00	EACH		$	
1550	03543		BEND 11.25 DEG 16 IN	1.00	EACH		$	
1560	03545		BEND 22.50 DEG 6 IN	10.00	EACH		$	
1570	03547		BEND 22.50 DEG 10 IN	2.00	EACH		$	
1580	03554		BEND 45 DEG 6 IN	39.00	EACH		$	
1590	03555		BEND 45 DEG 10 IN	11.00	EACH		$	
1600	03556		BEND 45 DEG 12 IN	2.00	EACH		$	
1610	03558		BEND 45 DEG 16 IN	4.00	EACH		$	
1620	03560		BEND 90 DEG 6 IN	2.00	EACH		$	
1630	05985		SEEDING AND PROTECTION	19,615.00	SQYD		$	
1640	08100		CONCRETE-CLASS A	20.00	CUYD		$	
1650	20056NN		REDUCER16 INCH X 12 INCH	2.00	EACH		$	
1660	20120EC		SOLID SLEEVE-6 IN	15.00	EACH		$	
1670	20127EC		SOLID SLEEVE-12 IN	3.00	EACH		$	
1680	20156EC		FIRE HYDRANT ASSEMBLY	13.00	EACH		$	
1690	20425ED		ABANDON MANHOLE	1.00	EACH		$	
1700	20821ND		TEE 12 IN X 12 IN	1.00	EACH		$	
1710	20822ED		TEE 12 IN X 6 IN	1.00	EACH		$	
1720	20951ND		TAPPING SLEEVE AND VALVE-6IN X 6 IN	15.00	EACH		$	

PROPOSAL BID ITEMS

131209

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Report Date 9/3/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1730	20955ND		TEE-10 IN X 6 IN	1.00	EACH		$	
1740	20961ND		PLUG-6 IN	1.00	EACH		$	
1750	20966ND		THRUST RESTRAINT GLAND-8 IN	8.00	EACH		$	
1760	20967ND		THRUST RESTRAINT GLAND-6 IN	241.00	EACH		$	
1770	20981ND		PRECAST MANHOLE-4 FT	3.00	EACH		$	
1780	21099ND		CAP 12 IN	4.00	EACH		$	
1790	21179ND		TAPPING SLEEVE & VALVE 12 X 12W/CUT & CAP (HOT CAP)	3.00	EACH		$	
1800	21251ED		RAISE MANHOLE TO GRADE	1.00	VTFT		$	
1810	21346ND		WATER SERVICE RECONNECT-3/4 IN-1 IN	15.00	EACH		$	
1820	21353ND		TIE-IN TO FORCE MAIN	2.00	EACH		$	
1830	21354ND		CUT CAP AND BLOCK FORCE MAIN8-INCH FORCE MAIN	1.00	EACH		$	
1840	21354ND		CUT CAP AND BLOCK FORCE MAIN6-INCH FORCE MAIN	1.00	EACH		$	
1850	21788ED		OPEN CUT W/ STEEL ENCASEMENT26 INCH	90.00	LF		$	
1860	22788NN		AIR RELEASE VALVE W/MANHOLE CHAMBER	5.00	EACH		$	
1870	22984EN		PVC FORCE MAIN-6 INHDD	430.00	LF		$	
1880	22984EN		PVC FORCE MAIN-6 INTRENCH	250.00	LF		$	
1890	23125EN		BORE AND JACK PIPE-20 IN	160.00	LF		$	
1900	23126EN		BORE AND JACK PIPE-18 IN	145.00	LF		$	
1910	23308EC		WATER METER WITH BOX5/8" X 3/4" METER SETTING	12.00	EACH		$	
1920	23308EC		WATER METER WITH BOX2-INCH METER SETTING	1.00	EACH		$	
1930	23308EC		WATER METER WITH BOX5/8" X 1" METER SETTING	1.00	EACH		$	
1940	23311EC		SOLID SLEEVE-10 IN	3.00	EACH		$	
1950	23358EC		TEE-6 IN X 6 IN	4.00	EACH		$	
1960	23705EC		CUT-CAP AND BLOCK-6 IN	15.00	EACH		$	
1970	23708EC		CUT-CAP AND BLOCK-10 IN	2.00	EACH		$	
1980	23720EC		RESTRAINED JOINT PVC FORCE MAIN-6 INWATERMAIN (W/IN ENCASEMENT)	980.00	LF		$	
1990	23722EC		TAPPING SLEEVE AND VALVE-10 X 10 INW/ CUT & CAP (HOT CAP)	3.00	EACH		$	
2000	23735EC		REDUCER-12 X 10 IN	1.00	EACH		$	
2010	24060EC		FORCE MAIN BEND-8 IN22.5 MJ FITTING	1.00	EACH		$	
2020	24060EC		FORCE MAIN BEND-8 IN45 MJ FITTING	3.00	EACH		$	
2030	24240ED		OPEN CUT W/ STEEL ENCASEMENT-18 IN	85.00	LF		$	
2040	24241EN		PVC FORCE MAIN-8 INWITHIN ENCASEMENT	190.00	LF		$	
2050	24241EN		PVC FORCE MAIN-8 INHDD	430.00	LF		$	
2060	24241EN		PVC FORCE MAIN-8 INTRENCH	250.00	LF		$	
2070	24260EC		DIP 6 IN-RESTRAINED IN 12 IN STEEL ENCASEMENTCL 350 PIPE (W/IN ENCASEMENT) W/PETROLEUM RESISTENT GASKETS	160.00	LF		$	
2080	24260EC		DIP 6 IN-RESTRAINED IN 12 IN STEEL ENCASEMENTCL 350 PIPE (TRENCH) W/ PETROLEUM RESISTENT GASKETS	465.00	LF		$	
2090	24446EC		ASPHALT PAVING	48.00	TON		$	
2100	24556ED		VALVE & METER BOX12 INCH GATE	2.00	EACH		$	
2110	24556ED		VALVE & METER BOX6 INCH GATE	18.00	EACH		$	

131209

PROPOSAL BID ITEMS

Report Date 9/3/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2120	24556ED		VALVE & METER BOX2 INCH BALL	1.00	EACH		$	
2130	24556ED		VALVE & METER BOX16 INCH GATE	1.00	EACH		$	
2140	24556ED		VALVE & METER BOX10 INCH GATE	2.00	EACH		$	
2150	24564EN		PVC PIPE6 INCH SDR 21 WATERMAIN (TRENCH)	7,570.00	LF		$	
2160	24564EN		PVC PIPE16 INCH SDR 21 WATERMAIN (TRENCH)	600.00	LF		$	
2170	24564EN		PVC PIPE12 INCH SDR 21 WATERMAIN (TRENCH)	380.00	LF		$	
2180	24564EN		PVC PIPE10 INCH SDR 21 FUSIBLE (HDD)	575.00	LF		$	
2190	24564EN		PVC PIPE10 INCH SDR 21 WATERMAIN (TRENCH)	1,920.00	LF		$	
2200	24564EN		PVC PIPE16 INCH SDR RESTRAINED JOINT WATERMAIN (W/IN ENCASEMENT)	110.00	LF		$	
2210	24564EN		PVC PIPE12 INCH SDR RESTRAINED JOINT WATERMAIN (W/IN ENCASEMENT)	350.00	LF		$	
2220	24564EN		PVC PIPE10 INCH RESTRAINED JOINT WATERMAIN (W/IN ENCASEMENT)	300.00	LF		$	
2230	24571EC		GASKET6 INCH FIELD LOK	10.00	EACH		$	
2240	24598EC		THRUST RESTRAINT GLAND10 INCH	49.00	EACH		$	
2250	24598EC		THRUST RESTRAINT GLAND16 INCH	16.00	EACH		$	
2260	24598EC		THRUST RESTRAINT GLAND12 INCH	32.00	EACH		$	

Section: 0006 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2270	02562		TEMPORARY SIGNS	2,240.00	SQFT		$	
2280	06406		SBM ALUM SHEET SIGNS .080 IN	557.00	SQFT		$	
2290	06411		STEEL POST TYPE 2	1,016.00	LF		$	
2300	06412		STEEL POST MILE MARKERS	6.00	EACH		$	
2310	24584EC		BARCODE SIGN INVENTORY	126.00	EACH		$	

Section: 0007 - DEMOBILIZATION AND MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2320	02568		MOBILIZATION	1.00	LS		$	
2330	02569		DEMOBILIZATION	1.00	LS		$	