

SPECIFICATIONS FOR CONSTRUCTION

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

**COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS, FRANKFORT**

Standard Specifications
for
Road and Bridge Construction

SPECIAL PROVISIONS

ITEMS 105.07 / 107.15 - COOPERATION WITH UTILITIES

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

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

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

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the existing structure, both as to line and grade, before he starts to lay the proposed conduit, in order to assure compatibility with line and grade of the proposed conduit. The Contractor shall do a video inspection of the existing sanitary sewer line that the proposed drilled shaft retaining wall will cross (approximate Station 23+25 to Station 26+50) both before and after construction to document the condition of the pipe. Copies of the video inspection shall be provided to the City.

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

COORDINATION WITH UTILITIES

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

ITEM 105.06 - COOPERATION BETWEEN CONTRACTORS

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

ITEM 106 - CONTROL OF MATERIAL

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

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

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

ITEM 106.08 - STORAGE OF MATERIALS

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

ITEM 108.02 - PRECONSTRUCTION CONFERENCE

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

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

1. Announcement of Award
2. Utility Company Requirements
3. Designation of Emergency 24-hour Contractor Contacts
4. Discussion of Critical Plan Items
5. Review of Testing and Inspection Procedures
6. Operations Schedule
7. Listing of Haul Roads
8. Identification of Subcontractors
9. Review of Change Order Process
10. Payment Request Submittal Procedure

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

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

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

ITEM 107.04 - PERMITS, LICENSES AND TAXES

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

ITEM 107.14 - CONTRACTOR'S RESPONSIBILITY FOR WORK

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

The Contractor shall be responsible for the protection of areas outside of the designated work limits, but which may be adjacent to those work limits. This will include those areas used by construction

traffic for access to and from the work areas. Where the Engineer and/or the Owner determine that the Contractor's operations have been responsible for damage to areas outside of the work limits, the Contractor shall be responsible for the repair of the area subject to the approval of the Engineer. No additional compensation will be due to the Contractor for any such repairs as described above.

ITEMS 202 / 203 REMOVALS

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

ITEMS 202 / 203 - DEBRIS REMOVAL

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

ITEM 202 – CLEARING AND GRUBBING:

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

ITEM 204 – EXCAVATION FOR GRANULAR BASE (8" DEPTH)

This item shall include the cost of all labor, equipment and material necessary to excavate, dispose of excavated material, in preparation for the placement of 8" DGA stone base.

ITEM 204 – SWALE REGRADING FOR DRAINAGE DITCH

The Contractor shall provide all labor, materials, tools, and equipment required to grade a drainage ditch in good, workmanlike manner in the areas where shown on the plans or where directed by the Engineer and as specified herein. The drainage ditch shall be constructed to promote positive drainage in support of the asphalt recreational trails.

ITEM 206 / 207 / 302 / 701 - TESTING OF COMPACTED MATERIALS

Compaction testing of embankment, granular backfill, and/or subgrade shall be done by an independent qualified testing laboratory under a contract with the Owner. Testing shall be done in the presence of the Engineer at locations specified by the Engineer and shall meet standards as specified in Items 206, 207, 302 and 701.

ITEM 207 – SUBGRADE RESHAPING AND COMPACTING

This shall include all work under 207 Subgrade with exception that any yielding or unsuitable material encountered shall be removed and replaced with approved stable material. No additional compensation will be paid for removing, undercutting, or recompacting any yielding or unsuitable material. At the completion of the subgrade reshaping and compacting, the Contractor will be required to proofroll the subgrade to allow the engineer to inspect the subgrade for acceptable compliance with Item 207. Any yielding areas shall be undercut and recompacted at the Contractor's expenses. All work described above will be paid for under Item 207/SPL Subgrade Reshaping and Compacting.

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

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

A. Materials

1. Topsoil – Topsoil shall be per ASTM D5268 with a pH range of 5.5 to 7. Topsoil shall not contain more than 40% clay in that portion passing a No.10 sieve, shall contain not less than 5% or more than 20% organic matter as determined by loss on ignition of samples oven dried to constant weight at 212 degrees Fahrenheit, and shall be free of rock and other foreign material greater than 1 inch in any dimension and other extraneous materials harmful to plant growth.
2. Fertilizer –
 - a. Fertilizer shall be lawn or turf grade 12-12-12

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

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

By Weight	Name of Grass	Purity	Germination
40%	Fine Lawn Turf-Type Fescue	95%	90%
40%	Creeping Red Fescue (<i>Festuca Rubra</i>)	95%	90%
20%	Annual Ryegrass (<i>Lolium Multiflorum</i>)	95%	90%

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

4. Mulch – Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats or barley.
5. Asphalt Emulsion – ASTM D977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

B. Installation

1. Preparation of Seed Bed

- a. Topsoil - If suitable topsoil is available as part of the excavated material it shall be removed, stored and used to backfill the top 4 inches of the excavation. If sufficient material is not available on site it shall be imported on site at no additional cost to the Owner. All grass, weeds, roots, sticks, stones, and other debris are to be removed and the topsoil carefully brought to the finish grade by **hand raking**. The topsoil shall be sufficiently compacted, by tracking in the material, to prevent significant settlement. Promptly and thoroughly remove topsoil and other materials dropped on pavement surfaces before being compacted by traffic. Before any fertilizer or seed is placed the topsoil shall be inspected and approved by the Engineer.
2. Fertilizing - Fertilizing shall be uniformly applied to all areas to be seeded at the rate of 1 pound per 100 square. The fertilizer shall be thoroughly disked, harrowed or raked into the soil to a depth of not less than 2 inches. Immediately before sowing the seed, the Contractor shall rework the surface until it is a fine, pulverized, smooth seed bed, varying not more than 1 inch in 10 feet. A second application of fertilizer shall be applied at the same rate once the grass has been established or within 6 weeks of seeding.
3. Seeding - Immediately after the preparation and fertilization of the seed bed the Engineer shall inspect and approve the site prior to seeding. The seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rate of 3 to 4 pounds per 1000 square feet. Seed shall be sown dry or hydraulically. After sowing, the area shall be raked, dragged, or otherwise treated to cover the seed to a depth of approximately 1/4 inch.

4. Mulching - Within 24 hours after any given area is seeded, mulching material shall be evenly placed over all seeded areas at the rate of approximately 2 tons per acre, when seeding is performed between the dates of March 15 and October 15, and at the approximate rate of 3 tons per acre when seeding is performed between the dates of October 15 and March 15 of the succeeding year. Mulching material shall be removed once a good turf has been established.
 - a. Emulsion - Mulching materials shall be kept in place with asphalt emulsion applied at a minimum rate of 10 to 13 gallons per 1000 square feet of mulch or by methods as approved or may be otherwise required to prevent displacement of material. Mulching which is displaced shall be replaced at once but only after the seeding or other work which preceded the mulching and which work was damaged as a result of displacement of mulching material has been acceptably repaired.
5. Maintenance – Contractor shall water, mow, weed and otherwise maintain all seeded areas as necessary to secure a good turf. Settled areas shall be filled, graded, and re-seeded. Seeded areas shall be free of weeds and other debris. The Contractor shall be responsible for the condition of the seeded areas for a period of 1 year from the date of Final Acceptance. A satisfactory lawn shall consist of a healthy uniform, close stand of grass, free of weeds, rocks and surface irregularities, with coverage exceeding 95% over any 10 square feet, and bare spots not exceeding 2 by 2 inches.

ITEM 212 / 213 - EROSION CONTROL AND WATER POLLUTION CONTROL

The Contractor shall take extreme care to prevent unnecessary erosion, water pollution and siltation at all points of the project. Temporary seeding and mulching, straw bales, slope drains, etc., shall be used as necessary or as directed by the Engineer. The cost of all temporary erosion control measures shall be incidental to the overall contract.

FULL-DEPTH PAVEMENT SAWING

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

ITEM 302 – 8" DGA (DENSE GRADED AGGREGATE) STONE BASE

This item shall include the cost of all labor, equipment and material necessary to place and compact the aggregate as per plan and details. All work shall be in accordance with Kentucky Transportation Cabinet Standard Specifications Section 302.

ITEM 400 – ASPHALT PAVEMENT – GENERAL

All asphalt pavement shall be per the latest edition of the Campbell County Subdivision Regulations.

ITEM 403 - SEALING EDGES

All edges of the asphalt concrete surface course constructed under this Contract shall be sealed with asphalt cement as directed by the Engineer and meeting the same specifications as used in Item 403, the cost of same to be included in the unit price bid for Item 403, Asphalt Concrete. After completion of the surface course, gutters shall be sealed with asphalt cement as directed by the Engineer. The material shall be applied at a uniform width of approximately 4 inches and at a rate just sufficient to fill surface voids. Sealing edges at building walls, foundations, existing curbs or other visible surfaces shall be done neatly and without more than one-half (1/2) inch of the sealant being visible on the surface. Any extra sealant applied to visible surfaces shall be carefully and thoroughly removed by the Contractor at no additional cost to the Owner.

ITEM 403 - MEETING EXISTING PAVEMENT

Where an asphalt concrete resurfacing project begins or ends, the 403 surface course shall meet the existing on a neat, straight line. Unless otherwise directed by the plans, the Contractor shall construct a ten- foot (10') long butt joint.

ITEM 403 - BROOMING AND CLEANING

The existing surface shall be cleaned and prepared in accordance with Item 403.03. The cost for such work is to be included in the unit price bid for Item 403, Asphalt Concrete.

ITEM 406 - TACK COAT

A tack coat shall be applied to the area to be surfaced in accordance with Item 406, Tack Coat. The residual asphalt content of the tack coat shall be 0.10 gallons per square yard. SS-1, SS-1h, CSS-1, or CSS-1h materials used shall be diluted 50 percent with potable water. Over-spray on curbs, adjoining pavements, and other roadside facilities shall not be tolerated, and the Contractor shall be responsible for clean up of any areas or facilities receiving over-spray. The cost of tack coat shall be included in the unit price bid for Item 403 Asphalt Concrete.

UTILITY ADJUSTMENTS

Utility adjustments including but not limited to water meters, valves, catch basins, gas valves, telephone manholes and gas meters shall be incidental to Item 402 / 403 Asphalt Surface.

Adjustment of sanitary or storm manholes shall be paid for on a per each basis. Adjustments to be completed per SD1 requirements.

TESTING OF CONSTRUCTION MATERIALS

Portland Cement Concrete: All Portland Cement concrete work shall be tested by an independent testing laboratory. The independent testing laboratory shall secure a random sample from each 100 yards of concrete delivered to the job site. A minimum of one sample shall be made each day that concrete work is performed. One sample consists of four specimens. Four specimens shall be molded by the testing laboratory and cured from each sample, in accordance with ASTM C 172. Cylinders shall then be tested in accordance with ASTM C39. One (1) specimen shall be tested at 7 days for information, and two (2) specimens shall be tested at 28 days for acceptance. The acceptance test results shall be the average strength of the two specimens tested at 28 days. The fourth cylinder shall be tested at 56 days only if the 28-day test results do not meet specifications.

Using ASTM C 143, the testing agency shall determine the slump of the concrete for each sample, and also whenever the consistency of the concrete appears to vary. The agency shall also determine the air content of the concrete for each sample, in accordance with either ASTM C 231, ASTM C 173, or ASTM C 138.

The agency shall report all test and inspection results to the Engineer, Contractor, and concrete supplier in writing one working day after the work is performed. All test reports shall include the exact location in the work at which the batch represented by a sample was deposited. Reports of strength tests shall include detailed information on storage and curing of specimens prior to testing.

All concrete work not meeting the specifications as listed in Item 501 and 601 shall be removed immediately and replaced in an acceptable manner with no additional compensation to the Contractor, unless provisions for an extended guarantee are provided herein.

Asphalt Concrete: Item 403 Asphalt Materials shall be plant inspected by an independent testing company; and tickets shall be stamped with the inspector's seal, indicating that material shipped to the job site meets the requirements of the specifications.

The Contractor is responsible for notifying the testing agency 24 hours prior to starting work requiring material testing. If the Contractor fails to provide testing as per any of the above requirements, he will be required to stop work until proper arrangements have been made with the testing agency.

The testing agency and its representatives are not authorized to revoke, alter, relax, enlarge or release any requirement of the contract documents, nor to approve or accept any portion of the work.

ITEM 601 - CONCRETE - GENERAL

All concrete for roadway paving, curbs, sidewalks, drive aprons, steps and headwalls shall have a minimum of 5 percent entrained air and a maximum of 8 percent entrained air. For each sample, the average strength of the 7-day and the two 28-day tests shall equal or exceed 4000 psi, and no individual strength test shall fall below 3500 psi.

If the averages of all sets of three consecutive strength test results meet the following strengths, an extended guarantee will be required on all concrete work.

- a) 3500 psi to 3799 psi - 3 year guarantee
- b) 3800 psi to 3999 psi - 2 year guarantee

All concrete shall be per the latest edition of the Campbell County Subdivision Regulations.

Concrete Roadway Pavement and Curbs:

- Aggregate for concrete roadway pavement shall be crushed limestone aggregate from an approved KTC source.
- A six (6) bag cement per cubic yard concrete mix shall be provided for public roadway pavement.
- Expansion for joint filler material shall consist of a flexible foam material such as Ceramar by W.R. Meadows or approved equal.
- Curing and sealing compound containing 25% solids such as Kure and Seal 25 LV or approved equal.

Concrete For Drilled Shaft Wall:

- See Geotechnology, Inc for Sheets 101-109 for details and requirements

ITEM 701 – GRADING AT INLETS AND OUTFALLS OF PROPOSED CONDUITS

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

EXISTING PIPE

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

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the

existing structure, both as to line and grade, before he starts to lay the proposed conduit, in order to assure compatibility of line and grade of the proposed conduit.

The Contractor shall do a video inspection of the existing sanitary sewer pipe that the proposed drill shaft wall will cross (between approximate Station 23+25 to Station 26+50 both before and after construction to document the condition of the pipe. Copies of the video inspection shall be provided to the city.

Payment for all operation described above shall be included in the unit price bid for the pertinent conduit item or drilled shaft retaining wall.

ITEM 701 - REVIEW OF DRAINAGE FACILITIES

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

All existing sewers inspected initially by the above-mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer. All existing and/or new conduits, inlets, catch basins, and manholes constructed and/or cleaned as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the Owner. Payment for all operations described above shall be included in the unit prices bid for the pertinent item.

ITEM SPL - TRENCH FOR SEWER CONSTRUCTION

Per Sanitation District No. 1 Specifications Section 02630.

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

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

ITEM SPL - STORM SEWER PIPE MATERIAL

As per Sanitation District No. 1 Specifications Section 02630.

ITEM SPL – CONDUIT, DRAINAGE AND UTILITY ITEMS

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

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

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

ITEM 701 - PIPE CUT-OFFS

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

ITEM 701 - MAINTENANCE OF SEWER FLOWS

The Contractor shall conduct his operations so as to maintain at all times storm water and sewer flows through existing facilities to remain in place and through existing facilities to be replaced until new facilities are completed and placed in use.

ITEM SPL - PIPE BEDDING AND BACKFILL**Pipe Bedding**

As per Sanitation District No. 1 Specifications Section 02220.

Low-Strength Mortar Backfill Material

As per Sanitation District No. 1 Specifications Section 02220.

Excavation Material for Compacted Backfill

As per Sanitation District No. 1 Specifications Section 02220.

ITEM 701 REMOVAL OF WATER

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

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

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

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

ITEM 701 – 6" PVC CROSS DRAIN

Payment for Item 701 – 6" PVC Cross Drain will be made at the contract unit price per linear foot for all materials, equipment and labor to complete the work per Kentucky Standard Specifications for Road and Bridge Construction Section 701 and these plans and specifications.

Payment shall include 6" PVC (SDR35) pipe, No. 57 Stone backfill and trench as shown and noted on the provided plans/details. Payment shall also include any connections/taps to drainage structures.

ITEM 704 – 6" UNDER DRAIN TRENCH

Payment for Item 704 – Under Drain will be made at the contract unit price per linear foot for all materials, equipment and labor to complete the work per Kentucky Standard Specifications for Road and Bridge Construction Section 704 and these plans and specifications.

Payment shall include 6" rigid perforated PVC pipe, Non-Woven Geotextile (Mirafi 140N or Approved Equal), No. 57 Stone Backfill and trench as shown and noted on the provided plans/details. Payment shall also include any connections/taps to drainage structures.

ITEM SPL – ADJUST SANITARY MANHOLE TO GRADE

Payment shall be made at the contract unit price and shall include all labor, materials and equipment necessary to adjust existing sanitary sewer manholes to grade as per the requirements and specifications of Sanitation District No. 1. Contractor shall be responsible for coordinating work with Sanitation District No. 1.

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

Storm sewer manholes, inlets and catch basins shall be constructed as per the details on the construction drawings and conforming to the requirements of SD1 Specifications Section 02630. All castings for manholes, catch basins and inlets shall conform to those specified in the standard construction drawings. Grated inlet tops shall be placed as specified on the plans. Tops of casting elevations are subject to final adjustments as approved by the Engineer. All castings used shall be subject to the final approval of the Engineer. Payment for these items shall include connection to proposed or existing storm sewer conduit. Any additional backfill required due to the removal of an existing storm structure and relocation of the proposed storm structure shall be incidental to the manhole, inlet or catch basin. All backfill in pavement areas shall consist of flowable fill.

ITEM SPL - SHORING AND TRENCH BOX

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

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

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

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

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

ITEM SPL - SHEETING AND SHORING

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

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

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

ITEM SPL – DRILLED SHAFT RETAINING WALL

Refer to Design Drawings, by Geotechnology, Inc., Drawing 101 through 109 dated March 24, 2020.

Installation of drilled shaft wall including plugs & lagging per the project specifications and the general notes, plans, details and sections shall be included in a lump sum bid for Item 14 (FEMA Site 1 and Item 11 (FEMA Site 2), respectively. DRILLED SHAFT WALL

CONTROL OF WORK

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

Any disturbed areas outside of the construction limits shall be restored at the Contractor's expense.

"OR APPROVED EQUAL" ITEMS

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

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

PAYMENT

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

THE OWNER RESERVES THE RIGHT TO AWARD OR DELETE ANY OR ALL COMBINATIONS.

ELECTRIC UTILITY NOTES

DUKE ENERGY

1. **DANGER** - Contractor shall contact the company prior to excavation in vicinity of electric underground facilities (approximate plan location shown) or when working near overhead electric facilities.
 - (A) For Field Inspector to locate underground electric line, in Ohio call "Ohio Utilities Protection Service" at 1-800-362-2764, and in Kentucky call "Kentucky Underground Protection Service (KUPS)" at 1-800-752-6007 (at least 48 hours in advance), excluding hours Sat., Sun., and State Legal Holidays.
 - (B) For notification of construction activity near energized electric facilities, call Mr. Bob Schroeder, 513-287-3426.
 - (C) For additional underground electric record information, call 513-287-2454.
 - (D) For electric engineering notification, agreements and correspondence, address to Mr. Tom Birkenhauer, Duke Energy Corporation, Distribution Design Engineering, Room 467A, 139 East Fourth Street, P.O. Box 960, Cincinnati, Ohio 45202-0960.
2. Contractor shall be responsible for all damages to electric facilities during construction.
3. Electric facilities to be kept in service at all times.
4. Contractor shall be responsible for supporting existing electric facilities affected by the proposed construction.
 - A. Where high pressure oil filled pipe type cable installations are exposed or otherwise interfered with by the Contractor, protection by the Contractor will be required against damage to the coating or surrounding thermal sand envelope.
 - B. Where concrete encased conduit systems or direct buried cable systems are exposed or otherwise interfered with, the Contractor shall protect the system as necessary against damage. As soon as feasible, the Contractor shall take additional appropriate steps to provide permanent measures to restore support. The methods used shall be based on conditions to be determined by the utility.
 - C. Where poles or anchors that support overhead electric facilities are exposed or otherwise interfered with, the Contractor shall protect them from damage and provide temporary support to insure the integrity of the system. As soon as feasible, the Contractor shall take additional appropriate steps to provide permanent measures to restore support. The methods used shall be based on conditions to be determined by the utility.
 - D. Where the depth of excavation for the proposed work is greater than five (5) feet, the Contractor shall sheet and shore the trench to continuously maintain the support of electric facilities at locations where the electric facilities are within the zone of influence adjacent to the excavation as determined by the natural angle of repose of the soil.
 - E. All damage to electric facilities and services requiring adjustments, relocations and/or repairs will be made at the Contractor's cost.
5. Contractor shall not backfill exposed electric facilities until the company has inspected its facility or performed any adjustments and/or maintenance that may be required.

NOTE: Should Contractor damage electric facilities, Contractor shall immediately notify the Electric Service Desk through the Company Operator (513-421-9500). Contractor shall keep everyone clear of damaged electric facilities until company personnel arrive at the work site.

GAS FACILITY NOTES

DUKE ENERGY COMPANY

Gas Facility Notes

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

Duke Energy
139 East Fourth Street
P.O. Box 960, Room 460-A
Cincinnati, Ohio 45202
- II. The gas main information provided shows the approximate locations and depths of cover and is provided to comply with statutory regulations. This information should be used only for planning, not construction.
- III. All gas main depths of cover noted are approximate depths of cover recorded at the time of installation. Any resulting grade changes since the time of the main installation will cause the existing depth of cover to be different. Extreme care must be taken to ensure safe excavation when approaching known or suspected gas facilities.
- IV. All gas services were installed at a minimum of 1'-6" of cover. See item III above.
- V. For additional gas facility record information, call 1-800-372-7612.
- VI. To comply with federal and state regulations concerning damage prevention programs, the utility companies must be contacted at least 48 hours (two working days) prior to excavation by calling the OHIO UTILITIES PROTECTION SERVICE (OUPS), toll free, at 1-800-362-2764.

Construction Notes

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

- III. The contractor shall sheet and shore all excavations as required to continuously support gas facilities within the zone of influence (as determined by the natural angle of repose of the soil).
- IV. Crossing buried gas facilities with heavy construction equipment may cause damage to the gas facilities. Contact the Duke Energy Gas Engineering Department for details on how to protect the gas facilities from damage.
- V. The contractor shall not backfill exposed gas facilities until the utility has inspected its facilities and performed any maintenance and/or adjustments that may be required.
- VI. The contractor is responsible for preventing any damage to our gas facilities. This includes protection of coatings and wrappings on steel gas mains. It also includes any damage with may have occurred to plastic gas mains, such as crimps or gouges.
- VII. When cast iron or similar gas facilities are exposed or interfered with by the contractor, replacement or reinforcement by Duke Energy may be required at the contractor's expense. Backfill with control low strength material will be required.
- VIII. Blasting or other construction procedures which may transmit loads or vibrations in the vicinity of gas facilities must be approved by Duke Energy Gas Engineering Department. A blasting plan, identifying all pertinent information, must be submitted in writing by a blasting expert prior to any work.

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

- I. Proposed development plans around and near gas facilities within private easements must be submitted to Duke Energy Gas Engineering Dept. for review. These plans must be approved before any work may begin within our easements.
- II. Specified easement widths must be maintained in order for Duke Energy to protect its facilities.
- III. No permanent structures may be built within the easements.
- IV. Cuts and fills are generally not permitted within the easements. Some fills may be allowed, and will be reviewed on an individual basis. Any permitted fills will be limited to an amount which will allow Duke Energy to properly maintain its facilities.
- V. Perpendicular utility crossings of gas easements are acceptable, provided proper clearances are maintained. Parallel installations are normally not allowed.

WATER WORKS NOTES

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

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

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

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

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

No extra payment will be made for lead joints.

SANITARY SEWER NOTES

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

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

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