

SECTION 01650

MEASUREMENT AND PAYMENT PROCEDURES

PART 1 – Description.

All work completed under this Contract will be measured by the Engineering according to the bid items and to the construction drawings. Units of measurement and dimensions will be shown in these specifications.

1.01 Payment

A. Progress payments will be processed in accordance with the following schedule.

Cut-Off Date

Date of Submittal

Submit pay requests to the City by the dates of submittal listed above.

- B. Owner will make progress payments as defined in Article 5 of the Agreement, on the forms provided by the Engineer.
- C. If the Contractor elects to enter into a joint account agreement, two (2) pay requests and vouchers must be submitted. One pay request and voucher for the appropriate progress payment amount, the other for the retained amount.

1.02 Measurement of Quantities

Quantities shown on the bid schedule are estimated and are to be considered approximate. Actual constructed quantities will vary. The Contractor will be compensated only for those items and materials actually installed and approved as part of the project. No additional pay will be granted for items or materials not installed.

- A. Payment will be made for the work completed and stored materials less retained amounts in accordance with provisions of the contract documents.
- B. Payment amounts will be based on the scheduled values and mutually agreed upon percentage of completion for each item.

1.03 Bid Item Descriptions

The cost of all material and labor required to complete this project as specified and shown on the drawings, but not specifically included as a pay item, shall be included in the bid price of its related

bid item. No extra pay shall be granted for items that are reasonably foreseen as necessary for the proper installation of an item.

PART 3 Execution

3.01 Measurement and Payment of Bid Items

A. Mobilization

1. Includes all costs for mobilization and bonding complete, including mobilization of equipment to the project site and property owner notifications in accordance with these specifications. Cost for mobilization not to exceed 10-percent of the Total Base Bid for each bid schedule. If the Contractor's bid price for mobilization exceeds 10-percent of the Total Base Bid for the bid schedule, the Owner will pay 10-percent of the Total Base Bid for the bid schedule after the Contractor mobilizes equipment on site. The remaining amount will be paid following substantial completion of the entire contract. Payment shall be by the contract unit price per Lump Sum (LS).

B. Remove and Replace Asphalt Pavement

1. Measurement of this item shall be by the number of square yards (SY) in place and approved. Measurements shall be made on the surface of the finished patch taken from the lines formed by the junction of new asphalt and old asphalt. This item shall include saw cutting, removal of existing asphalt pavement, all excavation, installation of base material, grading, compaction, and re-pavement of the surface with new hot mix asphalt. New asphalt pavement shall have a compacted thickness of no less than four inches (4") of hot mix asphalt pavement and have a base thickness of no less than six inches (7") after compaction. Payment shall be by the contract unit price per Square Yard (SY).

C. Furnish and Install Geotextile

1. Geotextile shall be stress absorbing fabric MIRAFI 500X or approved equal. Placement of Geotextile fabric shall be as directed by the Engineer. Payment shall be by the contract unit price per Square Yard (SY).

D. Sub-excavate and Install Select Backfill

1. Measurement of this item will be by the number of cubic yards of "Select Backfill" in place, compacted, and approved. This item includes all excavation, removal, and disposal of excavated material. Reconstruction of subgrade and placement of "Select" backfill shall be as directed by the Engineer. Payment shall be by the contract unit price per Cubic Yard (CY).

E. Remove and Replace Concrete Valley Gutter

1. Measurement shall be by the area, in square feet, of "Fibermesh" reinforced Portland Cement Concrete valley gutter in place and approved. The price shall include removal and disposal of

existing valley gutter, all necessary saw cutting of adjacent existing concrete, all material, leveling course material, grading, compaction, forming, finishing and protection. All concrete surfaces shall have curing compound applied once finishing is complete. Curing Compounds for all Portland Cement concrete surfaces shall be Poly-Alpha-Methyl-Styrene (PAMS) meeting the requirements of AASHTO 148 Class B, or Engineer approved equal. Valley Gutter shall conform to the "Standard Street Specifications". Measurement and payment for the installation of new valley gutter where asphalt now exists shall be the same. Included in this item shall be any necessary adjustment of water valve boxes and manhole rings to match the new finish grade. Manholes rings and valve boxes covered in this pay item are only the manholes and valves that are located in the valley pan. The replacement of adjacent asphalt shall be paid for under item A-2. Payment for this item shall be by the contract unit price per square foot (SF).

F. Remove and Replace Sidewalk

1. Measurement shall be by the length, in lineal feet, of Portland Cement Concrete sidewalk constructed as specified in place and approved. Sidewalk shall be measured along the centerline of the walk. All concrete surfaces shall have curing compound applied once finishing is complete. Curing Compounds for all Portland Cement concrete surfaces shall be Poly-Alpha-Methyl-Styrene (PAMS) meeting the requirements of AASHTO 148 Class B, or Engineer approved equal. ADA wheelchair ramps shall be constructed in all sidewalks which intersect street intersections or at radii to be replaced as directed by the Engineer. All ADA wheelchair ramps shall be Type II or Type III as shown on standard drawings. Sidewalk replaced at alley approaches shall be constructed as a curb cut. The price shall be the same whether sidewalk is constructed with or without ramps or curb cuts. New sidewalk shall match existing adjacent sidewalk. The price shall include removal and disposal of existing curbside; all necessary saw cutting of adjacent existing concrete, all material, leveling course material, grading, compaction, forming, finishing and protection. Replacement of damaged existing landscaping behind the curbside like in kind, i.e. replacement of existing grass with sod, shall be considered subsidiary to this item. Any property corners found in or behind the curbside shall be preserved. If any property corner is destroyed during the replacement of curbside the Contractor will be responsible for its replacement and will be considered subsidiary to this item. The replacement of adjacent asphalt shall be paid for in standard sidewalk, wheelchair ramps, and curb cuts shall conform to the construction specifications.

G. Furnish and Install Overlay

1. Asphalt Overlay shall be as specified in the Section 02741. Measurement shall be by the square yards to the depth specified in the drawings.

H. Furnish and Install Type II Slurry Seal

1. Measurement of Slurry Seal shall be by the actual area, in square yards, of Slurry Seal in place and accepted. The price shall be full compensation for furnishing all materials, surface preparation, mixing and applying these materials, and for all labor, equipment, tools, design testing, acceptance testing and all incidentals necessary to complete and warrant this work item as

specified. If roadway surface is not cleaned and approved prior to application of Slurry Seal, no payment shall be made. Payment shall be made by the contract unit price per Square Yard (SY).

I. Furnish and Install Temporary Traffic Control

1. Temporary traffic control shall be paid on a lump sum (LS) basis for each schedule of the project. Payment shall be consistent with the percentage of work completed in the pertinent schedule at the time of the request for payment. The lump sum payment shall cover all of the Contractor's activities in meeting traffic control requirements for the project. Flagging, replacement of traffic control devices damaged or destroyed from any cause whatsoever, furnishing and installing cones, wands, portable flashers, any barricades and channelizing devices will be incidental to Traffic Control and no separate payment will be made for any item or activity necessary to comply with this specification. Contractor is required to obtain a Traffic Control Permit from the City, but will be provided at no cost. Payment shall be made by the contract unit price per Lump Sum (LS) per Schedule.

J. Furnish and Install Truncated Domes

1. Furnish and install truncated domes shall be paid on a per each (EA) basis for each truncated dome mat that is installed and accepted. Truncated Dome mats shall be an approved color; surface installed mats shall be installed on existing ramps and cast in place mats shall be installed on all new ramps install on this project. Payment shall be made by the contract unit price of per Each (EA) per Schedule.

K. Adjust Manhole

1. Adjust manhole shall be paid on a per each (EA) basis for each manhole ring and cover adjusted, constructed, and accepted. When requested by the engineer manhole ring and cover will be lowered to expedite a milling operation. Final adjustment and construction of the manhole ring and cover shall be constructed as per the standard manhole drawing located in the appendix. This item includes all needed materials and labor needed to lower a manhole ring and cover, raise to final grade a manhole ring and cover, and install a concrete collar as per the standard drawing in the appendix. Payment shall be made by the contract unit price per Each (EA) per schedule.

L. Adjust Water Valve

1. Adjust valve box shall be paid on a per each (EA) basis for each valve adjusted, constructed, and accepted. Final adjustment and construction of the valve box shall constructed as per the standard valve box drawing located in the appendix. This item includes all needed materials and labor needed adjust the valve box, and install a concrete collar as per the standard drawing in the appendix. Payment shall be made by the contract unit price per Each (EA) per schedule.

M. Furnish and Install Lined Sewer Mains and Point Repairs

1. The method of measurement to furnish and install lined sewer main shall be by the accepted lineal foot of sewer main lined complete in place. Payment to furnish and install lined sewer main, complete and accepted in place, shall be at the contract unit price bid to furnish and

install sewer main liner per lineal foot. Payment shall be full and complete compensation for providing all labor, equipment, materials, and ancillary items to complete the work including but not limited to the cleaning of the main, video inspection of the main before and after lining and the preparation of tapes and reports detailing the findings of these inspections, the temporary diversion and pumping of effluent flows, communications with the sewer users and the public, and appurtenant work whether specifically delineated herein or incorporated by reference.

2. The method of measurement to furnish and install lined sewer main lateral reinstatement shall be by each lateral reinstated completed and accepted in place. Four (4) inch services are estimated. Actual sizes may vary. Payment to furnish and install lined sewer main lateral connections, complete and accepted in place, shall be at the contract unit price bid for each lined sewer main lateral connection. Payment shall be full and complete compensation for providing all labor, equipment, materials, and ancillary items to complete the work including but not limited to the cleaning of the lateral, video inspection of the lateral before and after lining and the preparation of tapes and reports detailing the findings of these inspections, the temporary diversion and pumping of effluent flows, communications with the sewer users and the public, and appurtenant work whether specifically delineated herein or incorporated by reference.
3. The method of measurement to furnish and install sewer main point repairs to permit the installation of the liner or correct other deficiencies shall be by each ten (10) foot segment of sewer main repaired, complete and accepted in place. Point repairs shall be measured and paid for per each ten (10) foot segment repaired, complete and accepted in place, providing the repairs of the main line required at one location are not in excess of ten (10) lineal feet, measured along the centerline of the main. Measurement for payment shall NOT be MADE for various component parts of the point repair installation, which shall be performed in conformance with the applicable sections of these Contract documents, including excavation, backfill, asphalt removal and replacement, or traffic control.
4. Payment to furnish and install sewer main point repairs, complete and accepted in place, shall be at the contract unit price bid to furnish and install the sewer main point repairs. Payment shall be full and complete compensation for providing labor, equipment, materials, and ancillary items to complete the work including but not limited to the removal and replacement of piping, the connections of the old main to new main at each end with the Fernco, or equal, coupling, the installation of "controlled density backfill" around each connection, excavation and backfill in conformance with these contract documents, temporary diversion of effluents, communications with sewer users and the public, and appurtenant work whether specifically delineated herein or incorporated by reference including but not limited to service wyes, service pipe, reconnection of services necessary select backfill, traffic control, removal of asphalt surfacing or other types of surfacing. The method of measurement to furnish and install additional point repairs necessitated and discovered through the Contractor's inspection process shall be measured and paid for at the same rate as the contract unit price bid to furnish and install the sewer main point repairs

complete in place.

5. The method of measurement to abandon in place sewer main manholes shall be by the accepted manhole abandonment complete in place. Payment to abandon in place sewer manholes complete and accepted in place shall be at the contract unit price bid to abandon in place sewer manholes. Payment shall be full and complete compensation for providing all labor, equipment, materials, and ancillary items to complete the work, including but not limited to filling the manhole with “control density backfill”, removing the ring and cover, and restoring the surface to existing conditions. No manholes are contemplated for abandonment on this project.
6. The method of measurement to route protruding service taps in sewer mains shall be by the accepted routing complete in place. Payment to route protruding service taps in place in sewer mains complete and accepted in place, shall be at the contract unit price bid to route protruding service pipes in place in sewer mains. Payment shall be full and complete compensation to provide the labor, the equipment, materials, and ancillary items to complete the work including but not limited to abrading the service pipe in place safely to reduce the profile of the service pipe protruding into the main.
7. The liner shall be fabricated to tightly fit the internal circumference and length of the host pipe. Compensation for supplementary investigations, if any, cure time, public interactions, processing methods, or other necessary procedures necessitated by the use of Cure in Place Pipe installations shall be incorporated into the unit price bid to Furnish and Install eight (8) inch Sewer Main Liner, ITEM 4 in the ITEMIZED BID SCHEDULE. Additional compensation for work necessitated by the Cured in Place Pipe installation method, which may not be specifically delineated in Section B of the Special Provisions, shall not be made.

N. Furnish and Install Guardrail

1. The method of measurement to furnish and install guardrail of various classes and dimensions will be measured in accordance with the Plans. Terminal Anchors of the various types will be measured for payment by the unit within the limits of the plans. No measurement for payment will be made for projections or anchors beyond the end post, except as noted. Furnishing and placing anchor bolts and/or devices for guardrail posts on bridges will be considered incidental to the construction and the costs thereof will be included in the price bid for other items of construction. No measurement for payment will be made for excavation or backfilling performed in connection with this construction.
2. Guardrail of the various classes and Guardrail End Terminals of the various types will be paid at the contract price per linear foot (meter) and per each, respectively, as indicated on the Plans for each class and type. No payment will be made for a section of guardrail, including end terminals, until it is complete in place. Payment shall be full compensation for all posts, blocks, rail elements, terminal sections, fittings, hardware, labor and equipment, and all incidentals necessary to complete the work. When no contract unit price has been

established for Shop Curved Metal Deep Beam Single Guardrail, payment will be made at a rate equal to 1.5 times the contract unit price for Metal Deep Beam Single Guardrail with corresponding post spacing. When no unit price has been established for Shop Curved Protective Guardrail at Bridge Ends, payment will be made at a rate equal to 1.25 times the contract unit price of Protective Guardrail at Bridge Ends. No additional payment will be made for shop curving the guardrail in the Guardrail End Terminal units.

END OF SECTION