

GP-9

MEASUREMENT AND PAYMENT

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GP-9.01 MEASUREMENT OF QUANTITIES FOR UNIT PRICE CONTRACTS

For all items of work, other than those to be paid by lump sum, after work is completed and before final payment is made therefore, the Engineer will make final measurements to determine quantities of various items of work Performed as the basis for final settlement. The Contractor, in the case of unit price items, will be paid for actual amount of work performed and for actual amount of materials in place, in accordance with the Specifications as shown by the final measurements. All work completed under the Contract will be measured by the Engineer according to standards of weights and measures recognized by the National Bureau of Standards.

All longitudinal measurements for area will be made along the actual surface and not horizontally, and no deductions will be made for individual fixtures in pavements having an area of 9 square feet or less. For all transverse measurements for area, the dimensions to be used in calculating the pay area will be neat dimensions shown on the Plans or ordered in writing by the Engineer.

Structures will be measured according to neat lines shown on the Plans or as ordered in writing, unless otherwise provided for elsewhere in the Specifications or in the Special Provisions.

Volumes of excavation, tamped fill and borrow pits where unit prices are given in the Proposal will be calculated from the cross-section area by use of average end area formulae. Volumes of other work such as masonry, removal of masonry, etc. will be calculated by using arithmetical formulae. Where the volume is bounded by varying dimensions and there is no simple volumetric formulae applicable, frequent cross-sections will be taken and the volume computed from average end area formulae.

Cement will be measured by weight in hundredweight (cwt) units.

All items which are measured by the linear foot, such as pipes, culverts, guardrails, under drains, etc., will be measured parallel to the base or foundation upon which such structures are placed, unless otherwise shown on the Plans or indicated in these Specifications.

The term "gage" when used in connection with the measurement of uncoated steel sheet and light plates shall mean the U.S. Standard Gage, except that when reference is made to the measurements of galvanized or aluminum sheets used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing, the term "gage" shall mean that specified in AASHTO M 36, M 167, M 196 or M 197.

When the term gage refers to measurement of wire, it shall mean the wire gage specified in AASHTO M 32.

The term ton shall mean the short ton consisting of 2,000 pounds avoirdupois. All materials specified for measurement by the ton shall be weighed on accurate, approved scales. If material is shipped by rail, the car weight may be accepted provided the actual weight of material only will be paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

All materials for which measurements are obtained by the cubic yard, loose measurements or measured in the vehicle shall be hauled in approved vehicles and measured therein at point of delivery. No allowance will be made for settlement of material in transit. Approved vehicles for this purpose shall be any size or type acceptable to the Engineer, provided the body is of such shape that the actual contents may be readily and accurately determined. Unless all approved vehicles are of uniform capacity, each approved vehicle must bear a plainly legible identification mark indicating the specific approved capacity. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when vehicles arrive at the point of delivery.

When requested by the Contractor and approved by the Engineer in writing, material specified to be measured by the cubic yard may be weighed, and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the laboratory and shall be agreed to by the Contractor before such method of measurement of pay quantities will be approved by the Engineer.

Bituminous material will be measured by volume in the railroad tank car, tank truck, drum or distributor tank of bituminous material delivered for the project. The measurements will be taken when the bituminous material is of a uniform temperature and free from air bubbles, and the temperature of the material will be recorded.

The volumetric measurement of bituminous material for these Specifications will be based upon temperature of 60 Degrees Fahrenheit.

Reference is made to ASTM D 1250, Petroleum Measurement Tables, and ASTM D 633, Volume Correction Table for Tars.

Only the quantity of bituminous material actually placed in the work and accepted will be considered in determining the amount due the Contractor.

Timber will be measured by the thousand board feet measure (Mbm) actually incorporated in the structure. Measurement will be based on nominal widths and thickness and the extreme length of each piece.

The term lump sum when used as an item of payment will mean complete payment for the unit of work described.

When completed structure or structural unit (in effect, lump sum work) is specified as the unit measurement, the unit will be construed to include all necessary work, in place, as specified and shown on the drawings.

Rental of equipment will be measured as detailed in GP-9.04.1.C.

GP-9.02 SCOPE OF PAYMENT FOR UNIT PRICE CONTRACTS

It is intended that all work shown on the Plans and included in the Specifications is to be paid for under the items listed in the Bid Form of the Proposal. The absence from the Proposal of bid items specifically described in these Specifications or shown on the Plans shall be interpreted as meaning that the cost of such work contemplated by the Contract Documents shall be included in the prices bid for related items for which quantities have been established.

Unless otherwise specified and listed in the Proposal, the Contractor shall, at his own expense and without cost to the County, be required to furnish and use material, equipment and labor as is necessary and as specified for the proper controlled maintenance of traffic.

Payments to the Contractor will be made at the contract unit prices given in the Proposal, for the actual quantities of Contract items performed in accordance with the Plans and Specifications and if, upon completion of construction, these actual quantities show either an increase or decrease from quantities given in the Proposal, the contract unit prices will still prevail, except as provided in GP-4.07 and GP-9.04 or change orders.

Except as herein provided, the Contractor shall accept the compensation, as herein provided: (1) in full payment for furnishing all material, labor, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced under the Contract; (2) for all loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during prosecution of the work and until its final acceptance by the Engineer; (3) for all risks of every description connected with prosecution of the work; and (4) for all expenses incurred in consequence of the suspension of the work as herein authorized.

In cases where the "Basis of Payment" clauses in the Specifications relating to any unit price in the bid schedule requires that said unit price cover and be considered compensation for certain work or material essential to the item, this same work or material shall not be measured or paid for under any other pay item which may appear elsewhere in the Specifications.

The payment of any partial estimate or of any retained percentage, except by and under the approved final estimate and voucher, in no way affects the obligation of the Contractor to repair or renew any defective parts of the construction, or to be responsible for all damages due to such defects.

GP-9.03 CONTINGENT ITEMS

In order to provide for certain contingencies during construction, some contracts will include contingent items for use as work proceeds. These items are only applicable to work when included in the Proposal with prices established before, or at the time of, bidding. Items of work for which a fixed price has been established by the County prior to bidding are described in the technical portion of these Specifications.

Contingent items to be bid by the Contractor shall be as specified in the Special Provisions. In absence of this, they will be cared for as described elsewhere in the Specifications for "Extra Work" or as regular bid items.

GP-9.04 FORCE ACCOUNT WORK

When the Contractor is required to perform work as a result of additions or changes to the Contract for which there are no applicable unit prices in the Contract, the County and Contractor shall make every effort to arrive at an agreed upon price for performance of such work.

9.04.1 If an agreement cannot be reached, the County may require the Contractor to do such work on a force account basis to be compensated in accordance with the following:

A. Labor

For all labor and foremen in direct charge of the specific operations, the Contractor shall receive the actual wage for each and every hour that said labor and foremen are actually engaged in such work, to which cost shall be added an amount equal to 40%

of the sum thereof. No additional allowance will be considered for Bond, Insurance, Taxes or other fringe benefits. Superintendent's time will not be allowed.

B. Material

For material accepted by the Engineer and used, the Contractor shall receive the actual cost of such materials delivered on the work including transportation charges paid by him exclusive of machinery rentals, to which cost shall be added an amount equal to 15%, plus the prevailing Maryland State Sales Tax.

C. Equipment

For any trucks, machinery or special equipment (other than small tools and small trucks incidental to the work) the use of which has been authorized by the Engineer and which may be rented from a bonafide rental firm that is an independent legal entity, the Contractor shall receive the invoiced cost of rental not to exceed the current "Rental Rate Blue Book" rates adjusted for that portion of the State of Maryland that includes Anne Arundel County. These rates shall be applied for the actual time that such items are in operation on the work. Use tax is to be reimbursed at cost. Unless there is a prior agreement, the invoiced cost shall be taken to include operating costs. The cost of the operator shall be included in the Contractor's direct labor cost.

For any trucks, machinery or special equipment (other than small tools and small trucks incidental to the work), owned and operated by the Contractor, the use of which has been authorized by the Engineer, the Contractor shall receive rates not to exceed the current "Rental Rate Blue Book" rates adjusted for that portion of the State of Maryland that includes Anne Arundel County. These rates shall be applied for the actual time such items are in operation on the work. Authorized idle time for that equipment which is necessary only for the time and material work and is not used elsewhere on the project will be paid for at fifty percent (50%) of the agreed rates. The estimated operating cost/hour for equipment shall be added to the agreed rates only for periods of operations. Operators shall be separately included in the Contractor's direct labor costs.

If a piece of equipment is not listed in the "Rental Rate Blue Book", the rate will be the prevailing rate being paid in the area where the force account work is being performed.

When equipment is used in excess of 8 hours per day or 40 hours per week, the excess time will be considered overtime. Rental rates for overtime will be the sum of: (1) 50% of the basic rate; (2) 50% of any attachments; and (3) hourly operating cost.

For purpose of definition, equipment with a new cost of five hundred dollars (\$500) or less will be considered small tools.

D. Subcontractors

When an item of work is performed on a force account basis by a Subcontractor, qualified according to the provisions of GP-8.01 of the Specifications, an amount

equal to 8% of the total cost (computed as shown in GP-9.04.1.A, B and C shall be added to the final payment for such force account work).

The amount of compensation thus realized by the additional 8% of the cost of the work performed shall be considered as full compensation to the Contractor for administration of the work performed by the Subcontractor under the force account basis.

No additional compensation will be allowed unless the Contract embraces work requiring utilization of particular trades of specialty Subcontractors to do the work. The assignment of work from one Contractor to another to equalize workloads does not qualify the Contractor to which work has been assigned as a Subcontractor.

E. Superintendence

No additional allowance shall be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

F. Compensation

The compensation as set forth above shall be received by the Contractor as payment in full for Change Order work done on a force account basis. At the end of each day the contractor's representative and the Engineer shall compare records of the cost of work as ordered on a force account basis.

G. Statements

No payment will be made for work performed on a force account basis until the Contractor furnishes the Engineer duplicate itemized statements of the cost of such force account work detailed as to the following:

1. name, classification, date, daily hours, total hours, rate and extension for such laborer and foreman;
2. designation, dates, daily hours, rental rate and extension for each unit of machinery and equipment;
3. quantities of materials, prices and extensions;
4. transportation of materials;
5. requests for payment for items under paragraphs 3 and 4 shall be accompanied by original receipted invoices for materials used and transportation charges. If, however, materials used in force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the original invoices the request for payment shall contain or be accompanied by an affidavit of the Contractor which shall certify that: such materials were taken from his stock; the quantity claimed was actually used; and the price and transportation of the material as claimed represent actual cost.

For materials and supplies expended in performance of, but not incorporated in, the work (excluding those required for rented equipment) and approved by the Engineer, the Contractor shall receive the actual cost of such materials and supplies used. The

Contractor shall receive a reasonable allowance for materials used but not expended in performance of the work.

GP-9.05 ELIMINATED ITEMS

Should any Contract items contained in the Proposal be found unnecessary for proper completion of the work contracted, the Engineer may, upon written order to the Contractor, eliminate such Contract items from the Contract under the terms and conditions described under GP-4.07. Such action will in no way invalidate the Contract, and no allowance will be made for items so eliminated in making final payment to the Contractor except as stipulated in GP-4.07 and/or for such work as may have been done, materials actually delivered and bonafide equipment costs before notification of elimination of the items.

GP-9.06 PARTIAL PAYMENTS**9.06.1 Monthly Estimates**

The Contractor shall submit in writing in the format designated in Notice to Proceed, a monthly estimate, such as he shall believe to be just and fair, of the amount of work done under each item of the Contract during the preceding month, with the exception of the month following that during which the work under the Contract is completed. The estimate shall not be required to be made by strict measurements but may be approximate only, and shall be subject to correction in later estimates. Monthly estimates may, at the discretion of the County, contain an allowance for materials delivered upon the site but not incorporated in the work, and the Contractor may be entitled to receive payment therefore. The estimate shall be submitted to the Office of the County Controller, who shall forward it to the Engineer for verification and approval. The estimate submission date shall be established on a monthly basis from the date of Notice to Proceed. A Standard Format for billing will be supplied to the Contractor at the time that the Notice to Proceed is issued.

Each month the County will pay to the Contractor the Contract value of work satisfactorily performed during the preceding calendar month, less 10% subject to qualifications below; provided however, that the County may retain out of such payment any or all sums which, by the terms of the Contract, or of any law of the State of Maryland, in force at the date of the signing of the Contract, it is authorized to retain.

After 50% of the total Contract value has been completed, in place, and 10% has been retained on this amount, the County may make the remaining partial payments in full, provided the Contractor is maintaining a rate of progress that is within 10% of his schedule. In the event the Contractor falls behind his schedule more than 10%, the normal 10% retainage will be withheld for each month that he is behind schedule by 10% or more. At such time as the Contractor's progress returns to within 10% of his schedule, the Department may make the remaining partial payments in full; however, retainage previously withheld will not be released on subsequent monthly payments.

Upon the Conditional Acceptance of the work, the withheld amount shall never decrease below 5% until a Maintenance Bond is substituted in lieu of the retainage.

Conditional Acceptance occurs on the date certified by the Engineer that construction, including all "punch-list" items, is sufficiently complete, in accordance with the Contract documents, so that the County can occupy or utilize the work for which it is intended.

9.06.2 **Conditional Acceptance Payment**

- A. Upon completion of work and conditional acceptance by the County of the project, the County at the Contractor's request and with consent of Surety, will pay the Contractor, within 30 calendar days of said request, what is hereby designated as a Conditional Acceptance Payment. Such a Conditional Acceptance Payment will be based upon quantities the Engineer has verified and set up as final quantities. To arrive at the amount of Conditional Acceptance Payment, there shall be deducted from the estimated value of the Contract: the total of all amounts previously paid to the Contractor as current estimates; sums deemed chargeable against the Contractor including liquidated damages; and a retainage as determined under GP-9.06.1.
- B. In cases where there has been substantial completion of the project or useable portions of the work and there are remaining only inconsequential or minor work items such as seeding, mulching, or planting to be completed and such items cannot be completed for an extended period of time because of seasonal or weather conditions, there may be an inspection of the completed portion for Conditional Acceptance. Upon the conditional acceptance, the County, within 30 days from such conditional acceptance, upon request of the Contractor and with consent of Surety, shall pay to the Contractor, the Conditional Acceptance Payment for that part completed. Such a partial Semi-Final Payment will be based upon quantities the Engineer has verified and set up as proposed final quantities for those items deducted from the apparent estimated value of the Contract: the total of all amounts previously paid to the Contractor as current estimates; sums deemed chargeable against the Contractor including liquidated damages; and a retainage based upon total value of the Contract sum remaining as determined by GP-9.06.1.

9.06.3 **Evidence of Payment**

The Contractor shall furnish the County with satisfactory evidence, before or within 10 days after the conditional acceptance of the work under the Contract, that all persons, partnership and corporations who have done work or furnished materials under the Contract, or in or about the work contracted for, and who have given written notice to the County of claims against the Contractor on account thereof, have been fully paid or secured.

In the event such evidence is not furnished by the Contractor, such amount as may be deemed necessary by the County to pay such claims may be retained by the County out of any money due the Contractor under the Contract until such claims shall have been fully discharged or such notice withdrawn. The County may also, with the written consent of the Contractor, use any money retained, due or to become due under the Contract for the purpose of paying for both labor and material for the work for which claims have been filed with the County.

9.06.4 Maintenance Bond

A Maintenance Bond may be furnished by the Contractor, if approved by the Engineer, in accordance with GP-5.12.3, in lieu of the retainage.

GP-9.07 FINAL PAYMENT

9.07.1 The Engineer will notify the Contractor that he is eligible for Final Payment after the expiration date of the Contract guarantee period or upon receipt and approval of the Contractor Maintenance bond. The notification will include a statement setting forth (a) additional work performed under approved Extra Work and/or Additional Work Authorizations, (b) authorized extensions of time, (c) number of working days the Engineer proposed to consider as having been used to complete the Contract, (d) a tabulation of proposed final quantities, and (e) any deductions, charges or liquidated damages the Engineer proposed to make and/or impose.

Payment for full apparent value of the Contract thus determined shall become due and payable to the Contractor within 90 days after acceptance of the project by the Engineer and assumption of responsibility for maintenance by the County, as herein provided. No payment shall be made on any monies which are withheld by the County pursuant to a good faith determination communicated to the Contractor in writing that such retention under the Contract, including but not limited to assessment of liquidated damages, credits for substituted materials, and denials of claims for compensation for extra work, is reasonable and necessary.

9.07.2 The Contractor shall then have a period of 14 working days, dating from the date upon which he received the data at the office of record for the Contract noted in GP-9.07.1 above, in which (a) to decide whether or not he will accept Final Payment upon such a basis, and (b) to notify the Engineer, in writing, of his decision. The Contractor may request an additional period up to 14 days in which to notify the Engineer of his decision. In the event the Contractor notifies the Engineer that he protests Final Payment on such a basis, that notification shall outline the reason(s) for said protest.

9.07.3 Upon receipt of a notification of acceptance, the Contractor shall prepare the Final Request for Payment and submit it to the County Comptroller. Payment by the County of the request shall be deemed to constitute Acceptance of Final Payment.

9.07.4 If, under the provisions of GP-9.07.2, the Contractor notifies the Engineer of his protest and non-acceptance of the data submitted to him, the County shall, with consent of Surety, pay the Contractor an amount based upon the data noted in GP-9.07.1, with deductions for all prior payments and a retainage in the amount of \$1,000.00. The acceptance of such Additional Semi-Final Estimate shall not be considered as a waiver on the part of the Contractor of his right to pursue his protest and press for Acceptance and Final Payment. This additional Semi-Final Estimate shall not be paid until the Contractor complies with GP-9.07.2.

9.07.5 In the event the Contractor does not accept the data submitted to him as described in GP-9.07.1, the Engineer and Contractor shall confer, at mutually convenient times, and endeavor to reconcile all points of disagreement expeditiously. If reconciliation is

accomplished, the Engineer and the County will promptly proceed with Acceptance and Final Payment on the reconciled basis.

If reconciliation is not accomplished within 30 days, the dispute will be referred to the Chief Engineer and processed by procedures set forth in GP-5.12. If such procedures produce a complete reconciliation of all points in question, then the Chief Engineer and County will proceed with Acceptance and Final Payment on this reconciled basis. If such procedures do not produce complete reconciliation, then the Chief Engineer shall submit to the County Comptroller the Final Estimate and Final Payment forms as recommended by him for payment.

- 9.07.6 All prior partial estimates and payments shall be subject to correction at the time of acceptance and Final Payment; and if the Contractor has been previously overpaid, the amount of such overpayment shall be set forth in the Final Payment Forms, and the Contractor hereby agrees that he will reimburse the County for such overpayment together with interest computed at such rate as set by the County Comptroller for the period from the date of notification by the County of the overpayment to the date such overpayment is reimbursed to the County, and his Surety will not be granted release from obligations under the terms of the Contract until reimbursement and interest payment has been made in full.

GP-9.08 PAYMENT WITHHELD

The Engineer may decline to verify and approve payment or he may nullify the whole or any part of any verification and approval previously issued, to such extent as may be necessary in his opinion to protect the Owner from loss because of:

- A. defective work not remedied,
- B. failure of the Contractor to make payments properly to subcontractors or for labor, materials, or equipment,
- C. reasonable evidence that the work cannot be completed for the unpaid balance of the Contract Sum,
- D. damage to the Owner or another Contractor,
- E. reasonable evidence that the work will not be completed within the Contract Time.
- F. such other cause in the best interest of the County and the sole discretion of the Engineer.

When the above grounds are removed, payment shall be made for the amounts withheld because of them.

END OF SECTION