

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 GENERAL**1.01 - Section Includes**

Measurement and payment criteria applicable to the Work by the Contractor.

1.02 - Authority

The ENGINEER will be responsible to verify measurements for payment as submitted by the Contractor with the request for payment. Any discrepancies between the quantity submitted by the Contractor and the quantity measured by the ENGINEER will be decided by the ENGINEER.

1.03 - Payment

- A. Payment for the Work completed in accordance with the Contract Documents will be measured and paid as described below or in the Contract Documents, only if the bid item appears on the bid form.
- B. If, in the completion of the Work, the quantities for measured items vary from those on the bid form, the Contractor shall report the discrepancy to the ENGINEER before the work is covered. In such a case, the payment to the Contractor shall be adjusted based on the unit prices submitted on the bid form. However, if the ENGINEER determines the character of the additional quantity is not consistent with the character of the item(s) upon which the unit price is based, a different unit price may be negotiated.
- C. The Contract Price for any item shall be full compensation for completion of the item, including any materials, equipment, tools, and labor necessary to complete the item in accordance with the Contract Documents.
- D. If no bid item appears on the bid form, related work shall be considered incidental to a bid item and no additional payment will be made for the requirement.

1.04 - Measurement and Payment Descriptions

- A. The following shall be considered incidental to bid items; unless a bid item appears. Items considered incidental are not limited to those listed here:
 - 1. Submittals.
 - 2. Removal of driveway culverts 24-inches in diameter and smaller.
 - 3. Dust control.
 - 4. Removal and re-installation of private mailboxes.
 - 5. Finish grading.
 - 6. Trench excavation and backfill with suitable native material.
 - 7. Sheeting, shoring and bracing.
 - 8. Bedding.
 - 9. Dewatering.
 - 10. Sanitary sewer bypass pumping.
 - 11. Concrete pipe collars.
 - 12. Pipe ties and connectors.
 - 13. Measures required to protect subgrades.
 - 14. Measures required to provide positive drainage during construction.
 - 15. Measures required to protect existing features including existing utilities, of the project site.
- B. Itemized Sections (see following sections.)

- 01100-01 Mobilization:** paid on a lump sum basis. If requested by the ENGINEER, the Contractor shall provide a breakdown of mobilization components for review and approval. When such itemization is approved, partial payments will be made as identifiable portions of the mobilization fee are completed. If an itemization is not provided, mobilization will be paid based on the percentage of the total original contract completed. **Lump sum includes five (5) mobilizations for erosion control activities, including but not limited to reseeding disturbed areas with temporary seed mixture and repairs to erosion control measures.**
- 01100-02 Mobilization for Erosion Control Activities:** To conform with applicable requirements and with project staging, additional site visits beyond the five (5) mobilizations for erosion control activities included in the lump sum price for Item 01100-01 (Mobilization) may be required. The CONTRACTOR shall mobilize for erosion control activities, when required by site conditions, to conform with permit requirements, and/or when so directed by the ENGINEER. When applicable, a unit price of \$500 for each additional mobilization for erosion control activities, and estimated maximum quantity for same, will be included in the contract. The actual number of additional mobilizations for erosion control activities, up to the estimated maximum quantity, will be determined by the ENGINEER.
- 01100-10 Construction Surveys:** paid on a lump sum basis. The progress payment made for this item will be proportionate with the completion of the services required to complete the staking as set forth in the Contract Documents. Re-establishment and replacement of existing property corners and government monuments and benchmarks shall be included in this item. Additional surveying and/or re-work of construction due to incorrect or insufficient construction surveys performed by the Contractor are incidental.
- Lump sum for this item includes, but is not limited to, the following:**
- **Verifying existing and as-built street elevations at intersection returns adjacent to proposed pedestrian ramps and other critical locations.**
 - **Identifying deviations from contract documents discovered while verifying existing and as-built elevations and reporting the same to the ENGINEER.**
 - **Establishing locations and elevations of landings, ramps, special shaping areas and other features of pedestrian ramps at intersections.**
 - **Checking survey control points in contract documents and providing a letter, signed by a licensed professional land surveyor, stating whether or not said surveyor:**
 - **Concurs with the survey control points, and**
 - **Accepts their accuracy and correctness, and**
 - **Whether or not the surveyor is willing to use them for construction staking on the project**
- 01110-01 Trench Compaction Testing,** including sampling, laboratory testing, field tests and reports, shall be paid on a lump sum basis. No measurement will be made. Progress payments made for this item will be proportionate to completed work that passes tests in accordance with the Contract Documents. Retests required in failing areas are incidental.
- 01110-02 Subgrade and Subbase Compaction Testing:** Same as 01110-01
- 01110-03 Concrete Maturity Testing for PCC Pavement,** including sampling, laboratory testing, field tests and reports, shall be paid on a lump sum basis. No measurement of this item will be made. Progress payments made for this item will be proportionate to completed work in accordance with the Contract Documents.
- 01110-04 Concrete Pavement Cores, including determining core locations, coring, measuring cores, calculations and reporting shall be paid on a Lump Sum Basis. No measurement of this item shall be made. Full payment for this item shall be made after submittal of report.**
- 01200-01 Traffic Control:** paid on a lump sum basis. The progress payment made for this item will be proportionate with the completion of the traffic control required to complete the Work as set forth in the Contract Documents.

Multiple set-ups of various stages of this project are incidental to the lump sum cost for this item. Lump sum cost includes traffic control measures associated with removing existing pavement markings and placing new pavement markings beyond project construction limitations.

- 01200-10 Temporary Traffic Signals:** paid on a lump sum basis for the installations indicated in the Contract Documents. Prices shall include installation, maintenance and removal. The progress payment made for this item will be proportionate with the completion of the traffic control required to complete the Work as set forth in the Contract Documents.
- 01200-20 Temporary Pavement Markings and Symbols:** paid on a lump sum basis for installations and removals in accordance with the Contract Documents. No measurement will be made. Progress payments will be proportional to the work performed.
- 01200-21 Temporary Roadway Surfaces, HMA and/or PCC, 6-Inch Depth:** paid on an area basis as measured by the ENGINEER. Unit price shall be complete payment to prepare subgrade and construction temporary surfaces over storm sewer and water main trenches. This item also applies for temporary throats at intakes. The CONTRACTOR may elect to use either HMA or PCC for temporary surfaces, depending on availability. Unit price applies for either material. Cold-weather measures, including coverings, required for the construction of PCC surfaces is considered incidental. Removal of temporary surfaces is paid separately.
- 01200-30 Furnish Temporary Precast Concrete Barrier:** paid on a lineal basis, as measured by the ENGINEER. The length furnished shall be the maximum in use on the project at any one time. Barrier furnished in excess of that required for an installation will not be included for measurement.
- 01200-31 Install Temporary Precast Concrete Barrier:** paid on a lineal basis, as measured by the ENGINEER. The length installed shall be the initial length plus the length reinstalled in new positions.
- 01200-40 Furnish Temporary Walkways:** paid on a lineal basis as measured by the ENGINEER. Unit price shall be complete payment to fabricate, transport, install and remove temporary pedestrian walkways. The furnished quantity is the maximum in use on the project at any one time. Walkways furnished in excess of the amount required for a given stage will not be included in the installed quantity.
- 01200-41 Install Temporary Walkways:** paid on a lineal basis as measured by the ENGINEER. Total paid length installed shall be the initial length installed plus the length installed in new positions during subsequent stages.
- 01200-50 Flaggers:** paid on a count basis for each day each flagger was used as **authorized and** counted by the ENGINEER. The Contractor will be paid the unit price per day. A day is considered a minimum of six hours. Flaggers worked between two hours and six hours a day will be considered a half day. Flaggers used for under two hours per day are incidental to item 01200-01.
- 01200-60 Pilot Cars:** paid on a count basis for each day pilot car was used as counted by the ENGINEER. The Contractor will be paid the unit price per day. A day is considered a minimum of six hours. Pilot cars used between two hours and six hours a day will be considered a half day. Pilot cars used for under two hours a day are incidental to item 01200-01.
- 01300-01 Temporary Erosion and Sediment Controls:** paid on a lump sum basis, except silt fence. No measurement will be made. Prices shall include installation, maintenance and removal of the controls. Progress payments made will be proportionate to the work performed.
- 01300-10 Silt Fence:** paid on a lineal basis, as measured by the ENGINEER. Prices shall include installation, maintenance and removal.
- 03100-11 Filter Socks:** paid on a lineal basis as measured by the ENGINEER. The contract quantity anticipates two (2) complete installations in the project area. When approved by the ENGINEER, the replacement of damaged or worn filter socks shall be paid under this item. The unit price shall be complete payment to furnish, install, secure, maintain, remove and dispose of filter socks installed on this project.
- 01300-12 Filter Socks at Storm Sewer Structures:** paid on a per each basis as measured by the

ENGINEER. The contract quantity anticipates two (2) complete installations at all storm sewer intakes and manholes on the project area. When approved by the ENGINEER, the replacement of damaged or work filter socks shall be paid under this item. The unit price shall be complete payment to furnish, install, secure, maintain, remove and dispose of filter socks installed on this project.

- 01300-15 Temporary Seeding and Mulching:** paid on an area basis as measured by the ENGINEER. The contract quantity anticipates three (3) complete reseedings in the project area. When approved by the ENGINEER, the reseeded areas shall be paid under this item. The unit price shall be complete payment to prepare disturbed areas, plus all equipment, materials and labor for temporary seeding. Contract documents will specify the number of temporary seeding areas paid under the watering item. Additional waterings shall be at the CONTRACTOR's expense.
- 01400-01 Clearing and Grubbing:** paid on a lump sum basis for the limits as indicated in the Contract Documents. No measurement will be made of the area or the individual items cleared and grubbed. The loading, hauling and disposal of the materials included in this item are incidental.
- 01400-10 Removal of Existing Pavements, Driveways, Curb, and Gutter:** paid on an area basis. The area paid shall be that area of pavement, driveway and/or curb and gutter removed as measured by the ENGINEER. Integral curb; loading, hauling, and disposal of material; recycling costs, including tipping fees and taxes; and delivery of materials outside normal operating hours of the landfill are incidental. **Contract quantity includes removal of temporary HMA and/or PCC surfaces.**
Paving bricks removed from existing roadways shall remain property of the City of Cedar Rapids. Unit price includes costs associated with hauling material to the Public Works Department storage facility on Bowling Street SW.
- 01400-11 Removal of Existing Sidewalk:** paid on an area basis, based on the area of sidewalk removed as measured by the ENGINEER. Sawcutting and disposal of the sidewalk are incidental.
- 01400-12 Removal of Curbing and Curb and Gutter:** paid on a lineal basis as measured by the ENGINEER. Loading, hauling and disposal of the materials included in this item are incidental.
- 01400-20 Milling of PCC Pavement:** paid on an area basis as measured by the ENGINEER. Removal and disposal of milled material are incidental.
- 01400-21 Milling of HMA Pavement:** paid on an area basis as measured by the ENGINEER. Removal and disposal of milled material, and milling of concrete patches within asphalt pavement, are incidental.
Milled HMA material shall remain property of the City of Cedar Rapids. Unit price includes costs associated with hauling material to the Public Works Department storage facility on Bowling Street SW.
- 01400-22 Sawcutting of Pavement (Full-Depth),** including but not limited to ACC pavement, brick pavement, PCC pavement, driveways, and curb and gutter: paid on a lineal basis as measured by the ENGINEER.
- 01400-30 Removal of Curtain Walls:** paid on a volume basis as measured by the ENGINEER. Backfilling and removal and disposal of the materials included in this item, and sawcutting necessary for removal, are incidental.
- 01400-40 Removal of Storm Sewer Structures,** such as manholes and intakes: paid on a count basis, as counted by the ENGINEER. Sawcutting necessary for removal; loading, hauling and disposal of the materials in this item; and furnishing, placing and compacting backfill are incidental.
- 01400-41 Removal of Storm Sewer and Culvert Pipe** The removal and disposal of driveway culverts greater than 24-inches in diameter, all storm sewer pipe, including flared end sections, and all roadway culverts shall be paid on a lineal basis, as measured by the ENGINEER. Loading, hauling and disposal of materials in this item and furnishing, placing and compacting backfill are incidental.
- 01400-42 Removal of Sanitary Sewer Structures:** Same as 01400-40
- 01400-43 Removal of Sanitary Sewer Pipe:** paid on a lineal basis, as measured by the ENGINEER. Loading, hauling and disposal of materials included in this item, and furnishing, placing and compacting backfill are incidental.

- 01400-50 Abandonment of Storm and Sanitary Sewer Structures:** paid for on a count basis for the size and type specified, as counted by the ENGINEER. Material used to plug manhole openings is incidental.
- 01400-51 Abandonment of Storm and Sanitary Sewer Pipes with Flowable Mortar:** paid on a volume basis of flowable mortar, as measured by the ENGINEER. This item shall include all costs for all labor and material used to fill the pipe and plug pipe ends. Brick, concrete and all other block inserts used to back the flowable mortar are incidental.
- 01400-52 Abandonment of Storm and Sanitary Sewer Pipes by Plugging:** paid on a count basis, as counted by the ENGINEER. This item shall include all costs for labor and material used to plug pipe ends. Brick, concrete, and other block inserts used to back the mortar plug are incidental. Payment will be limited to the mortar used to fill no more than the last two feet of the pipe being abandoned.
- 01400-53 Removals, Miscellaneous, Per Plans:** paid on a lump sum basis for all labor, materials, equipment and effort to perform removals and other associated work in accordance with contract documents.
- 01400-55 Abandonment of Existing Water Main:** paid on a lump sum basis, except as otherwise provided, for all labor, materials equipment and effort required to abandon the existing water main, including the disconnection of existing services in accordance with contract documents. Removal of the existing hydrants and valves shall be paid per Item No. 01400-45 (Removal of Existing Hydrants and Valves). Caps or other fittings installed on the existing water main shall be paid per Item No. 02500-30 (Fittings for Water Distribution System).
- 01400-60 Removal of Fire Hydrant:** paid on a count basis as measured by the ENGINEER. Unit price includes short term on-site storage, followed by delivery to jurisdiction water division OR disposal by Contractor, whichever is applicable. Removal item includes couplings, valves and fittings not reused on project. Capping or plugging hydrant leg, plus repairs to polyethylene encasements and/or tracer wire are incidental. Granular backfill of excavation shall be paid separately.
- 01400-61 Removal of Valves:** paid on a count basis as measured by the ENGINEER. Unit price includes short term on-site storage, followed by delivery to jurisdiction water division OR disposal by Contractor, whichever is applicable. Removal item includes couplings, valves and fittings not reused on project. Capping or plugging hydrant leg, plus repairs to polyethylene encasements and/or tracer wire are incidental. Granular backfill of excavation shall be paid separately.
- 01400-62 Removal of Existing Water Main:** paid on a lineal basis as measured by the ENGINEER. Unit price includes short term on-site storage followed by delivery to jurisdiction water division OR disposal by Contractor, whichever is applicable. Capping or plugging and disposal of miscellaneous fittings, excepting hydrants and valves are incidental.
- 01400-70 Removal of Existing Pavement Markings:** paid on a lump sum cost for all required labor, materials and equipment required to remove existing pavement markings, clean up work areas and properly dispose of removal debris. This item applies for the remove of existing pavement markings on existing roadways within and beyond project construction limits as noted in contract drawings. CONTRACTOR shall make own determination of associated quantities.
- 02000-01 Unclassified Excavation and Embankment,** which shall include boulders up to ½ cubic yards: paid on a volume basis, as indicated in the Contract Documents. No measurement will be made of the volume of unclassified excavation. Additional excavation including unsuitable or unstable material not part of subgrade preparation will be paid at the same unit price as excavation. Embankment compaction and backfilling to the top of slab and/or curbs are incidental.
- If the Contractor or the ENGINEER desires actual measurement of the volume of excavation in lieu of using the Contract quantities, the following shall apply:

1. Either may make such a declaration in writing to the other at any time during the project up to the time of final payment.
2. If such a declaration is not made prior to commencing the clearing and grubbing activities, the ENGINEER will determine the suitability of the best available information pertaining to the existing ground topography in determining the volume of excavation. If acceptable information does not exist, the item will be paid per plan quantities
3. The party desiring the actual measurement shall be responsible for the cost associated with the services required to make such a determination, including both office and field services. This is without regard as to the final measurements as compared to the quantity indicated in the form of proposal.
4. The volume to be paid shall be based on the volume of excavation.
5. The calculation of the actual volume of excavation shall be certified by a Professional ENGINEER or Land Surveyor licensed in the state of Iowa.

02000-02 Strip and Respread Topsoil: paid on a volume basis as indicated in the Contract Documents. No measurement will be made of this item. Loading, hauling, and stockpiling topsoil are incidental.

02000-10 Rock Excavation: paid on a volume basis as measured by the ENGINEER. Removal and offsite disposal of the rock material are incidental. No payment for unclassified excavation will be made for volumes paid as rock excavation.

02000-20 Boulder Removal: paid on a volume basis and measured by the ENGINEER as follows:

1. Boulders greater than $\frac{1}{2}$ cubic yards shall be handled separately from the unclassified excavation and measured individually in the transport vehicle or by the volume of the heap or pile and paid as Boulder Removal
2. Boulders between 12-inches in diameter and $\frac{1}{2}$ cubic yard in size shall be handled separately and removed from the project site. Boulders within this size range will be measured and paid as unclassified excavation, with no payment as Boulder Removal.
3. Boulders smaller than 12-inches in diameter shall be handled and deposited in a final position in a manner normal to unclassified excavation and the Contract Specifications. Boulders within this size range will be measured and paid as unclassified excavation, with no payment as Boulder Removal.
4. Excavation for the purpose of burying boulders and offsite disposal of boulders are incidental.

If there is no bid item for Boulder Removal, payment for Boulder Removal will be made at the unit price for Trench Excavation Through Rock.

02000-30 Borrow: paid on a volume basis per plan quantities as indicated in the Contract Documents. No measurement will be made of borrow volume. The quantity to be paid will be that which is indicated in the Contract Documents.

If the Contractor or the ENGINEER desires actual measurement of the volume of borrow in lieu of using the Contract quantities, the following shall apply:

1. Either may make such a declaration in writing to the other at any time during the project up to the time of final payment.
2. If such a declaration is not made prior to commencing the clearing and grubbing activities, the ENGINEER will determine the suitability of the best available information pertaining to the existing ground topography in determining the volume of borrow. If acceptable information does not exist, the item will be paid per plan quantities.
3. The party desiring the actual measurement shall be responsible for the cost associated with the services required to make such a determination, including both office and field services. This is without regard as to the final measurements as compared to the quantity indicated in the form of proposal.
4. The calculation of the actual volume of borrow shall be certified by a Professional ENGINEER or Land Surveyor licensed in the state of Iowa.

02000-40 Dispose Unclassified Excavation Off-site Paid on a volume basis measured by the ENGINEER. Placing the material in the transport vehicle, hauling, placing the material in the offsite area, and

landfill/dump fees are incidental.

- 02100-01 Subgrade Preparation:** paid on an area basis as set forth in the Contract Documents. No measurement will be made for this item. Disking and aeration of soil and/or furnishing and applying water, as required to obtain proper moisture content for compaction; proof roll testing as required by the Contract Documents; and rework and retesting of areas and materials where failing tests occur are incidental.
- 02100-10 Subgrade Stabilization With Suitable Soil:** paid on a volume basis. The volume paid shall be that volume of the void left following the completion of excavation of unsuitable or unstable material as measured by the ENGINEER. Excavation and compaction of placed material, incorporation of the unsuitable or unstable material in the project, and disposal of the material offsite are incidental.
- 02100-20 Subgrade Stabilization With Crushed Rock Material:** same as 02100-10.
- 02100-30 Engineering Fabric for Subgrade Stabilization:** paid on an area basis based on the net area covered, as measured by the ENGINEER. No payment will be made for the required overlap.
- 02100-35 Geotextile:** same as 02100-30.
- 02100-40 Special Subgrade Treatment:** paid on a weight basis of the treatment material placed, as determined by the ENGINEER from certified weigh receipts. This item will be paid in addition to subgrade preparation when special subgrade treatment is required.
- 02100-50 Granular Subbase:** paid on an area basis for the specified design thickness, based on the quantity as set forth in the Contract Documents. Water required for moisture conditioning of the material is incidental.
- 02100-60 Special Backfill:** paid on an area or weight basis, based on the quantity as set forth in the Contract Documents. Special backfill on a weight basis will be paid according to weight receipts provided to the ENGINEER. Water required for moisture conditioning of the material is incidental.
- 02100-70 Granular Shoulder Preparation:** paid on a lineal foot basis as measured by the ENGINEER. Blading over the foreslope both the soil excavated from the trench and any material of the shoulder lying above the proposed finished shoulder line, and hauling offsite, as required, is incidental. Placement of granular shoulder material is incidental.
- 02100-75 Earth Shoulder Preparation:** Same as 02100-70, except topsoil, not granular shoulder, is incidental.
- 02200-01 Trench Excavation Through Rock** for installation of utility systems: paid on a volume basis as measured by the ENGINEER. The width used for the basis of measurement and payment shall be the pipe envelope width as established in the Contract Documents. Disposal of the material offsite and suitable backfill replacement of rock excavation are incidental.
- No payment for unclassified excavation will be made for volumes paid as rock excavation. Additional bedding material required due to rock removal is incidental to the Work.
- If there is no bid item for Trench excavation through rock, payment for trench excavation through rock will be made as extra work at \$50.00 per cubic yard.
- 02200-10 Trench Stabilization:** paid on a volume and/or weight basis as set forth on the bid form, as measured by the ENGINEER. The width used for the basis of measurement and payment shall be the pipe envelope width as established in the Contract Documents. If paid on a weight basis, ENGINEER will determine pay quantity from weight receipts for material placed as authorized. Incorporation of the unsuitable or unstable material in the project in accordance with the Contract Documents and/or disposal of the material offsite are incidental. No payment will be made for additional width and depth beyond the maximum required in Section 02200.
- 02200-20 Granular Backfill:** paid on a volume basis. The width used for the basis of measurement and payment shall be the pipe envelope width as established in the Contract Documents. Payment depth shall be measured from the top of the pipe bedding to the bottom of the granular subbase for roadways or to 1.0 foot from surface, whichever is applicable. Disposal of material removed is incidental.
- 02200-30 Drainable Backfill:** Same as 02200-20

- 02250-01 Casing Pipe - Boring and Jacking:** paid on a lineal basis as measured by the ENGINEER. The following are incidental: Excavation of boring and receiving pits; end caps on the casing pipe; backfill and compaction of the boring and receiving pits in accordance with the Contract Documents; and removal and disposal of any excess, unsuitable, or unstable material from the boring and jacking operation.
- Casing pipe that has been partially installed but not completed due to refusal when encountering rock or other obstacle will be paid for at the unit price for the item. In this case, filling and capping the casing, plus backfill of the receiving and boring pits shall be paid by Contract Change Order.
- No payment will be made for casing pipe installed not in conformance with the Contract Documents.
- 02250-10 Carrier Pipe Inside Casing Pipe:** paid on a lineal basis as measured by the ENGINEER. Pipe supports and backfill provided and placed in the casing pipe (if required) are incidental.
- 02250-20 Carrier Pipe – Boring and Jacking:** paid on a lineal basis as measured by the ENGINEER. The following are incidental: Excavation of boring and receiving pits; end caps on the carrier pipe; backfill of the boring and receiving pits in accordance with the Contract Documents; and removal and disposal of any excess, unsuitable, or unstable material from the boring and jacking operation.
- Carrier pipe that has been partially installed but not completed due to refusal when encountering rock will be paid for at the unit price for the item. In this case, capping and filling of the carrier pipe, plus backfill of the receiving and boring pits will be paid by Contract Change Order.
- Carrier pipe installed but not in conformance with the Contract Documents will not be paid for.
- 02250-30 Casing Pipe – Open Cut Installation:** paid on a lineal basis as measured by the ENGINEER.
- 02300-01 Sanitary Sewer Gravity Main:** paid on a lineal basis for each size and type as set forth in the Contract Documents, as measured by the ENGINEER. For pipe sizes up to and including 24-inch diameter, the measurement will be made between the center of structures, or from the center of a structure to the limits of a carrier pipe installation as shown on the plans. For pipe sizes greater than 24-inch diameter, the measurement will be made between the inside walls of structures, or from the inside wall of a structure to the limits of a carrier pipe installation as shown in the Contract Documents. Couplings for connections between dissimilar pipe materials are incidental.
- 02300-10 Sanitary Sewer Services:** paid on a count basis, as counted by the ENGINEER, for each size as set forth in the Contract Documents. All taps, pipe fittings, wyes, connections and piping to the public right-of-way line are incidental.
- 02300-12 Sanitary Sewer Service Reconnection:** paid on a count basis for each size as set forth in the Contract Documents, as counted by the ENGINEER. All taps, pipe fittings, wyes, connections and piping up to a distance of 8 feet from the sanitary sewer main are incidental.
- 02300-14 Sanitary Sewer Service Risers:** paid on a lineal basis for each size and type as set forth in the Contract Documents, as measured by the ENGINEER. Taps, pipe fittings, and connections are not included within this item.
- 02300-20 Sanitary Sewer Manholes:** paid on a count basis for the size and type as set forth in the Contract Documents, as counted by the ENGINEER. Chimney seal installation is incidental.
- 02300-30 Sanitary Sewer Force Main:** paid on a lineal basis for each size as set forth in the Contract Documents, as measured by the ENGINEER. The measurement will be made between the inside walls of structures.
- 02300-40 Sanitary Sewer Point Repair:** paid on a linear basis for each size as indicated in the Contract Documents, as measured by the ENGINEER. All excavation, couplings, connections and fittings are incidental. Surface restoration and granular backfill will be paid separately.
- 02300-50 Connection to Existing Sanitary Sewer Manhole:** paid on a count basis for the connection(s) as set forth in the Contract Documents, as counted by the ENGINEER. The necessary excavation, cutting, grouting, two foot pipe stub, concrete collar, and flexible connection outside the manhole are incidental.

- 02300-60 Chimney Seals**, both interior and exterior: paid on a count basis for the type as set forth in the Contract Documents, and as measured by the ENGINEER. Extension skirts necessary for installation are incidental.
- 02310-01 Sanitary Sewer Lining**: paid on a lineal basis for each size and type as set forth in the Contract Documents, as measured by the ENGINEER. Pre-lining television investigation; pre-lining smoke/dye test investigation; root sawing; testing according to Section 1110; post-lining television investigation; bypass pumping; submittals; and verification of active services are incidental.
- 02310-10 Trimming of Protruding Sanitary Sewer Services Prior to Sewer Lining**: paid on a count basis, as counted by the ENGINEER.
- 02310-20 Sanitary Sewer Service Reinstatement After Sewer Lining**: paid on a count basis for each size as set forth in the Contract Documents. The quantity paid will be based upon the number of service reconnections counted by the ENGINEER.
- 02320-01 Sanitary Manhole Lining (Diameter per Plans)**: Paid on a per vertical foot (VF) depth of manhole for each diameter of manhole. Quantity paid shall be measured by the ENGINEER. This item includes cleaning, void repair, removal of existing steps, installation of new steps, installation of manhole liner, clean-up and associated work.
- 02320-02 Sanitary Manhole Lining, Spray-on Only (Diameter per Plans)**: Paid on a per vertical foot (VF) depth of manhole for each diameter of manhole. Quantity paid shall be measured by the ENGINEER. This item includes cleaning, void repair, removal of existing steps, installation of new steps, installation of manhole liner, clean-up and associated work.
- 02400-01 Storm Sewer Main**: paid on a lineal basis for each size and type as set forth in the Contract Documents. Measurement will be made from the inside of structure walls or from the end of installation to the inside of a structure wall The quantity paid will be as measured by the ENGINEER. The measurement will not include structures or flared end sections. Engineering fabric and miscellaneous concrete, such as used for collars, are incidental.
- 02400-10 Subdrain**: paid on a lineal basis, as measured by the ENGINEER. The measurement will be made between the interior walls of structures. Engineering fabric, drainable backfill, and connection to existing storm sewer system are incidental. **Elbows, couplings, collars and other fittings required to install subdrain per plans are incidental.**
- 02400-11 Subdrain Service Tee Stubs**: paid on a count basis, as counted by the ENGINEER. Excavation, backfill and new service pipes up to 4 feet long with an end cap are incidental.
- 02400-12 Subdrain Service Connections**: paid on a count basis, as counted by the ENGINEER. Tee connection to subdrain line; excavation, service pipe installation and backfill to the public right-of-way line; and connection to the existing service line, including fittings are incidental.
- 02400-13 Subdrain Cleanouts**: paid on a count basis for each type and size indicated in the Contract Documents, as counted by the ENGINEER.
- 02400-20 Culvert Pipe**: paid on a lineal basis for each size and type as set forth in the Contract Documents, as measured by the ENGINEER. The measurement will not include structures or flared end sections. Engineering fabric, miscellaneous concrete, and pipe ties are incidental.
- 02400-30 Flared End Sections**: paid on a count basis for each size and type as set forth in the Contract Documents, as counted by the ENGINEER. Pipe guards and toe walls are incidental.
- 02400-40 Storm Sewer Manholes**: paid on a count basis for each size and type as set forth in the Contract Documents, as counted by the ENGINEER.
- 02400-45 Storm Sewer Junction Boxes**: same as 02400-40.
- 02400-50 Storm Sewer Intakes**: paid on a count basis for each type as set forth in the Contract Documents, as counted by the ENGINEER. Pavement insert areas and boxouts, including flared areas behind the curb, are incidental.
- 02400-60 Connection to Existing Storm Sewer Structures**: paid on a count basis for each type and size as set forth in the Contract Documents, as counted by the ENGINEER. Necessary excavation, cutting, grouting, pipe stub, and concrete collar are incidental.

- 02400-70 Concrete Anchors for Plastic Pipe:** paid on a count basis, as counted by the ENGINEER.
- 02500-01 Water Main:** paid on a lineal basis, not including fittings, for each type and size as set forth in the Contract Documents, as measured by the ENGINEER. Polyethylene wrap and tracer wire are incidental.
- 02500-10 Tapping Sleeve:** paid on a count basis for each type and size as set forth in the Contract Documents, as counted by the ENGINEER. Polyethylene wrap and other piping materials required for installation are incidental.
- 02500-11 Tapping Valve and Box:** paid on a count basis for each type and size as set forth in the Contract Documents, as counted by the ENGINEER.
- 02500-20 Furnish and Install Valve and Box:** paid on a count basis for each type and size as set forth in the Contract Documents, as counted by the ENGINEER. Polyethylene wrap, other piping materials required for installation, and adjustment to finished grade are incidental
- 02500-21 Installation of Owner-supplied Valves and Boxes:** paid on a count basis for each type and size installed. Material supplied by the Owner shall be as indicated in the Contract Documents. Pick-up and delivery of material to the jobsite; polyethylene wrap; and adjustment of valve boxes to grade are incidental.
- 02500-30 Fittings for Water Distribution Systems:** paid on a weight basis. The quantity paid shall be fittings as counted by the ENGINEER and converted to a weight basis in accordance with weights for compact fittings as published in AWWA C153. Nuts, bolts, retainer glands (**mega-lugs**), and restraining rods are incidental. **Plugs for abandoning water main shall be paid per this item.**
- 02500-31 Blow-off Assemblies:** paid on a count basis for each type and size as set forth in the Contract Documents. The quantity paid shall be as indicated in the Contract Documents. Polyethylene wrap and other piping materials required for installation are incidental.
- 02500-40 Water Services:** paid on a count basis for each size as set forth in the Contract Documents. The quantity paid shall be based upon the number of services as counted by the ENGINEER. Disinfection, all pipe, taps, corporation valve, stop box, pipe fittings to the public right-of-way line, plus materials and effort required for connection new services to existing services, if applicable, are incidental.
- 02500-41 Water Services Reconnection:** paid on a count basis for each size as set forth in the Contract Documents. The quantity paid shall be based upon the number of service reconnections as counted by the ENGINEER. Disinfection, corporation valve, pipe fittings, connections, and piping up to a distance of 8 feet from the water main are incidental.
- 02500-50 Furnish and Install Fire Hydrant:** paid on a count basis for each type and size as set forth in the Contract Documents. The quantity paid shall be as indicated in the Contract Documents. Hydrant gate valve, mainline tee, valve box, material delivery, other piping materials required for installation, and rotating hydrant for proper direction of nozzles are incidental.
- 02500-51 Install Fire Hydrant:** Installation of Owner supplied fire hydrants shall be paid on a count basis for each type and size as set forth in the Contract Documents. Material furnished by Owner shall be as indicated in the Contract Documents. **Unit price includes picking up City-furnished material at designated site and delivery same to project site.** Other piping materials required for installation and rotating hydrant for proper direction of nozzles are incidental.
- 02500-52 Air Release Assemblies:** paid on a count basis for each type and size as set forth in the Contract Documents. Polyethylene wrap and other piping materials required for installation are incidental.
- 02500-60 Disinfection and Hydrostatic Testing:** paid on a lump sum basis. This item includes furnishing all materials, labor, and equipment to disinfect the water main and re-disinfect if required, and perform the hydrostatic testing of the completed water main. **Lump sum price includes installation and removal of temporary hydrants, blowoffs or other fixtures,** corporation stops, copper tubing, hoses, pumps, gauges and other equipment required for disinfection and hydrostatic testing. Also included are hoses, piping and accessories necessary to conduct the chlorinated water to a proper disposal point. **Additional materials and effort required to protect roadway subgrades during flushing of water mains is considered incidental.**

- 02600-01 Revetment:** paid on the basis of the installation area as measured by the ENGINEER. Excavation associated with the installation of the revetment, disposal of the excavated material, and engineering fabric furnished and installed are incidental.
- 02600-10 Gabions:** paid on a volume basis for rock placed into gabion baskets, as measured by the ENGINEER. Gabion baskets and all material to tie them together; excavation associated with the installation of the gabions; disposal of the excavated material; and engineering fabric furnished and installed are incidental.
- 02600-20 Adjustment of Existing Structures:** paid on a count basis for each type indicated in the Contract Documents, as counted by the ENGINEER. Grout used for repair and sealing is incidental.
- 02600-21 Storm or Sanitary Sewer Structure Repair:** paid on a count basis for the type of repair as specified in the Contract Documents, as counted by the ENGINEER. The removal and disposal of unserviceable material is incidental.
- 02600-22 Castings, Furnish and Install:** paid on a count basis for the type as set forth in the contract documents, and as measured by the ENGINEER. The removal and disposal of existing castings is incidental.
- 02600-23 Valve Box Adjustment:** paid on a count basis for the type as set forth in the contract documents, and as measured by the ENGINEER.
- 02600-30 Agricultural Drain Tile:** paid on a linear basis, as measured along the pipe centerline by the ENGINEER. Couplings necessary for reconnection with existing agricultural drain tile are incidental.
- 02600-40 Flowable Mortar and Grout:** paid on a volume basis as measured by the ENGINEER. This item shall include all costs for material and labor for placement. Placement of bulkheads as required by the Contract Documents is incidental.
- 02600-50 Cast-in-Place Concrete** for repairs, thrust blocks, encasements, and structures shall be paid on a volume basis, as measured by the ENGINEER. The following items are incidental: Furnishing and installation of reinforcing steel and welded wire fabric; concrete admixtures; filling and sealing joints; furnishing, installing, and removing forms, ties, and falsework; and linseed oil curing compound, when required by the calendar date of installation (November 1-February 28) per Section 2700.
- 02700 all For All Portland Cement Concrete Bid Items (Section 02700)**
- Payment for Cold Weather Protection:** paid within the contract period milestone and completion dates from March 15 to November 15. Payment will only be made from November 15 to March 15 if the work is ordered by the ENGINEER and within the contract dates. Payment will be at the following set rates, as measured by the ENGINEER:
- Heating Water for Concrete Mix: **\$ 5.00** per cubic yard
- Protection of Finished Concrete (covering all necessary methods): For temperatures below 25° F, payment will be \$4.00 per SY; for temperatures 25 to 31° F, payment will be **\$2.00** per SY; for temperatures 32 to 35° F, payment will be **\$1.00** per SY.
- 02700 all Incidental Items to all Portland Cement Concrete Bid Items (Section 02700)**
- | | |
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| 1. Reinforcement. | 5. Inserts and boxouts inside the curb line. |
| 2. Jointing, including expansion material. | 6. Curing compound applied to the pavement. |
| 3. Load transfer devices. | 7. Formwork and falsework. |
| 4. Keyways and headers. | 8. Cleaning finished concrete surface. |
- 02700-01 Portland Cement Concrete Pavement, Non-Reinforced:** paid on an area basis as measured by the ENGINEER for the PCC class and thickness(es) indicated in the Contract Documents. Inserts and boxouts within the roadway curb line will be measured and paid as Portland cement concrete pavement. **If contract documents specify a pavement thickness incentive/disincentive, Iowa D.O.T. Standard Specification 2301.05A, current version, applies.**
- 02700-02 Portland Cement Concrete Pavement, Reinforced:** same as 02700-01, except furnishing and installation of reinforcement are incidental.

- 02700-10 Portland Cement Concrete Pavement Widening:** paid on an area basis as measured by the ENGINEER for the PCC class and thickness(es) as indicated in the Contract Documents. **If contract documents specify a pavement thickness incentive/disincentive, Iowa D.O.T. Standard Specification 2301.05A, current version, applies.**
- 02700-20 Portland Cement Concrete Driveway:** same as 02700-10
- 02700-30 Portland Cement Concrete Pavement Repair** (partial-depth and full-depth repairs): paid on an area basis as measured by the ENGINEER for the thickness(es) as indicated in the Contract Documents. Sawing and removing existing pavement and disposing unsuitable material are incidental.
- 02700-35 Portland Cement Concrete Joint Repair:** paid on an area basis for the joint type(s) as measured by the ENGINEER. Removal of existing materials, sawcutting, and sawing and sealing of finished joints are incidental, unless a separate pay item exists.
- 02700-36 Portland Cement Concrete Curb Repair:** paid on a linear basis for the type of repair identified in the Contract Documents. Unit price shall include removal of existing curbing, plus excavation and all costs associated with constructing replacement curbing. Granular subbase, if required, will be paid separately. Full depth sawcutting for removal is incidental.
- 02700-40 Portland Cement Concrete Overlay, Placement Only:** paid on an area basis as measured by the ENGINEER, as indicated in the Contract Documents. Bonding compound is incidental.
- 02700-41 Portland Cement Concrete Overlay, Furnish Only:** paid on a volume basis as indicated in the Contract Documents, based on a count of batches incorporated in the Work, measured by ENGINEER.
- 02700-50 Surface Preparation for PCC Overlay:** paid on an area basis as measured by the ENGINEER. Sand blasting and/or shot blasting material are incidental.
- 02700-60 Portland Cement Concrete Curb and Gutter:** paid on a lineal basis as measured by the ENGINEER for the widths as indicated in the Contract Documents.
- 02700-70 Portland Cement Concrete Sidewalk:** paid on an area basis as measured by the ENGINEER for the thickness(es) as indicated in the Contract Documents. This item shall not include sidewalk within driveway limits, if there is a bid item for Portland Cement Concrete Driveway.
- 02700-75 Portland Cement Concrete Sidewalk Ramp:** paid on an area basis as measured by the ENGINEER for the type(s) as indicated in the Contract Documents. **This item applies for pedestrian ramps nominally between front edges of City sidewalk and the back of curbs. The unit price shall be a complete payment for grading, materials, labor and effort to construct pedestrian ramps. The preparation of the curb lip shall be performed during pavement construction, by grinding, or other approved means. Furnishing and placing detectable warning panels (DWPs) on pedestrian ramps shall be incidental to this item. Cutting or trimming DWPs, or furnishing radius panels to install the same in accordance with details in the contract drawings is incidental. Grinding curb lips is incidental, unless a separate bid item for same is provided.**
- 02700-76 Portland Cement Concrete Ramp Curb Cut, 18" - 30":** paid on a lineal basis as measured by the ENGINEER. Sawcutting, removal, and disposal of pavement and curb are incidental.
- 02700-77 Portland Cement Concrete Ramp Curb Cut, 31" – 42":** same as 02700-76,
- 02700-80 Portland Cement Concrete Pedestrian Median Crossover:** paid on an area basis as measured by the ENGINEER.
- 02700-81 PCC Crosswalk, Colored, Depth per Plans:** paid on an area basis as measured by the ENGINEER. The unit price shall be complete payment for all labor, materials, equipment and effort necessary to construct colored PCC crosswalks per plans. The preparation of samples for review by the ENGINEER is considered incidental.
- 02750-01 Hot Mix Asphalt Concrete Pavement:** paid on an area basis as measured by the ENGINEER for the HMA type and thickness(es) as indicated on the contract documents. Final payment will adjusted in accordance with the Quality Index (Q.I.), per Technical Specification Section 01110. Asphalt

cement is incidental.

- 02750-10 Hot Mix Asphalt Concrete Widening:** same as 02750-01.
- 02750-20 Hot Mix Asphalt Concrete Driveway:** paid on an area basis as measured by the ENGINEER for the HMA type and thickness(es) as indicated in the Contract Documents. Asphalt cement is incidental.
- 02750-21 HMA Sidewalk, Per Plans:** paid on an area basis as measured by the ENGINEER. The unit price shall be complete payment to prepare sub-grade, and to furnish, place, compact and finish HMA sidewalk as per plans.
- 02750-30 Hot Mix Asphalt Concrete Trails:** same as 02750-20.
- 02750-40 Hot Mix Asphalt Concrete Pavement Repair:** paid on a weight and/or area basis as measured by the ENGINEER as indicated in the Contract Documents. Asphalt cement, sawing out existing pavement, and removal and disposal of existing material are incidental.
- 02750-50 Hot Mix Asphalt Concrete Overlay:** paid on a weight basis as measured by the ENGINEER for the courses indicated in the Contract Documents. Asphalt cement is incidental.
- 02750-60 Hot Mix Asphalt Concrete Curb:** paid on a lineal basis as measured by the ENGINEER.
- 02750-70 Crack Control and Grade Control Fabric:** on a linear and/or area basis as measured by the ENGINEER for the type(s) as indicated in the Contract Documents. Surface preparation is incidental.
- 02750-80 Tack Coat:** paid on a volume basis as measured by the ENGINEER for the undiluted emulsified asphalt. No adjustment for volumetric variances due to temperature will be made.
- 02800-01 Cleaning and Preparation of Streets:** paid on an area basis as indicated in the Contract Documents. No measurement will be made of this item. All effort required to clean and prepare streets for pavement resurfacing is incidental.
- 02800-10 Hot Mix Asphaltic Concrete, Miscellaneous** used for wedges, walks, detours, runarounds, etc. shall be paid on a weight basis. The quantity paid shall be as indicated on weight receipts provided to the ENGINEER. Tack coat is incidental.
- 02800-20 Portland Cement Concrete Pavement Grinding and Profiling:** paid on an area basis as measured by the ENGINEER. Profilometer testing and removal and disposal of slurry resulting from grinding operations are incidental.
- 02800-30 Joint and Crack Routing and Sealing, All Classes:** paid on a lineal basis as measured by the ENGINEER. Cleaning joint, including routing, water blasting, and sand blasting; backer rod; and sealant are incidental.
- 02800-37 Survey Monument Adjustment:** paid on a count basis as counted by the ENGINEER for each type indicated in the Contract documents. Grout used for repair and sealing is incidental.
- 02800-40 Aggregate Surfacing** for alleys, drives, and roadways shall be paid on a weight basis for the material placed, as determined by the ENGINEER from certified weight receipts.
- 02800-50 Portland Cement Concrete Pavement Cracking and Sealing:** paid on an area basis as measured by the ENGINEER. Curb and gutter sections that are separated from existing pavement by sawcut will not be included for payment under this item. Application of water to pavement to improve visibility of cracking pattern is incidental.
- 02800-60 Bituminous Seal Coat, Binder Bitumen:** paid on a volume basis as measured by the ENGINEER from field measurements of distributors or from tank cars.
- 02800-61 Bituminous Seal Coat, Cover Aggregate:** paid on a weight basis as determined by the ENGINEER from certified weight receipts furnished by the Contractor.
- 02800-70 Grinding of Curb:** paid on a lineal basis as measured by the ENGINEER. Measured grinding length includes flares from curb lip to top of full curb.
- 02850-01 Pavement Markings, Painted:** paid on a lineal basis. Based on the length measured by the ENGINEER and converted to 4-inch width equivalents.
- 02850-10 Pavement Markings, Polymer Tape:** same as 02850-01.
- 02850-20 Pavement Symbols, Painted:** paid on a count basis as counted by the ENGINEER.

- 02850-30 Pavement Symbols, Polymer Tape:** same as 02850-20.
- 02900-01 Imported Topsoil (contingency):** paid on a volume basis as measured by the ENGINEER. **Use of this item shall be specifically approved by the ENGINEER. Contract quantity is an estimated quantity for bidding purposes only. Payment shall be made only for authorized quantities of imported topsoil furnished and placed.**
- 02900-03 Water (metered)** for seeding or sodding shall be paid based on the metered quantity of flow measured by the meter supplied by the water department, as measured by the Water Department and provided to the ENGINEER.
- 02900-10 Seeding, Fertilizing, and Mulching:** paid on an area basis as measured by the ENGINEER. Repair of adjacent areas disturbed by seeding, fertilizing, and mulching operations; seedbed preparation; weeding; seeding and mulching; and fertilizing and lime application are incidental. If a bid line item is not provided for watering, watering is incidental.
- 02900-11 Hydroseeding:** paid on the basis of the area seeded as measured by the ENGINEER. Repair of adjacent areas disturbed by seeding, fertilizing, and mulching operations; seedbed preparation; weeding; seeding; and fertilizing and lime application are incidental. If a bid line item is not provided for watering, watering is incidental.
- 02900-12 Hydroseeding With Liquid Mulch Binder:** paid on an area basis as measured by the ENGINEER. Repair of adjacent areas disturbed by seeding, fertilizing, and mulching operations; seedbed preparation; seeding; and fertilizing and lime application are incidental. If a bid line item is not provided for watering, watering is incidental.
- 02900-13 Watering, Per Application:** paid on a per each basis up to contract quantity. **Contract quantity includes a specified number of waterings of temporary seeding areas and of permanent seeding areas. Unit price per application includes all water, mobilization, equipment and labor to apply water to seeded areas in accordance with contract documents. Watering shall be authorized by the ENGINEER.**
- 02900-30 Grading and Seeding:** paid on an area basis as measured by the ENGINEER. Stripping vegetation; fertilizing; watering; grading and shaping; seedbed preparation; and seeding are incidental. If a bid line item is not provided for watering, watering is incidental. Where indicated in the Contract Documents, this item applies for regrading of areas between streets and sidewalks for drainage.
- 02900-40 Wood Excelsior Mat:** paid on the basis of the net area covered, as measured by the ENGINEER. No payment will be made for the required overlap. Wire staples are incidental.
- 02900-50 Jute Mesh:** paid on an area basis based on the net area covered as measured by the ENGINEER. No payment will be made for the required overlap. Stakes are incidental.
- 02905-01 Imported Topsoil –** Same as 02900-01
- 02905-03 Water (metered) –** Same as 02900-03
- 02905-20 Sodding:** paid on an area basis as measured by the ENGINEER. Finish grading, repair of adjacent areas; sod bed preparation; fertilizing; and staking are incidental. If a bid line item is not provided for watering, watering is incidental.
- 02910-01 Plantings, furnishing and installation:** paid on a lump sum basis as indicated in the Contract Documents. No separate measurement of plantings will be made. Watering is incidental.
- 02920-01 Segmental Concrete Block Retaining Wall:** paid on an area basis (wall face measured from the bottom course below ground elevation to the top of the wall) as measured by the ENGINEER. Excavation and foundation soil preparation, base leveling pad, and geogrid are incidental.
- 02950-01 Fencing:** paid on a lineal basis for the type(s) indicated in Contract Documents, as measured by ENGINEER. Brace post assemblies, common earth excavation, electrical grounds, and barbed wire are incidental.
- 02950-10 Gates:** paid on a count basis for type(s) indicated in the Contract Documents, as counted by ENGINEER.
- 16570-01 Traffic Signal Controllers:** paid on a count basis as indicated in the Contract Documents. No measurement of this item will be made. **This item applies for revision to or replacement of controller modules in existing controller cabinets.** Load switches and other plug-in components

located in the controller cabinet are incidental.

- 16570-02 Traffic Signal Cabinets (Furnish and Install):** Paid on a count basis as indicated in the Contract Documents. No measurement of this item will be made. Unit price includes shop drawing approval, fabrication, transportation to project site, installation and testing. Concrete footing shall be paid separately. Anchor bolts are incidental.
- 16570-03 Traffic Signal Cabinet (Install Only):** paid on a count basis as indicated in the Contract Documents. No measurement of this item will be made. This item applies for installation of Owner-supplied traffic signal cabinets. Unit price includes all labor, equipment and materials required to transport cabinet to project site, then to install and test. Concrete footing shall be paid separately. Anchor bolts are incidental.
- 16570-10 Traffic Signal Heads:** paid on a count basis as indicated in the Contract Documents. No measurement of this item will be made.
- 16570-20 Traffic Signal Power Supplies** – Same as 16750-10
- 16570-30 Traffic Signal Handholes:** paid on a count basis for the material type(s) as indicated in the Contract Documents, as measured by the ENGINEER. Excavation and backfill, aggregate base, and conduit access are incidental.
- 16570-31 Traffic Signal Junction Box:** Same as 16570-30.
- 16570-40 Wires and Cables:** paid on a lineal basis for the type(s) as indicated in the Contract Documents, as measured by the ENGINEER. Trenching and backfill are incidental.
- 16570-41 Fiber Optic Cable (Furnish and Install):** paid on a linear basis for the type(s) indicated in the Contract Documents as measured by the ENGINEER. Unit price shall be complete payment to furnish specified cable and to install same in conduit and/or handholes. Conduit, handholes, terminations and splices shall be paid separately.
- 16570-42 Fiber Optic Cable (install only):** paid on a linear basis for the type(s) indicated in the Contract Documents as measured by the ENGINEER. Unit price shall be complete payment to install Owner-supplied cable in conduit and/or handholes. Conduit, handholes, terminations and splices shall be paid separately.
- 16570-43 Fiber Optic Cable, Terminations:** paid on a count basis as indicated in Contract Documents and/or as measured by the ENGINEER. Unit price shall be complete payment for terminating fiber optic cable including, but not limited to, fanout kits, breakout kits, connectors, patch cords, mechanical terminators, heat cured or epoxy terminations, factory pigtails, couplers, trays, shrink tube, termination housing plus all other labor, equipment and materials required for proper fiber termination.
- 16570-44 Fiber Optic Cable, Splices:** paid on a count basis as indicated in Contract Documents and/or as measured by the ENGINEER. Unit price shall be complete payment for permanent fusion splices including, but not limited to, splice trays, splice enclosures, heat shrink tubing, buffer tubing, patch cords, automatic splicer device, termination splice quality testing and documentation plus all other labor, equipment and materials required to complete splices in place.
- 16570-50 Conduit:** paid on a lineal basis for the size(s) and type(s) as indicated in the Contract Documents, as measured by the ENGINEER. Measurement will be made from the inside of structure walls or to the stubs of footings and bases. Trenching and backfill are incidental.
- 16570-60 Traffic Signal Poles:** paid on a count basis for the size(s) and type(s) as indicated in the Contract Documents. No measurement of this item will be made. Conduit supports, ground wires, and breaker boxes are incidental.
- 16570-70 Concrete Footings and Bases:** paid on a count basis for the size(s) and type(s) as indicated in the Contract Documents. No measurement of this item will be made. The following items are incidental: Furnishing and installation of reinforcing steel and anchor bolts; concrete admixtures; joint materials; furnishing, installing, and removing forms, ties, and falsework; conduit access and stubs; and excavation, including exploratory for existing utilities, and backfill.

- 16570-80 Vehicle Detector Loops:** paid on a count basis for the size and type indicated in the Contract Documents, as counted by the ENGINEER. Sawcutting, sealing, connection to existing controller, and testing are incidental.
- 16570-81 Vehicle Detector Loops (Replacements):** paid on a count basis for the size and type indicated in the Contract Documents, as counted by the ENGINEER. Unit price shall be complete payment to remove existing loop cabling back to the handhole, then to reinstall loop after roadway construction is completed. Sawcutting, sealing, connection to new or existing controller and testing are incidental.
- 16570-82 Wireless Detection System, Per Plans (Furnish and Install):** paid on a count basis for the type(s) indicated in the Contract Documents, as counted by the ENGINEER. Unit price shall be complete payment to furnish, install, connect, calibrate and testing wireless detection equipment as specified.
- 16570-83 Intersection Detection System, Per Plans (Furnish and Install):** paid on a lump sum basis. Lump sum price shall be complete payment to furnish and install a video-based detection system in accordance with Contract Documents.
- 16570-90 Traffic Signal, by Location, per Plans:** paid on a lump sum price, by location. Lump sum price shall include all labor, equipment, materials and effort required to complete traffic signalization work in accordance with contract documents, including removal of existing equipment, footings and handholds where indicated. The lump sum price includes installation of owner-supplied materials. The CONTRACTOR shall be responsible to pick up said material at the Cedar Rapids City Services Facility and shall deliver the same to the project site. Costs associated with conforming to project staging shall be considered incidental.
- 16570-95 Permanent Traffic Signs, with Posts, per Plans:** paid on a unit price basis. Unit price basis shall be complete payment to furnish and install signs and sign posts in accordance with contract documents.

PART 2 PRODUCTS This section not used.

PART 3 EXECUTION This section not used.

END OF SECTION 01025