

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:

**State of Ohio
Department of Transportation**

1. Construction and Material Specifications
2. Construction and Material Supplemental Specifications
3. Standard Construction Drawings

**City of Cincinnati
Department of Water Works**

1. Construction and Material Specifications
2. Standard Drawings

SCOPE OF WORK

1. **WEST SHARON ROAD (808 W. SHARON - 673 W. SHARON)**

2" pavement planning, trackless tack coat, 2" asphalt surface course, curb ramps, spot curb replacement, and reapply pavement markings.

2. **WEST SHARON ROAD (EMBASSY - 808 W. SHARON) – ALTERNATE-1**

2" pavement planning, trackless tack coat, 2" asphalt surface course, and reapply pavement markings.

3. **NORTHLAND BLVD. (W. SHARON – 830 NORTHLAND) – ALTERNATE-2**

1-1/2" pavement planning, trackless tack coat, 1-1/2" asphalt surface course, and reapply pavement markings.

Engineer's Estimated Opinion of Construction Cost is \$120,000 (Base Bid Only)

SPECIAL PROVISIONS

ITEM 207 - TEMPORARY SEDIMENT AND EROSION CONTROLS

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 Contract.

ITEM 254 - PAVEMENT PLANING

The work of this item consists of removing the existing asphalt wearing surface to the depths and limits specified or as directed by the Engineer, the intent of which is to restore adequate curb height and/or to remove deteriorated portions or irregularities in the existing wearing surface. Removal shall be by the method of cold surface planing, as described in Item 254.

The Contractor shall be responsible for notifying all residents of parking restrictions 24 hours in advance of any and all planing operations. Care shall be exercised during planing operations so as not to damage manhole covers, grates, chambers, valves, valve boxes, etc. Any utility castings damaged by the Contractor's operations shall be replaced by the Contractor at his expense.

After removing the wearing course, the Contractor shall immediately clean and tack coat an area at least four feet (4') in radius around all utility castings within the removal area and place an asphalt concrete wedge, thoroughly compacted in accordance with Item 401, around the castings in the four-foot (4') radius area. As an alternate method, the Contractor may choose at the time the wearing course is removed to leave a four-foot radius wedge of existing surface course around the utility casting to protect traffic, but will not be allowed to remove these wedges until the day previous to placing asphalt concrete surfacing on the street. Where manholes or valve chambers within an area where wearing course is removed have previously been adjusted with adjusting rings, the Contractor shall also have the option of removing the adjustment ring.

If the Contractor chooses to remove the adjustment rings, he shall re-install the rings immediately prior to resurfacing the street. No additional compensation will be paid for the placing of asphalt wedges, the removal and re-installation of adjustment rings, or the separate removal of existing wearing course left around the castings. These costs shall be included in the cost of removing the wearing course. All material removed shall be the property of the Contractor.

The Contractor shall note that the maintenance of proper drainage patterns will be of special concern, especially where proposed work is to meet existing pavement. The Contractor may be required to survey areas in question, using an automatic level or other appropriate equipment to assure proper grade and cross-slope. The cost of all operations required to assure and to demonstrate that proper drainage patterns have been maintained shall be included in the unit price bid for the pertinent pavement removal item.

During the pavement planing process, should circumstances arise where more existing pavement is being removed than specified, the Contractor SHALL notify the owner immediately and stop work until the owner arrives on-site and the issue is discussed and resolved. Due to past experiences, including, but not limited to, air temperature, pavement temperature and/or failure of bonding agent, a substantial increase in the pavement planing has occurred without the City's approval or insight into existing conditions. Should overages to the Contract occur that are associated with pavement planing not completed per the drawings and specifications AND the continued pavement planing by the Contractor without notifying the Owner and stopping work, then the Contractor shall be responsible for all additional work associated with the pavement planing not being completed per the drawings and specification, including but not limited to the additional work or quantities needed to complete the paving specification.

ITEM 401 - 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, the cost of same to be included in the unit price bid for Item 448, Asphalt Concrete. After completion of the surface course, gutters shall be sealed with **hot applied rubberized joint sealer** 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, 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 401 - ASPHALT CONCRETE PAVEMENTS

401.16 Compaction: Add: Achieve an in-place density of the compacted material ranging between 92.0% and 96.9% as determined by the material testing consultant.

ITEM SPECIAL – TACK COAT, TRACKLESS TACK

ITEM SPECIAL - TACK COAT, TRACKLESS TACK

DESCRIPTION: This work consists of preparing and treating a paved surface with a trackless tack asphalt emulsion.

Furnish materials according to the ODOT's approved list.

Meet all requirements of Item 407 Tack Coat in the Construction and Materials Specifications required by the contract, except as noted below.

MATERIAL: Meet all properties of the approved manufacturer's trackless tack specification requirements on file with the laboratory at time of placement.

ACCEPTANCE AND SAMPLING OF MATERIALS: Supply certified test data to the Engineer and to the district laboratory demonstrating the trackless tack supplied was tested for and meets all material properties shown on the department's approved list.

During construction, the Contractor will prepare a sample from the distributor and supply to an approved test lab for testing to confirm the material requirements. Based on the quantities for this project, one quart of trackless tack will be sampled and shall utilize a proper plastic quart sampling container. Clearly mark on the sample with the manufacturer's name, project number, and the words "Trackless Tack".

EQUIPMENT: Follow manufacturer's recommendations for correct distributor settings. Thoroughly clean all equipment if previously used material charge is different than the proposed material.

APPLICATION OF ASPHALT MATERIAL: Uniformly apply the trackless tack with a distributor according to the manufacturer's instructions. If trackless tack is stored for an extended period of time, prior to application, agitate or gently circulate the material.

Ensure all nozzles and spray patterns are identical to one another along the distributor spray bar. Place the angle of the nozzle at a 15 to 30-degree angle to the spray bar axis to maximize overlap or as recommended by the nozzle manufacturer. Contact the manufacturer's representative for required spray nozzle size and distributor and nozzle settings.

Apply at a rate of 0.04 to 0.1 gallons per square yard. Do not dilute trackless tack. Recommended application temperature is 160° F to 180° F. Do not exceed 180° F. The Engineer will approve the quantity, rate of application, temperature, distributor settings, and areas to be treated before application of the trackless tack coat. The Engineer will determine the actual application in gallons per square yard by a check on the project.

PERFORMANCE OF TRACKLESS TACK: Determine the time to set for the material to become trackless. The Engineer will report any issues with excessive time to set, or after set issues with stickiness, or pickup of the tack to the Contractor.

If the certified test data fails to meet the lab testing criteria, or field samples fail to meet the lab test criteria, or the trackless tack fails to perform satisfactorily in the field, as noted above, the Contractor will be required to replace and supply another approved trackless tack product for the remainder of the project at no additional cost to the department.

ITEM 446 / 448 - MEETING EXISTING PAVEMENT

Where an asphalt concrete resurfacing project begins or ends, the 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 (see detail). This is to be incidental to Item 448, Asphalt Concrete.

ITEM 441 - ASPHALT CONCRETE

448.03 Reports and 448.04 Acceptance: Acceptance requirements have been modified in these Special Provisions to adjust for smaller quantity projects and assure each day of paving meets the design criteria of the Job Mix Formulas (JMF). Except as modified in this provision, all other requirements of the ODOT 441 Specification still apply.

Acceptance of all 448 asphalt will be based on the results of extraction and gradation tests performed by the material testing consultant. The testing consultant will obtain four (4) samples for each day of paving in accordance with ODOT Supplement 1035. The consultant will do extraction and gradation tests, in accordance with ODOT Supplements 1038 and 1039, for two (2) of the samples, the other two (2) will be hold samples. A Lot as used in 403.08 will be defined by the total cubic yards of asphalt placed for each specific pay item for each JMF. Acceptance of a Lot will be based on the average of a minimum of four (4) tests. In addition to each Lot, each day of paving will be subject to the tolerance criteria shown in Tables 403.08-1 and 403.08-2.

The Contractor is still required to perform all tests and submit reports per ODOT 441.

ITEM 441 - BROOMING AND CLEANING

The existing surface shall be cleaned and prepared in accordance with Item 401.12. The cost for such work is to be included in the unit price bid for Item 448, Asphalt Concrete.

ITEM 503 - SHEETING AND SHORING

The Contractor shall furnish, put in place, and maintain such piling, sheeting, bracing, etc., as is required by the Industrial Commission and the Department of Industrial Relations, State of Ohio, in their Bulletin No. 1C-3, "Specific Safety Requirements Relating to Building and Construction Work," as revised. 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 603 - 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 611 - RESTORATION OF AREAS DISTURBED BY DRAINAGE FACILITIES

Soil areas disturbed by construction of underdrains, trench drains, conduits, catch basins or other drainage facilities shall be regraded to drain properly and then restored with top soil, seeding and mulching. The cost of restoration of these soil areas is to be included in the unit price bid for the pertinent drainage item.

Pavement areas (including walks, drives, curbs, etc.) disturbed by the construction of the drainage facilities will be restored as per the applicable asphalt pavement repair detail or the concrete pavement detail. Payment for the restoration of these areas will be at the unit price bid for the pertinent pavement item.

ITEM 608 - WALKS, CURB RAMPS, AND STEPS

The unit price bid for Item 608 shall include all labor, material, and equipment necessary for the removal and disposal of the existing concrete walk, the replacement of the concrete walk, and the

restoration of the grass areas adjacent to the walk with topsoil and seed. **All restoration work is to be completed within one (1) week of the completion of the construction of the new concrete walk.** The walk shall be five (5) inches in thickness, except in walk areas through the driveway aprons, and at curb ramps where the thickness shall be increased to six (6) inches.

The Owner shall mark in the field the walk to be replaced under this item. The minimum width to be replaced will be two (2) feet. Replacement walk shall match the line and grade of the existing walk. Item 705.03, preformed one-piece expansion joint material, 1/2-inch thick, shall be placed adjacent to all existing remaining walk or structures. Where integral lug curb is a part of the walk to be repaired, the cost of replacement of the curb shall be included in the price bid for the walk.

The estimate quantity for the replacement of the existing concrete walk is approximate only and could increase or decrease from time to time during the progress of the work.

Any replacement concrete walk not constructed as per detail will be removed and replaced.

Field marking of walk prior to removal with City Inspector. Measurements for sidewalk will be per list given to Contractor. Any additional walk replacement must be approved by the City Inspector before removal/replacement.

Curb ramp construction shall conform to Item 608.07. Curb ramp standard dimensions will be adjusted as required by the Owner in the field to provide adequate access for handicapped persons in the vicinity of poles or other fixed objects behind the curb. Curb ramps in both new and existing concrete walks will be measured by square footage complete. Payment shall include the cost for saw cutting, excavation, disposal of material, backfill, base course material, reinforcing steel, expansion joint material, grading, forming, all materials, finishing of the curb and walk of the ramp, restoration, and incidentals necessary to complete the specified items. The furnishing and installation of truncated domes is to be completed under a separate pay item and will be measured by square footage installed.

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

ITEMS 608 / 452 - SIDEWALK AND/OR DRIVE APRON FINISH

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

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

ITEM 609 - CURBING, CONCRETE MEDIANS, AND TRAFFIC ISLANDS

The unit price bid for Item 609 shall include all labor, equipment, and material necessary to saw cut, remove and dispose of existing curb, construct the replacement curb, and restore the adjacent grass areas with topsoil, seeding, and mulching, and **apply white pigmented curing compound to all new curb and gutter**, or as directed by the Owner. **The restoration work is to be**

completed within one (1) week of the completion of the construction of the new curb. The replacement curb shall, in general, match the existing curb as to line and grade, except where there are existing drainage problems. The Contractor shall grade the new curb to drain in conformance with the drainage patterns of the street.

The new curb is proposed to be constructed on both sides of the street, the construction of the replacement curb including downspout connections and grouting in place, and the restoration work is to be completed on one side of the street before construction of the replacement curb begins on the other side of the street.

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

Existing contraction joint pattern in the curb shall be maintained, but the maximum spacing between contraction joints shall be ten (10) feet. Expansion joints shall be constructed on a maximum spacing of forty (40) feet. Where replacement curb begins or ends at an existing expansion joint, the Contractor shall install new expansion joint material, the cost of which is to be included in the unit price bid for the curb replacement. Finish of the replacement curb shall be a light brush finish.

Unless otherwise directed by the Engineer, where curb is to be replaced at driveway locations the Contractor shall construct the curb so as to facilitate ingress and egress of vehicles and to match the grade of the existing drive. If required, the Contractor shall construct the portion of the curb through the drive entrance as a drop curb with transition areas on each side of the driveway approach. The Contractor shall note that the concrete curb details, as shown on the plans, may be modified by the Engineer in the field in order to properly match the various dimensions of the existing curb, which is to be removed.

Existing downspout leaders outletting at the curb shall be replaced as per the detail, "Downspout Extension detail". The cost for the labor and material necessary to replace the downspout leader shall be incidental to the pertinent curb replacement item for each downspout replaced three (3) feet in length. Topsoil and seeding shall be incidental costs. If more than three (3) feet of downspout needs to be replaced to obtain positive slope, the additional work shall be paid on a per foot basis in bid item 611, 3" PVC pipe SCH 40. However, all new downspout pipe shall be installed with as few joints as possible, regardless of how payment is made. Any necessary vertical or horizontal bends shall be included and paid for on the above basis.

ITEM 614 - MAINTAINING TRAFFIC

The Contractor shall maintain traffic through the project at all times in conformance with Item 614.

During the removal of the asphalt wearing course, the repair of the base pavement and/or the construction of the asphalt courses for the roadway, the Contractor will be permitted to close one lane of pavement while maintaining traffic in the other lane on an alternating flow basis. The Contractor will be held strictly to the flagging requirements listed under Item 614.03d. The closing of the lane to traffic will be permitted during the above operations and for the periods of time consistent with the requirements of the specifications for the protection of the completed asphalt concrete courses.

If, at the completion of the normal working day, any trench for pavement construction and/or construction of proposed sewer has not been completely backfilled and restored, a temporary cover, such as a metal plate or another approved device, shall be placed over that portion of the trench remaining open.

All driveways shall be accessible to the residents between the hours of 6:30 - 8:30 AM and 4:30 - 6:30 PM. The **only** exception shall be during curb and apron replacement construction at the drive entrances. Should work that may block the driveway be necessary, the Contractor must notify the residents or businesses at least two (2) working days prior to closing driveways. If the residents and businesses have not been notified two (2) working days in advance of the anticipated drive closures, the Contractor will be prohibited from making these closures until such time as the proper advance notification is made.

In addition to driveway blockage notification provided and distributed by the Contractor, the City shall prepare and the Contractor shall immediately distribute (hand deliver) up to four (4) public notices to each resident or business during the job in order to keep the residents informed throughout the project.

The maximum time period for driveway closure shall be 96 hours. The Contractor shall place new curbs within 48 hours of removal. The Contractor shall keep driveways closed for a 48-hour period after concrete placement to permit the curing of concrete curbs, driveway aprons, or sidewalk across driveways.

The Contractor shall note that any interim material used for providing driveway ingress and egress will not be a separate pay item, and the cost of said interim material shall be included in the lump-sum price bid for Item 614.

In those areas where existing pavement is to be resurfaced or removed and replaced, the Contractor shall conduct his operations so as to maintain driveway traffic through the construction area. If two approved access points serve the same parking area, the Contractor will be permitted to close one access at a time. The Contractor will be permitted to close paved areas to traffic for a minimum period of time, consistent with the requirements of the specifications for the protection of completed asphalt concrete courses. If business property is involved, an alternate access must be provided if blockage exceeds one (1) hour. Repeated blocking must allow at least a 15-minute interval of traffic access every hour. Time period of residential driveway closures shall be kept to a minimum, but no more than the maximum time period stated in the above paragraphs.

ITEM 659 - SEEDING AND MULCHING

A Class1 – lawn mixture shall be used for the areas that need to be restored with seed and mulch.

ITEM 659 - COMMERCIAL FERTILIZING

All areas to be seeded and mulched under Item 659 shall have commercial fertilizer (12-12-12) applied to the rate of 20 pounds per 1000 square feet, the cost of which shall be incidental to the Contract.

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

Gas Facility Notes

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

Duke Energy
Gas Distribution Engineering
P.O. Box 960, Room 460-A
Cincinnati, Ohio 45273-9598

- 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 (513) 287-3636.
- 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).

**GAS FACILITY NOTES
DUKE ENERGY**

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- IV. Crossing buried gas facilities with heavy construction equipment may cause damage to the gas facilities. Contact the 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's 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's 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 City of Cincinnati Water Works and under the direction, supervision and inspection of the Water Works. Water main items are to be constructed in accordance with the provisions of the State of Ohio, Department of Transportation, Construction and Material Specifications, current edition, and modified by the latest edition of the City of Cincinnati Supplement to said State of Ohio Specifications, and any supplements or changes thereto. Copies of all pertinent specifications may be obtained from the City of Cincinnati Water Works, 4747 Spring Grove Avenue.

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.

All pipe and specials shall be in accordance with City of Cincinnati Specification 40-110-76.

All valves to be purchased from the Cincinnati Water Works.

No extra payment will be made for lead joints.

ITEM SPECIAL – MANHOLE ADJUSTED TO GRADE, SANITARY SEWER

This work consists of adjusting manholes to grade with using precast concrete shim rings, brick and mortar, or mortar only adjustments. If necessary, these items also include minor repairs to the top sections of the manhole. The repairs are limited to the top 6 inches of the dome as measured below the casting.

For sanitary, storm and combined sewer manholes, in lieu of concrete shim rings, the use of the following products is permitted.

1. Injection molded high density polyethylene (HDPE) adjustment rings as manufactured by Ladtech, Inc. The HDPE adjustment rings must be manufactured from polyethylene plastic as identified ASTM Designation D-1248 (Standard Specification for Polyethylene Plastic Molding and Extrusion materials.) The adjustment rings must be tested to assure compliance with the impact and loading requirements per the ASSHTO Standard Specifications for Highway Bridges. The maximum height adjustment with the HDPE rings is 6 inches.

Install per the manufacturers recommendations and per the following:

For the HDPE adjusting ring installation, all concrete and metal surfaces must be clean of sand grit and loose rust. Between all HDPE plastic rings, concrete and metal surfaces, spread a 3/8-inch continuous seal of Sikaflex 11FC or approved equal to each surface in contact with the rings. The contractor must ensure the seal between the cone, rings and metal casting have a continuous bead of sealant to ensure a complete and waterproof seal. Utilize a molded and indexed slope ring for all adjustments for matching sloped or crowned road grade.

ALL HDPE adjusting rings must be covered by a manufacturer's five-year warranty.

2. Infra-Riser ® rubber composite riser rings as manufactured by East Jordan Iron Works. These rings must be installed per all manufacturers' recommendations including the use of a joint sealer. Place the ring just below the casting. Do not stack more than two rings high. The rings must not exceed a total height of 3 inches.

For adjustment of sewer manholes, refer to Manhole Adjustment Detailed Drawing.

Casting Adjustment Requirements:

1. Perform utility casting adjustments after the placement of the intermediate (leveling) course of asphalt pavement or after planning the surface course if no intermediate course is stipulated.
2. Saw cut a square area of pavement full depth around the casting a minimum of two feet beyond the edge of the casting to accommodate suitable mechanical compaction equipment.

ITEM SPECIAL – MANHOLE ADJUSTED TO GRADE, SANITARY SEWER

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3. Adjust castings to the proper height using precast concrete shims. Brick and mortar adjustments only possible with permission of the engineer.
4. After the casting has been adjusted to grade, restore the entire void in the pavement by tacking around the perimeter of the casting and saw cut edges and filling the opening around the casting with compacted Item 301 Asphalt Concrete base. The maximum compacted depth of any one layer of the 301 material for these adjustments is 4 inches. Compact the final lift of 301 base flush with the surface of the intermediate course or the planed surface if no intermediate course is used. The minimum depth of 301 material is 12 inches.
5. The use of dry mix concrete to fill the void around the casting is not permitted.
6. Upon completion of the adjustment work, immediately place a compacted 448 Type 1 hot-mix asphalt wedge around the raised casting. **For castings exposed up to one inch, place a wedge with a minimum diameter of four feet around the casting. For castings greater than one inch, place a wedge with a minimum diameter of six feet around the casting. Asphalt wedges must extend up to and be flush with the top of the casting.** Install wedges by the end of the workday in which the casting is raised.

Remove wedges immediately prior to the machine paving. The cost of wedging castings is included in the price bid Item 441 – Asphalt Concrete Surface Course and Item 441 – Asphalt Concrete Intermediate Course.