

## MEASUREMENTS FOR PAYMENTS

(rev 6/14/07 )

All measurements shall be as specified or made by conventional means with accuracies consistent with field conditions and common practice. Should a discrepancy in measurement exist which is greater than 10%, the item in question shall be re-measured by both the Contractor and the Owner's Representative for verification. Payment shall be at the unit or lump sum prices bid in the contract proposal for each item of work.

Measurements for payments shall be based on the following schedule:

1 SEWER LINE CHEMICAL ROOT TREATMENT, including all materials, shall be paid for at the unit price bid per linear foot of each size pipe of sanitary sewer, and at the unit price bid per linear foot of each size pipe of storm sewer. Measurement of the actual number of feet treated shall be made from the center of the manholes.

2 SEWER LINE CLEANING shall be paid for at the unit price bid per linear foot of each size pipe. Measurement of the actual number of feet cleaned shall be made from the center of the manholes.

Verification of adequate cleaning by pulling a double squeegee thru each manhole section as evidence of adequate cleaning shall be paid for at the unit price bid per linear foot of each size pipe. Measurement of the actual number of feet squeegeed shall be made from the center of the manholes.

3 SEWER FLOW CONTROL:

(3.1) PLUGGING OR BLOCKING of the sewer flow shall be considered incidental to the work and shall not be considered for payment.

(3.2) PUMPING AND BYPASSING of sewer flows shall be paid for at the unit price bid per setup for each pump size, plus the unit price bid per hour of operation.

4 TELEVISION INSPECTION of the sewer lines shall be paid for at the unit price bid per linear foot of each size pipe, plus the unit price bid for re-setup for the actual number of re-setups required. Measurement of the actual number of feet inspected shall be made from the wall of the manhole.

It should be noted that if reverse setups (a situation that arises when the television camera cannot pass through the manhole section, making it necessary to reverse the positions of the television equipment and enter the sewer from the opposite direction) are required during television inspection, the per foot cost of television inspection will be paid for the actual footage between the manholes involved. Measurement of the actual number of feet inspected shall be made from the wall of the manhole to the point where the survey was abandoned from each direction.

ELECTRONIC MEDIA DOCUMENTATION shall be paid for at the unit price bid per linear foot of sewer line electronically documented and include all labor, equipment and materials required. . Measurement of the number of feet electronically documented shall be made from the wall of the manhole.

- 5 SEWER PIPE JOINT TESTING shall be paid for at the unit price bid per joint for each size pipe. Measurement shall be based on the actual number of joints tested. No payment will be made for joints requiring retesting or for joints tested after sealing.
- 6 SEWER PIPE JOINT SEALING, including all materials, shall be paid for at the unit price bid per joint for each size pipe including testing after sealing. Measurement shall be based on the actual number of joints sealed.
- 7 SLIPLINING OF SEWERS shall be paid for in accordance with the items listed below:
  - (7.1) Excavation of insertion pit, INSTALLATION OF LINER, pipe jointing, sealing of pipe in manholes, and cleanup shall be paid at the unit price bid per linear foot of each size pipe lined. Measurement of the actual number of feet sliplined shall be made from the center of the manholes.
  - (7.2) WELL POINTING of insertion pits and excavation points (when authorized by the Owner's Representative) shall be paid on a lump sum alternate, including all items necessary to keep the excavation dry; e.g. pumping, energy costs, etc. Measurement shall be based on the actual number of insertion pits and excavation points well pointed.
  - (7.3) REMOVAL OF OBSTRUCTIONS to allow liner to be pulled shall be paid at the unit price bid for each obstruction removed.
  - (7.4) CONNECTING BUILDING SEWERS shall be paid on a depth per each basis for the number of connections made, including all materials, supervision, labor, equipment, installation, excavation, backfilling, and cleanup. Measurement shall be based on the actual number of building sewers connected at the various depths.
  - (7.5) Payment for the following items, which may or may not be used, shall be made as follows:
    - A. LUMBER authorized to remain in excavations shall be paid for at the unit price bid per board foot used.
    - B. OTHER MATERIALS shall be paid for at the unit price bid per each based on the actual quantities used.
  - (7.6) PAVEMENT REMOVAL AND REPLACEMENT shall be paid as follows:

- A. Concrete for Streets, Driveways and Sidewalks: at the unit price bid per square yard, with a maximum thickness of 6 inches, in place including base materials required by the regulating agency.
- B. Asphalt Pavement: at the unit price bid per square yard , in place for each type and thickness of asphalt specified including base materials required by the regulating agency .

8 SEWER MANHOLE SEALING, including all materials, shall be paid for in accordance with the items listed below:

- (8.1) MANHOLE STRUCTURE SEALING shall be paid at the unit price bid per vertical foot of each type of manhole sealed. Measurement shall be based on the actual number of vertical feet sealed of each type and size of manhole.
- (8.2) PRECAST MANHOLE JOINT SEALING shall be paid at the unit price bid per joint sealed. Measurement shall be based on the actual number of joints sealed by size of manhole.
- (8.3) MANHOLE FRAME SEALING (Manufactured Seal) shall be paid at the unit price bid per internal and external seal and extension. Measurement shall be based on the actual number of internal seals, external seals and extensions installed or applied.
- (8.4) MANHOLE COVER SEALING OR REPLACEMENT shall be paid at the unit price bid per manhole cover sealed/replaced. Measurement shall be based on the actual number of manhole covers sealed or replaced.

9 SEWER MANHOLE REHABILITATION, including all materials, shall be paid for in accordance with the items listed below:

- (9.1) SEALING, PLUGGING, PATCHING, AND COATING shall be paid at the unit price bid per vertical foot of manhole wall with the materials specified. The bench and invert areas shall be paid for at the unit price per each complete with the material specified. Measurement shall be based on the actual number of vertical feet of manhole wall rehabilitated and the number of benches and inverts rehabilitated.
- (9.2) LINING AND STRUCTURAL ENHANCEMENT of manhole structures:
  - A. CAST-IN-PLACE CONCRETE LINER shall be paid at the unit price bid for each manhole up to 8 feet deep and at the unit price bid for each additional vertical foot of depth, for each manhole diameter. Payment for appurtenant items shall be made at the unit price bid for those individual items. Measurement shall be based on the actual number of each size (diameter) manhole that is 8 feet or less in depth and the actual number of vertical feet of additional depth of each manhole diameter.

- B. PREFABRICATED FIBERGLASS LINER shall be paid at the unit price bid per manhole. Measurement shall be based on the actual number of various size (diameter) manholes lined.
- (9.3) REPAIR OF MANHOLE CHIMNEY AND CORBEL:
- A. Payment for repair of manhole chimney and corbel in paved areas shall be made at the unit price bid per vertical foot of chimney and corbel repair in paved areas, and shall include the cost of all excavation, backfill, and pavement replacement. Measurement shall be based on the actual number of vertical feet of chimney and corbel repaired.
  - B. Payment for repair of manhole chimney and corbel in unpaved areas shall be made at the unit price bid per vertical foot of chimney and corbel repair in unpaved areas, and shall include the cost of all excavation, backfill and surface restoration. Measurement shall be based on the actual number of vertical feet of chimney and corbel repaired.
- (9.4) MANHOLE STEP REMOVAL AND REPLACEMENT shall be paid at the unit price bid per step. Measurement shall be based on the actual number of steps installed.
- (9.5) MANHOLE FRAME AND COVER REINSTALLATION OR REPLACEMENT including elevation adjustment, shall be paid for at the unit price bid for manhole frame and cover reinstallation or replacement respectively and shall include all excavation and restoration required for a complete installation. The unit price bid for replacement shall include the cost of the new frame and cover. Measurement shall be based on the actual number of frames and covers reinstalled or replaced.